# **Appendix**

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### **NOTE**

OThis 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

Starter and circuit relays not contacting or operating

Starter button not contacting

Wiring open or shorted

Ignition switch trouble

Engine stop switch trouble

Fuse blown

# Starter motor rotating but engine doesn't turn over:

Starter motor clutch trouble

### 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

Transmission gear or bearing seizure

Camshaft seizure

### No fuel flow:

No fuel in tank

Fuel tank air vent obstructed

Fuel tap clogged

Fuel line clogged

Float valve clogged

Fuel pump damaged

### **Engine flooded:**

Fuel level in carburetor 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.)

### Fuel/air mixture incorrect:

Pilot screw and/or idle adjusting screw maladjusted

Pilot jet or air passage clogged

Air cleaner clogged, poorly sealed, or missing

Starter jet clogged

### No spark; spark weak:

Spark plug dirty, broken, or maladjusted Spark plug cap or spark plug lead trouble Spark plug cap shorted or not in good contact Spark plug incorrect

Crankshaft sensor trouble

Igniter trouble

Ignition coil trouble

Battery voltage low

Ignition or engine stop 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)

Compression release (KACR) cam sticks open (Engine stalls when moving off)

# Poor Running at Low Speed:

### Spark weak:

Spark plug dirty, broken, or maladjusted

Spark plug cap or spark plug lead trouble Spark plug cap shorted or not in good con-

tact

Spark plug incorrect

Igniter trouble

Crankshaft sensor trouble

Ignition coil trouble

Battery voltage low

### Fuel/air mixture incorrect:

Pilot screw and/or idle adjusting screw maladjusted

Pilot jet or air passage clogged

Choke plunger stuck open

Air cleaner clogged, poorly sealed, or missing

Fuel level in carburetor too high or too low

Fuel tank air vent obstructed

Fuel pump trouble

Carburetor holder loose

Air cleaner duct loose

### 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)

Compression release (KACR) cam sticks open (Engine stalls when moving off)

#### Other:

Carburetor vacuum piston doesn't slide smoothly

Engine oil viscosity too high

Brake dragging

Igniter trouble

Front or rear final gear case oil viscosity too high

# Poor Running or No Power at High Speed: Firing incorrect:

Spark plug dirty, broken, or maladjusted Spark plug cap or spark plug lead trouble Spark plug cap shorted or not in good contact

Spark plug incorrect

Crankshaft sensor trouble

Igniter trouble

Ignition coil trouble

### Fuel/air mixture incorrect:

Main jet clogged or wrong size

Jet needle or needle jet worn

Main air jet clogged

Bleed holes of air bleed pipe or needle jet clogged

Fuel level in carburetor too high or too low Air cleaner clogged, poorly sealed, or miss-

ina

Choke plunger stuck open

Water or foreign matter in fuel

Carburetor holder loose

Air cleaner duct loose

Fuel tank air vent obstructed

Fuel tap clogged

Fuel line clogged

Fuel pump trouble

# Compression low:

Spark plug loose

Cylinder head not sufficiently tightened

No valve clearance

Cylinder, piston worn

Piston rings 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.)

Compression release cam (K.A.C.R.) sticks open (Engine stalls when moving off)

# Knocking:

Carbon built up in combustion chamber

Fuel poor quality or incorrect

Spark plug incorrect

Igniter trouble

### Miscellaneous:

Throttle valve won't fully open

Carburetor vacuum piston doesn't slide smoothly

Carburetor vacuum piston diaphragm damaged

Brake dragging

Engine overheating

Engine oil level too high

Engine oil viscosity too high

Front or rear final gear case oil viscosity too high

### Overheating:

### Firing incorrect:

Spark plug dirty, broken, or maladjusted

Spark plug incorrect

Igniter trouble

### Fuel/air mixture incorrect:

Main jet clogged or wrong size

Fuel level in carburetor too low

Carburetor holder loose

Air cleaner poorly sealed, or missing

Air cleaner duct loose Air cleaner clogged

Fuel pump trouble

### 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

### Lubrication inadequate:

Engine oil level too low

Engine oil poor quality or incorrect

# Front or rear final gear case overheating:

Insufficient oil

Bevel gears maladjusted

LSD clutches in front final gear case maladiustment

### **Coolant incorrect:**

Coolant level too low

Coolant deteriorated

Wrong coolant mixed ratio

### Cooling system component incorrect:

Radiator fin damaged

Radiator clogged

Thermostat trouble

Radiator cap trouble

Radiator fan switch trouble

Fan motor broken

Fan blade damaged

Water pump not turning

Water pump impeller damaged

# **Over Cooling:**

# Cooling system component incorrect:

Radiator fan switch trouble

Thermostat trouble

### **Converter Operation Faulty:**

### Belt slipping:

Belt dirty, worn, or wetted

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

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

Drive pulley spring incorrect installed (too

Driven pulley movable sheave doesn't move smoothly

### **Gear Shifting Faulty:**

### Doesn't go into gear:

Shift fork bent or seized

Gear stuck on the shaft

Shift tie-rod maladjusted

Shift tie-rod damaged

### Jumps out of gear:

Shifter groove worn

Gear dogs worn

Shift fork worn, bent

Shift arm positioning bolt spring weak or broken

Shift tie-rod maladjusted

Drive shaft, output shaft, and/or gear splines worn

#### Overshifts:

Shift arm positioning bolt spring weak or

Shift tie-rod maladjusted

# **Abnormal Engine Noise:**

## Knocking:

Igniter trouble

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 holes worn

#### Valve noise:

Valve clearance incorrect

Valve spring broken or weak

Camshaft bearing worn

Rocker arm worn

#### Other noise:

Connecting rod small end clearance exces-

Connecting rod big end clearance excessive

Piston ring worn, broken, or stuck

Piston seizure, damage

Cylinder head gasket leaking

Exhaust pipe leaking at cylinder head connection

Crankshaft runout excessive

Engine mounts loose

Crankshaft bearing worn

Camshaft chain tensioner trouble

Camshaft chain, sprocket, guides worn

Alternator rotor loose

### **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

Wear guides worn

### Transmission noise:

Bearing worn

Transmission gears worn or chipped Metal chips jammed in gear teeth

Engine oil insufficient or too thin

# Front or rear final gear case noise:

Insufficient lubricant

Incorrect oil (Front final gear case)

Bevel gear bearings worn

Bevel gears worn or chipped

Bevel gears maladjusted

Worn LSD clutch friction plate (Front final gear case)

Thrust plug maladjusted (Rear final gear case)

Damaged side gears or pinions (Front final gear case)

#### **Abnormal Frame Noise:**

## Shock absorber noise:

Shock absorber damaged

### Disc brake noise:

Pad installed incorrectly

Pad surface glazed

Disc warped

Caliper trouble

### Rear brake noise:

Foreign matter in hub

Brake not properly adjusted

#### Other noise:

Bracket, nut bolt, etc. not properly mounted or tightened

### **Exhaust Smokes Excessively:**

### White smoke:

Piston oil ring worn

Cylinder worn

Valve oil seal damaged

Valve guide worn

Cylinder head gasket damaged

Engine oil level too high

### **Black Smoke:**

Air cleaner clogged

Main jet too large or fallen off

Choke plunger stuck open

Fuel level in carburetor too high

#### Brown smoke:

Main jet too small

Fuel level too low

Air cleaner duct loose

Air cleaner poorly sealed or missing

# Handling and/or Stability Unsatisfactory Steering wheel hard to turn:

Tire air pressure too low

Steering shaft damaged

Steering shaft lubrication inadequate

Steering shaft bent

Steering gear assembly damaged

Steering knuckle joint damaged

Tie-rod end damaged

LSD clutch maladjusted (front final gear case)

# Noise when turning:

Side gear or pinion damaged (front final gear case)

LSD clutch friction plates damaged (Front final gear case)

# Steering wheel shakes or excessively vibrates:

Tire worn

Wheel rim warped

Suspension arm bushing worn

Tie-rod joint worn

Axle shaft bearing worn

Steering wheel mount loose

Steering bolt or nut loose

### Steering wheel pulls to one side:

Frame bent

Wheel maladjustment

Suspension arm bent or twisted

Steering shaft bent

Steering gear assembly damaged

Front or rear tire air pressure unbalanced

Shock absorber unbalanced

# Shock absorption unsatisfactory:

### Too hard:

Tire air pressure too high

Shock absorber damaged

### Too soft:

Shock absorber oil leaking

Shock absorber spring weak

Tire air pressure too low

Shock absorber damaged

### **Brake Doesn't Hold**

### Front brake:

Air in the brake line

Brake fluid leakage

Brake fluid deteriorated

Primary or secondary cup trouble

Master cylinder scratched inside

Pad overworn or worn unevenly

Oil, grease on pads and disc

Disc worn or warped

Brake overheated

#### Rear Brake:

Brake not properly adjusted

Plates worn

Brake parts worn or damaged

# Kawasaki Engine Brake Control System Malfunction:

Actuators failed

Speed sensor short or open

Forward/Reverse detecting sensor short or

Actuator controller failed

Controller 10 A fuse blown

Battery disconnected

### **Battery Discharged:**

Battery faulty (e.g., plates sulphated, shorted through sedimentation, electrolyte level too low)

Battery leads making poor contact

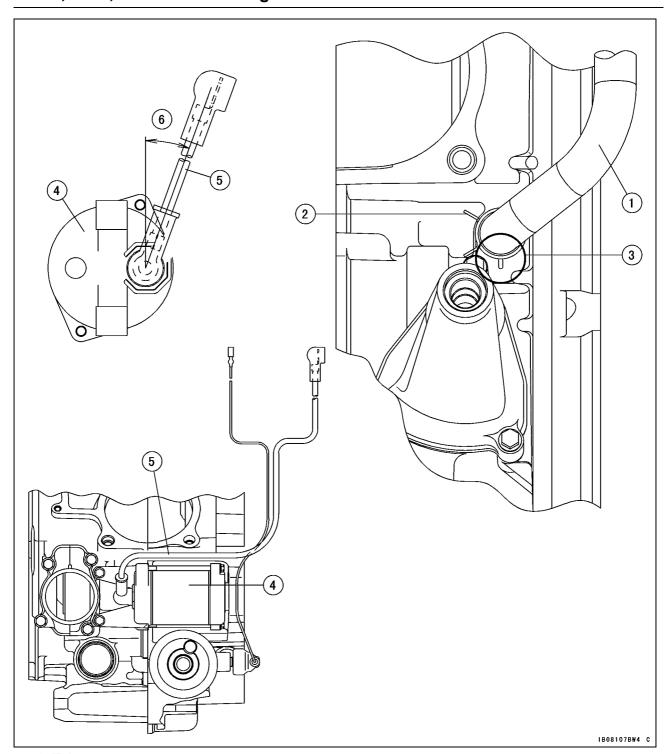
Load excessive (e.g., bulb of excessive wattage)

# 17-6 APPENDIX

# **Troubleshooting Guide**

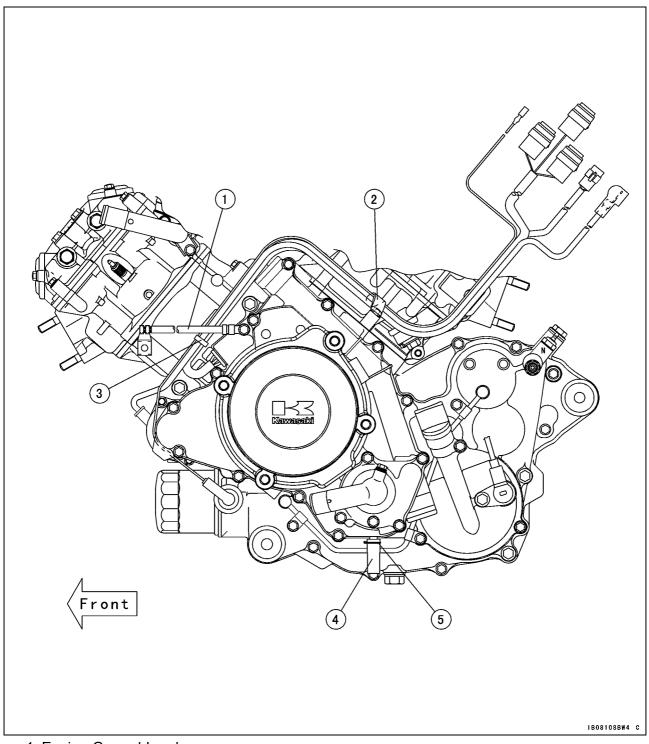
Ignition switch trouble Regulator/rectifier trouble Alternator trouble Wiring faulty

**Battery Overcharged:**Regulator/rectifier trouble Battery trouble

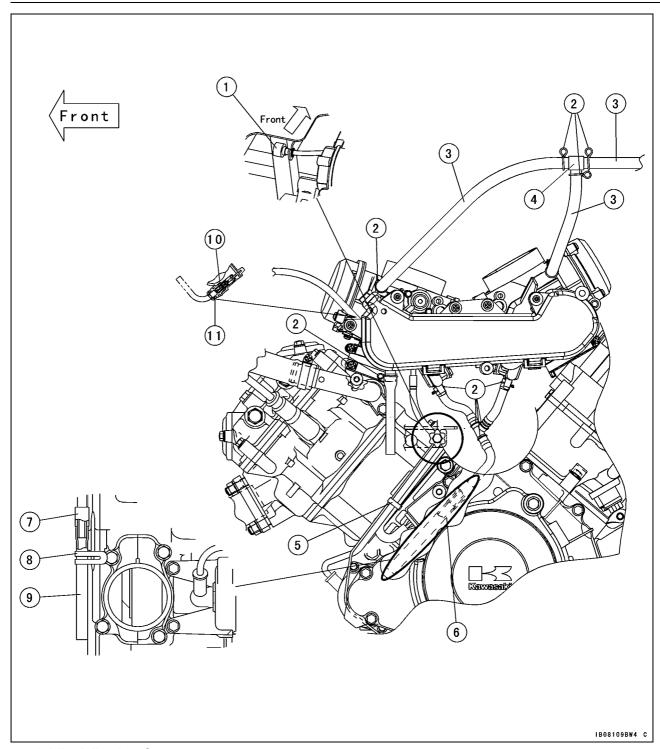


- 1. Tube
- 2. Clamps
- 3. Align the white paint mark on the tube with the adjustment mark on the crankcase.
- 4. Starter Motor
- 5. Starter Motor Cable
- 6. about 20°

# **17-8 APPENDIX**

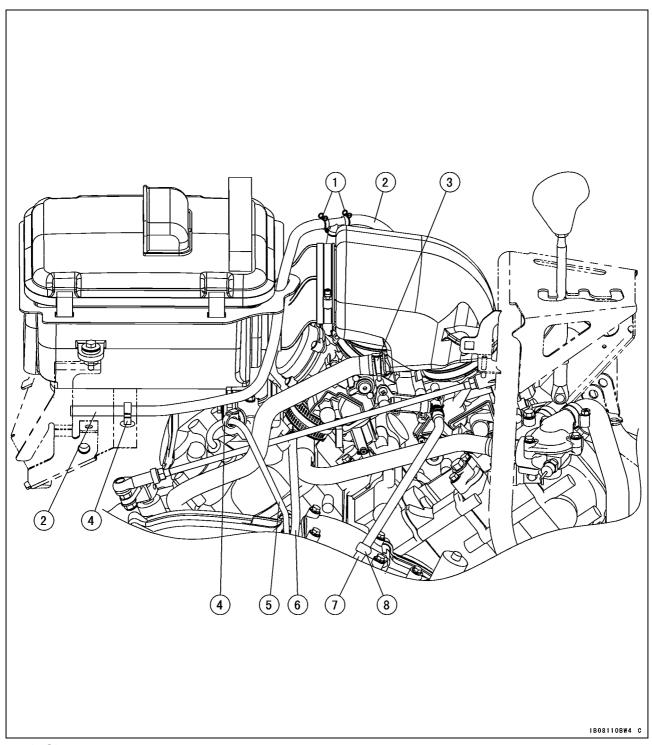


- Engine Ground Lead
  Clamp
- 3. Band
- 4. Tube
- 5. Clamp

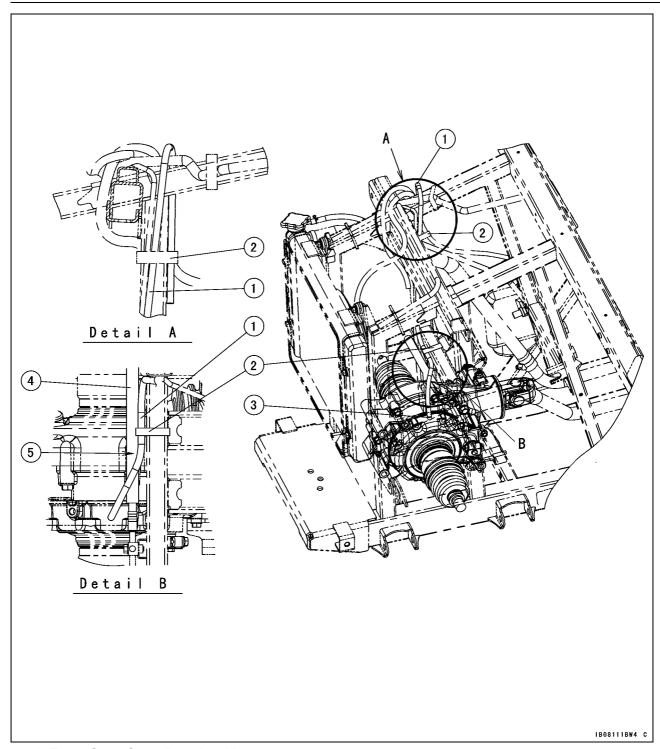


- 1. Idle Adjusting Screw
- 2. Clamps
- 3. Breather Hoses
- 4. Fitting
- 5. Band
- 6. to Engine Right Side
- 7. Check Valve
- 8. Clamp
- 9. Drain Hose
- 10. Choke Cable Plunger
- 11. Boot

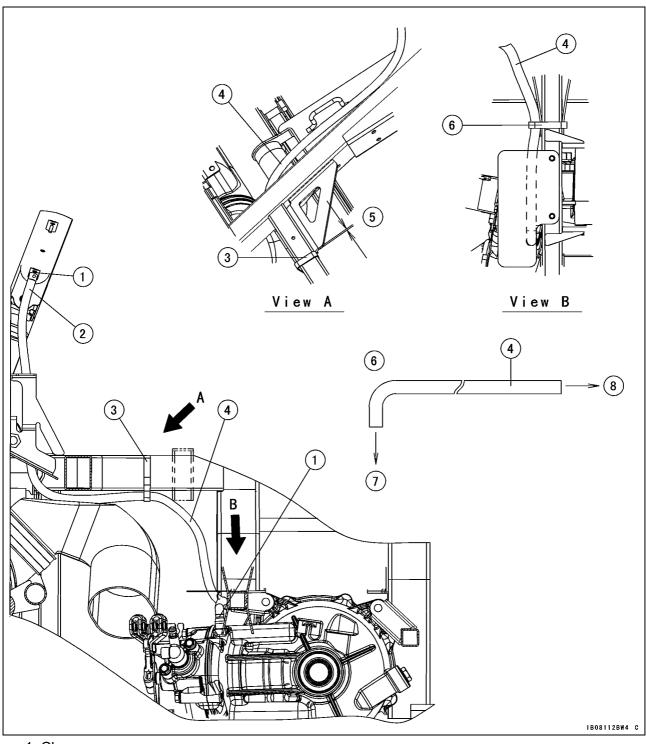
# **17-10 APPENDIX**



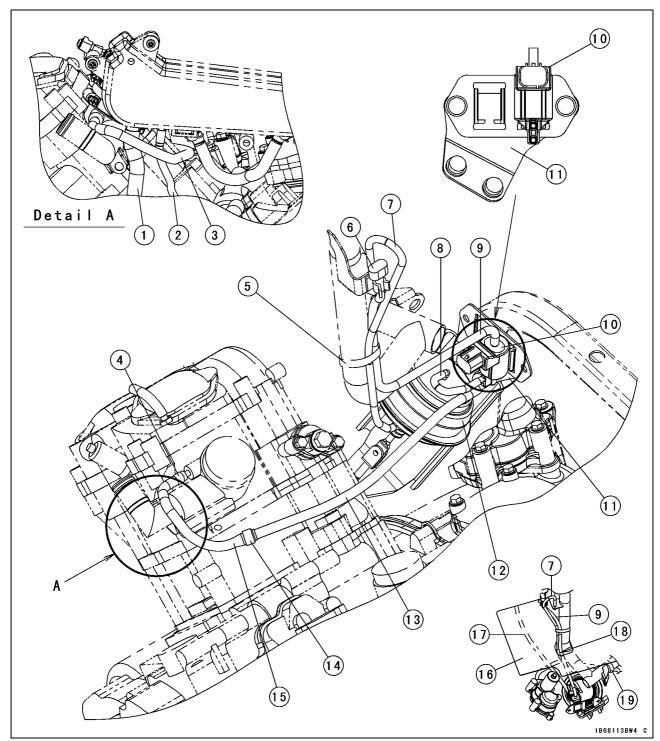
- Clamps
  Breather Hoses
- 3. Clamp
- 4. Clamps5. Ignition Coil Lead
- 6. Vacuum Hose
- 7. Fuel Hose
- 8. Clamp



- 1. Front Gear Case Breather Hose
- 2. Bands
- 3. Clamp
- 4. Brake Hose
- 5. Run the breather hose over the brake hose.



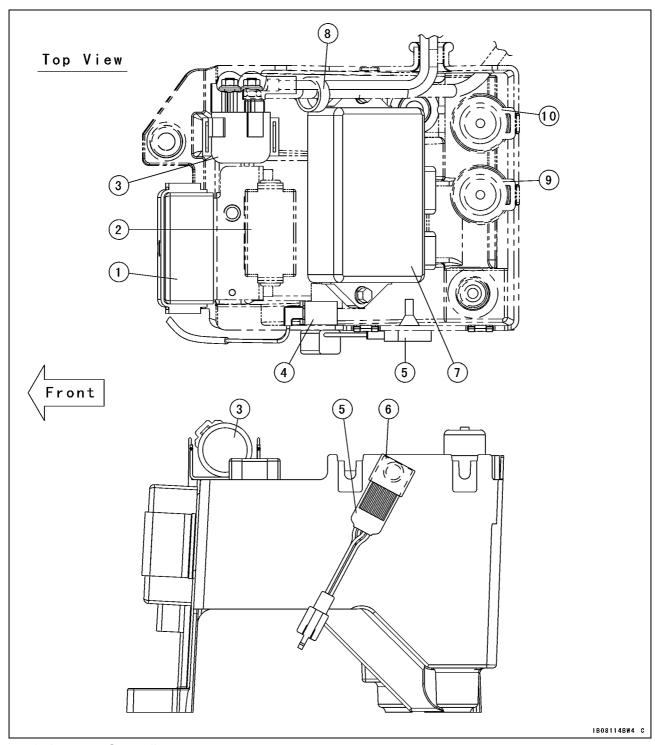
- 1. Clamp
- 2. Install the breather hose to outside (lower) fitting.
- 3. Install the band at position as shown in the figure.
- 4. Rear Gear Case Breather Hose
- $5.0 \sim 10 \text{ mm} (0 \sim 0.39 \text{ in.})$  (distance from bracket to band)
- 6. Direction of Breather Hose Installation
- 7. to Gear Case
- 8. to Frame



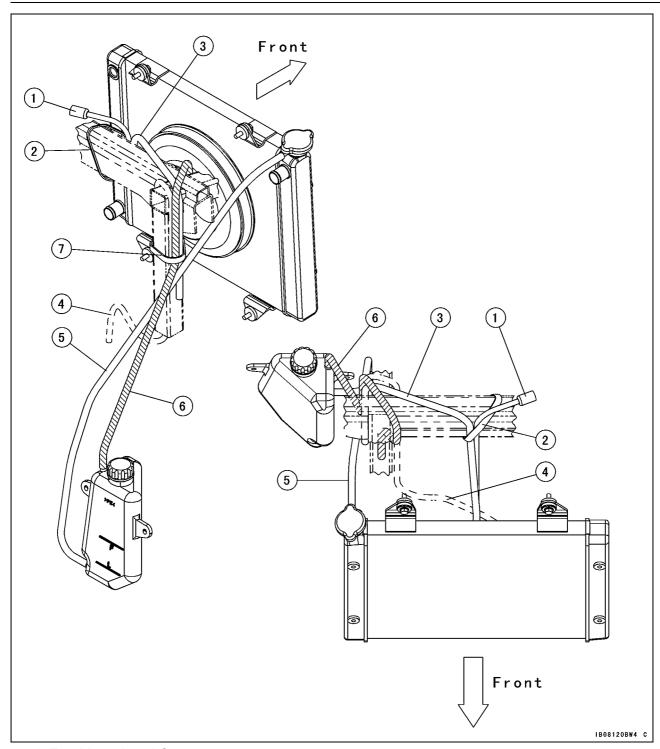
- 1. Drain Hose
- 2. Idle Adjusting Cable
- 3. Vacuum Hose (Run the vacuum hose over the drain hose and idle adjuster cable.)
- 4. Clamp
- 5. Band
- 6. Filter
- 7. Breather Hose
- 8. Vacuum Hose
- 9. Vent Hose

- 10. 2WD/4WD Solenoid Valve
- 11. Bracket
- 12. Vacuum Actuator
- 13. Vacuum Hose
- 14. Clamp
- 15. Vacuum Hose
- 16. Cover
- 17. Run the vacuum hose under the cover.
- 18. Run the hoses into the hole.
- 19. Tighten the band with three leads.

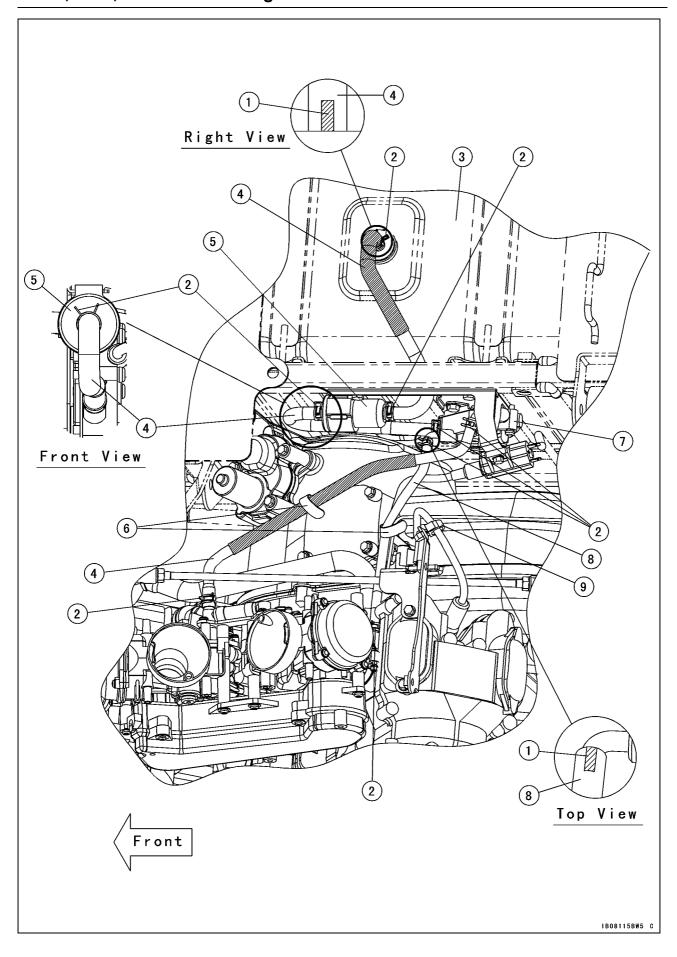
# **17-14 APPENDIX**



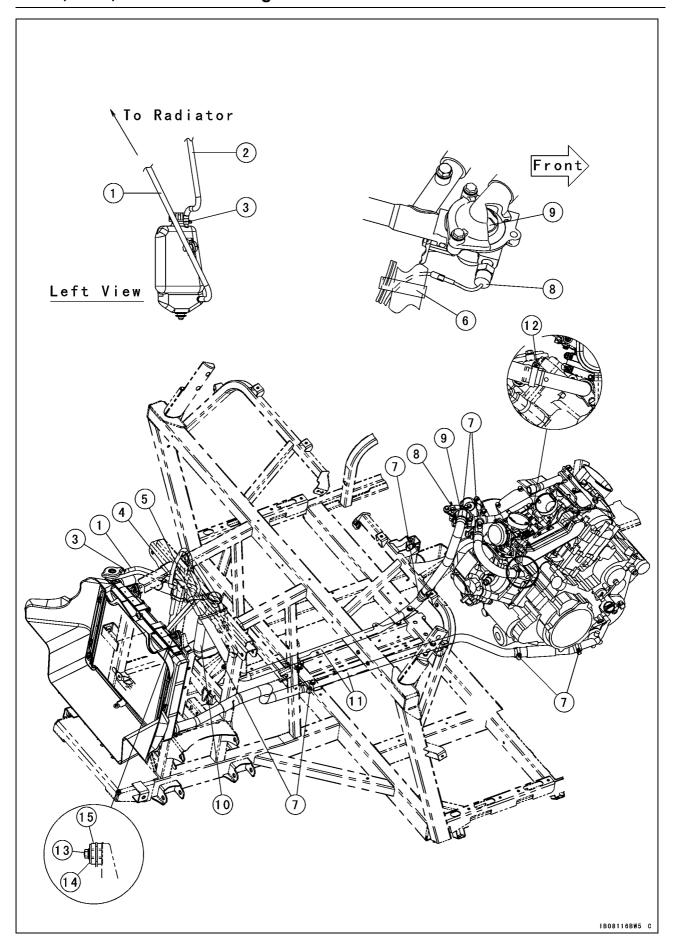
- 1. Actuator Controller
- 2. Fuse Box
- 3. Starter Relay
- 4. Radiator Fan Breaker
- 5. Air Temperature Sensor
- 6. Holder
- 7. Igniter
- 8. Clamp
- 9. Starter Circuit Relay (Neutral)
- 10. Starter Circuit Relay (Brake)



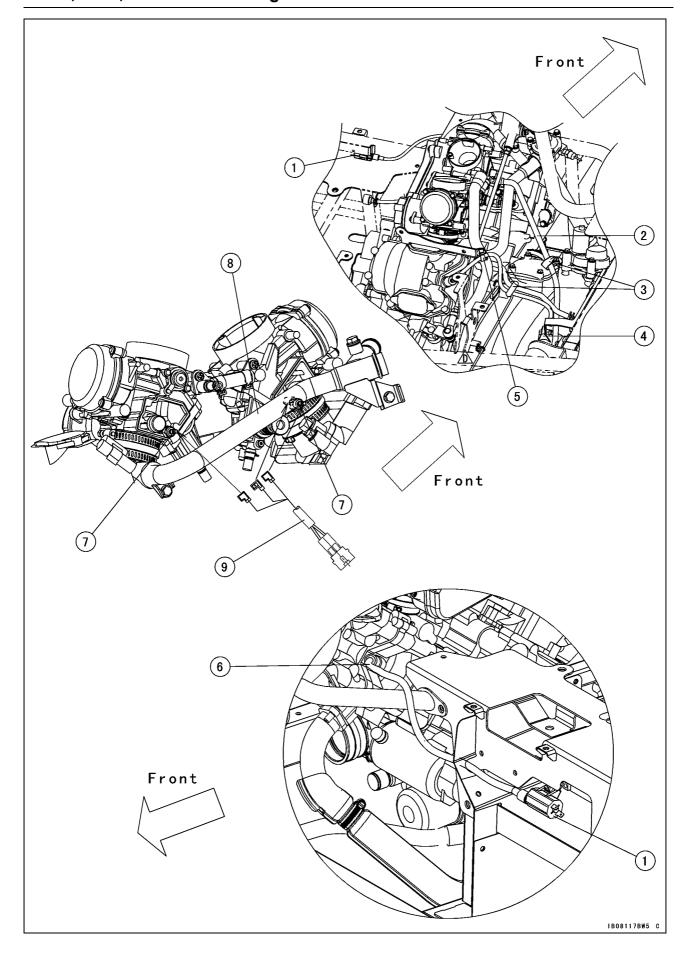
- 1. Fan Motor Lead Connector
- 2. Band
- 3. Fan Motor Breather Hose
- 4. Front Gear Case Breather Hose
- 5. Reserve Tank Hose
- 6. Reserve Tank Overflow Hose
- 7. Band



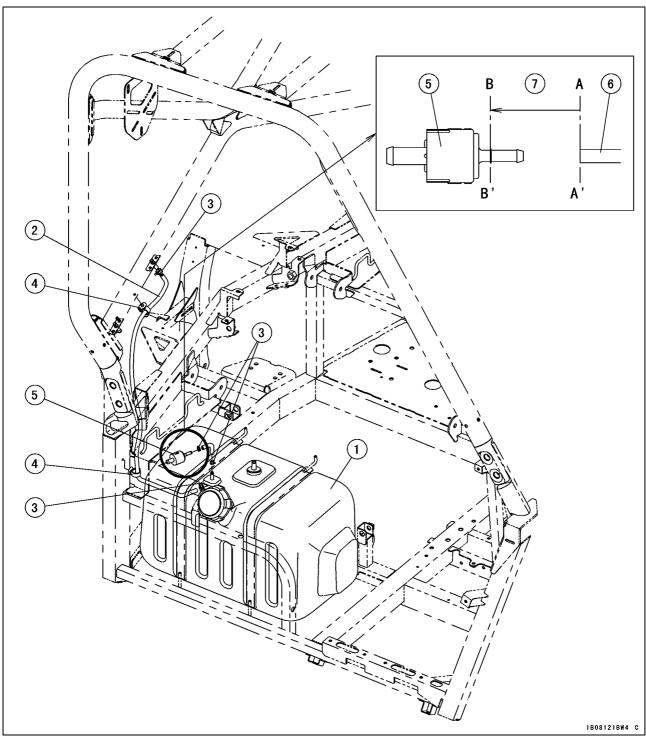
- 1. White Mark
- 2. Clamps
- 3. Fuel Tank
- 4. Fuel Hose
- 5. Fuel Filter
- 6. Clamps
- 7. Fuel Pump
- 8. Vacuum Hose
- 9. Clamp



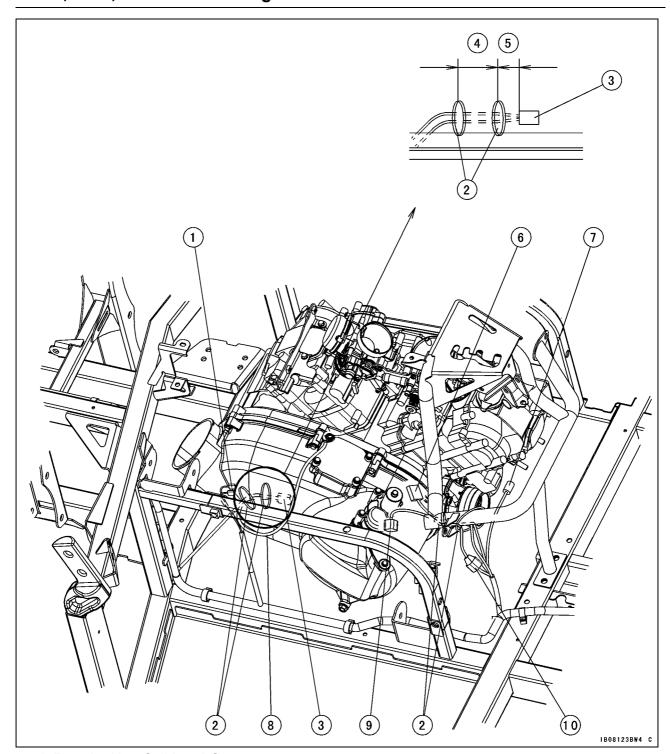
- 1. Reserve Tank Hose
- 2. Reserve Tank Overflow Hose
- 3. Clamps
- 4. Fan Motor Breather Hose
- 5. Clamp
- 6. Band
- 7. Clamps
- 8. Water Temperature Switch
- 9. Thermostat
- 10. Reserve Tank
- 11. Water Pipes
- 12. Tighten the clamp screw to the direction as shown in the figure.
- 13. Radiator Mounting Bolt
- 14. Collar
- 15. Damper



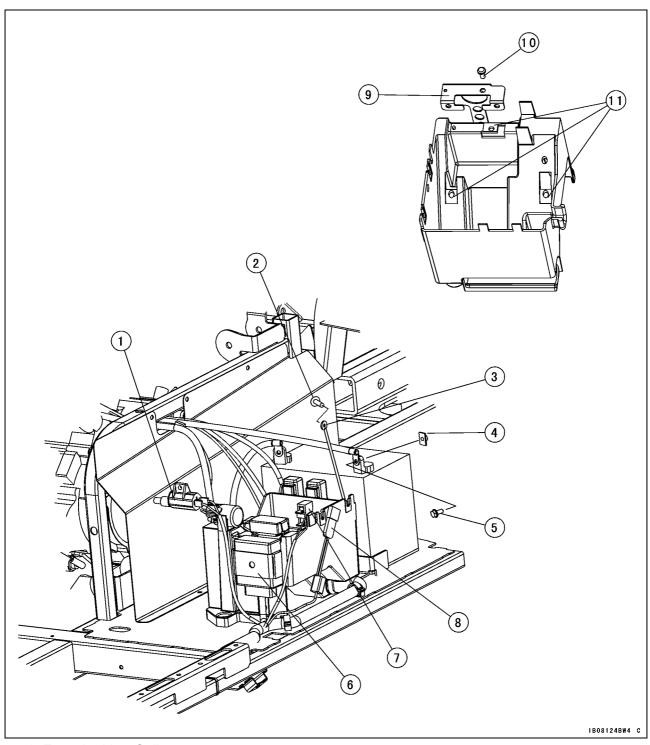
- 1. Front Ignition Coil
- 2. Fuel Hose
- 3. Clamps
- 4. Rear Ignition Coil
- 5. Clamp
- 6. Front Ignition Coil Lead
- 7. Carburetor Heaters
- 8. Ground Terminal
- 9. Carburetor Heater Lead



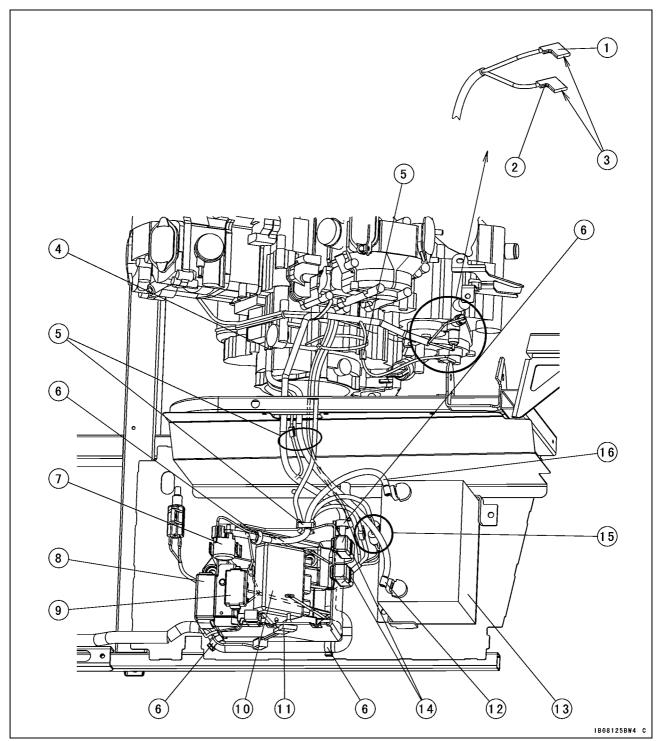
- 1. Fuel Tank
- 2. Fuel Tank Breather Hose
- 3. Clamps
- 4. Clamps
- 5. Check Valve
- 6. Fuel Tank Breather Hose
- 7. Fit the tube edge (A-A') to the line (B-B') on the check valve.



- 1. Rear Ignition Coil Lead Connectors
- 2. Bands
- 3. Speed Sensor Lead Connector
- 4. 100 mm (3.94 in.)
- 5. 40 mm (1.57 in.)
- 6. Carburetor Heater Lead Connector
- 7. Water Temperature Switch Lead Connector
- 8. Speed Sensor Ground Lead
- 9. 2WD/4WD Solenoid Valve Lead Connector (Apply grease to the connector.)
- 10. Engine Brake Actuator Lead Connector

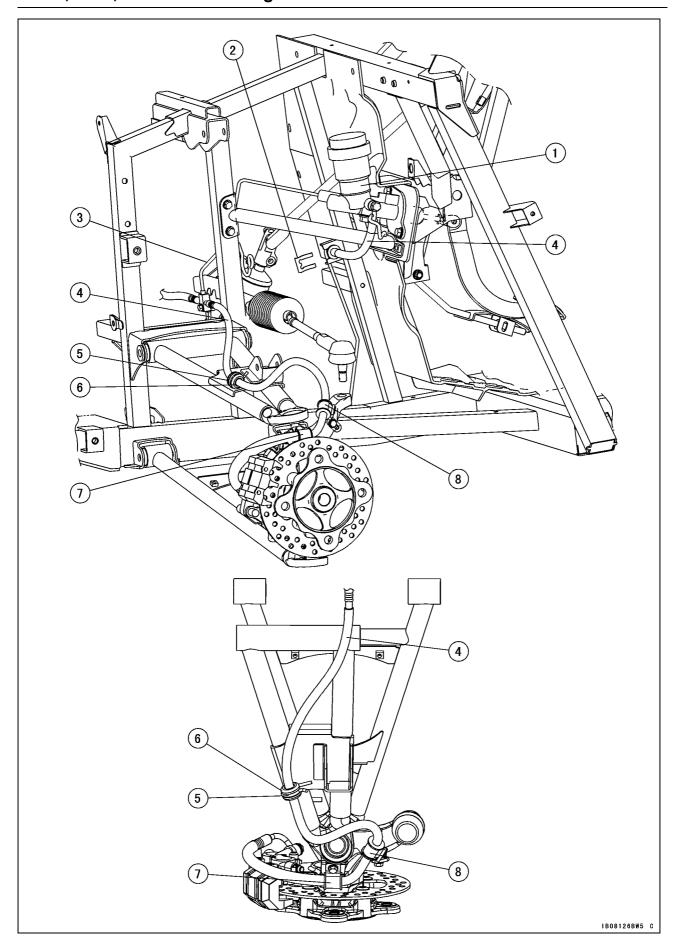


- 1. Front Ignition Coil
- 2. Screw
- 3. Frame Ground Lead Terminal
- 4. Battery Cable Mounting Nut5. Battery Cable Mounting Bolt
- 6. Actuator Controller
- 7. Radiator Fan Breaker
- 8. Air Temperature Sensor
- 9. Fuse Box Bracket
- 10. Fuse Box Bracket Bolt
- 11. Clip Nuts

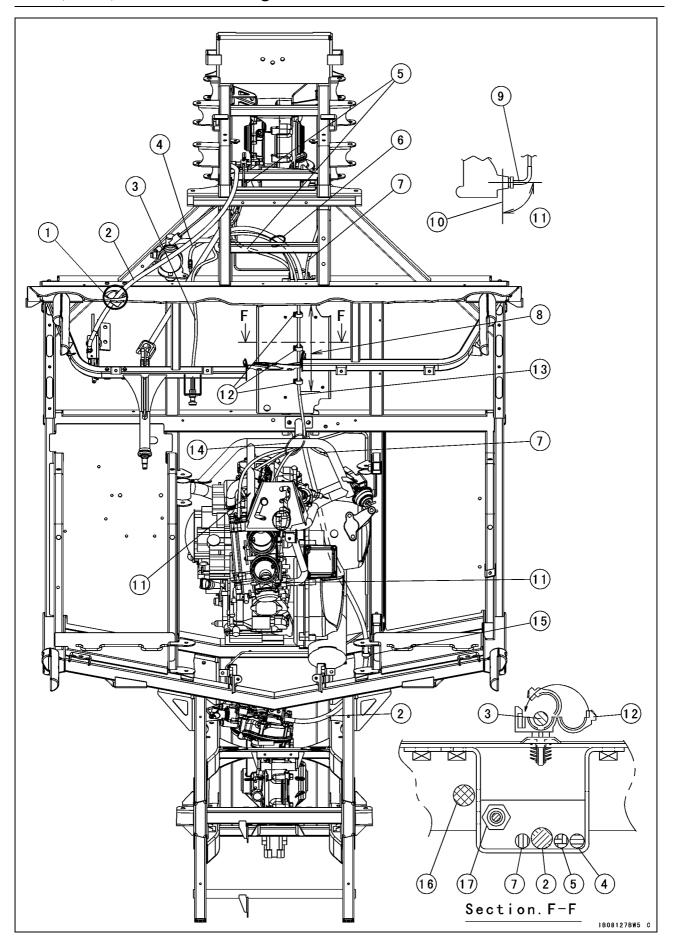


- 1. Reverse Switch Lead (Red/White) Connector
- 2. Neutral Switch Lead (Light Green) Connector
- 3. Apply grease (AMOCO RYKON PRE-MIUM #2 Green) to the connectors.
- 4. Engine Ground Terminal Bolt
- 5. Bands
- 6. Clamp
- 7. Starter Relay

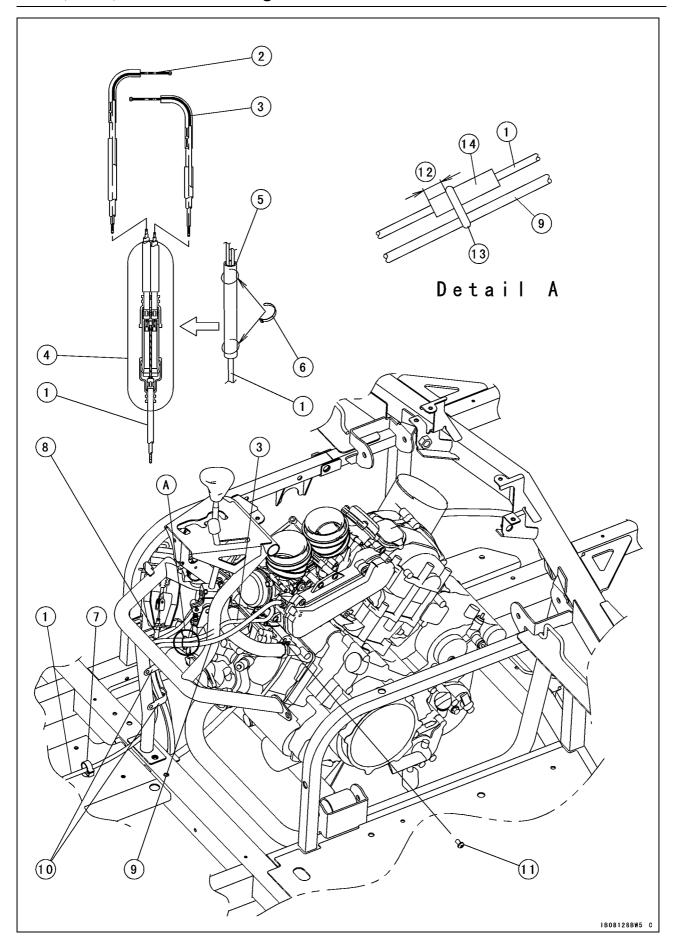
- 8. Actuator Controller
- 9. Fuse Box
- 10. Igniter (Apply grease to the lead connector.)
- 11. Air Temperature Sensor
- 12. Battery Negative (-) Cable
- 13. Battery
- 14. Starter Circuit Relays
- 15. Alternator Lead Connectors
- 16. Battery Positive (+) Cable



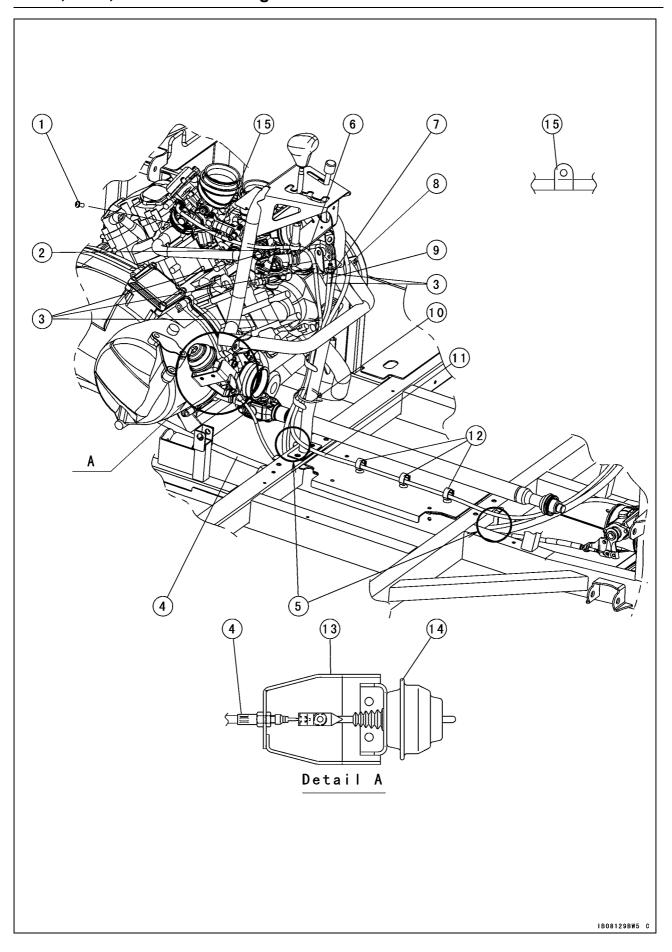
- 1. Front Brake Master Cylinder
- 2. Retainer
- 3. Brake Pipe
- 4. Brake Hoses
- 5. Clamp
- 6. Grommet
- 7. Clamp
- 8. Clamp (Right clamp has red paint. Left clamp is no paint.)



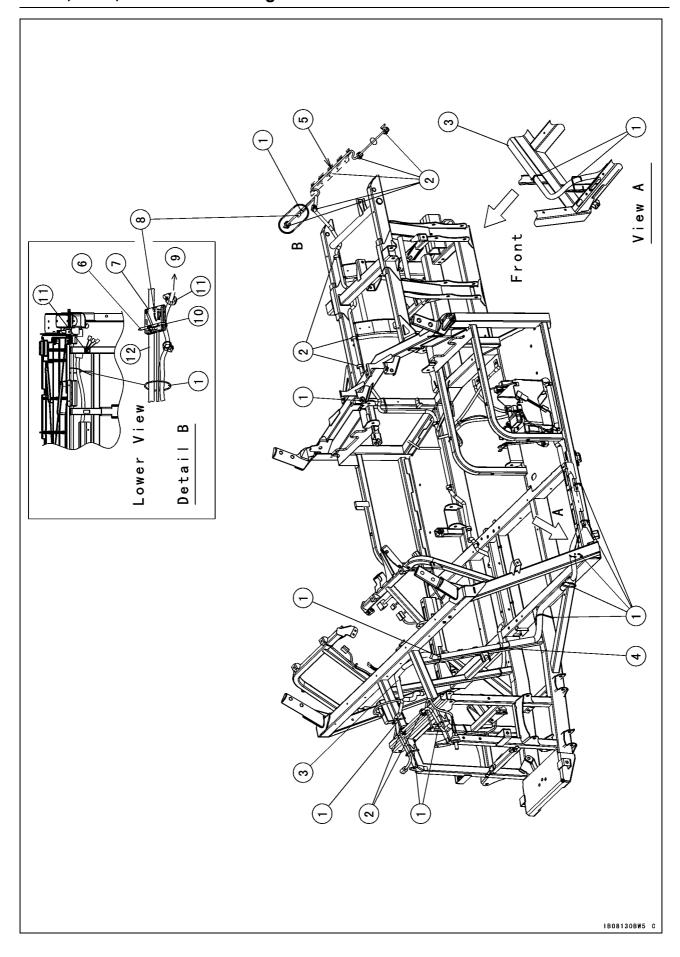
- 1. Grommet
- 2. Parking Brake Cable
- 3. Choke Cable
- 4. Throttle Cable
- 5. Differential Shift Cable
- 6. Band
- 7. 2WD/4WD Shift Cable
- 8. The choke cable should be no bend in this area.
- 9. Choke Cable Casing Cap
- 10. Carburetor Side Body
- 11. The choke cable casing cap should be installed to be right angle to the carburetor side body.
- 12. Clamps
- 13. Choke Cable
- 14. Band
- 15. Clamp
- 16. Main Harness
- 17. Brake Pipe



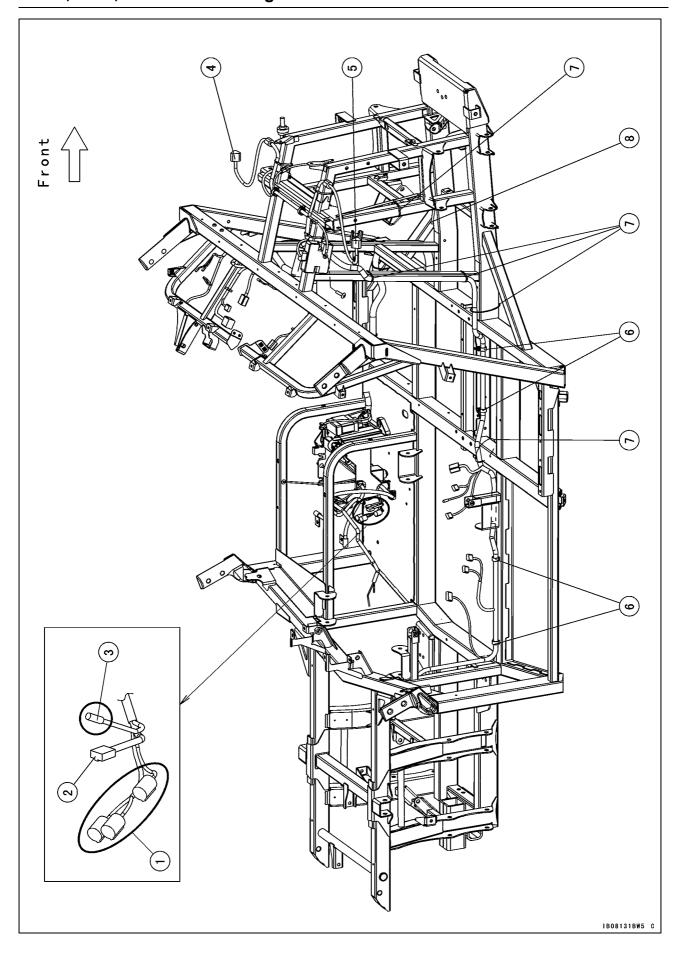
- 1. Choke Cable
- 2. Choke Cable (Rear Side)
- 3. Choke Cable (Front Side)
- 4. Cover up the enclosure area on the choke cable with insulator, and then fasten the bands two places.
- 5. Insulator
- 6. Bands
- 7. Clamp
- 8. 2WD/4WD Shift Cable
- 9. Throttle Cable
- 10. Bands (Tighten the throttle cable, differential shift cable and choke cable.)
- 11. Screw (Install the cable clamp to bracket on engine and tighten the screw.)
- 12. 10 mm (0.039 in.)
- 13. Band
- 14. Protector



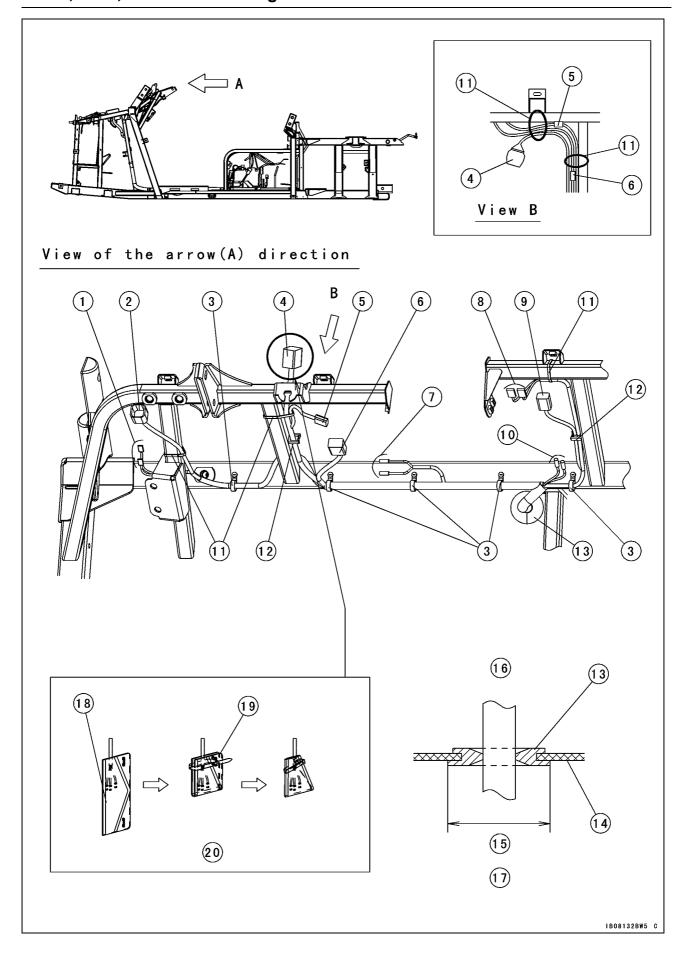
- 1. Screw (Install the cable clamp to bracket on engine and tighten the screw.)
- 2. Do not install the choke cable over the carburetor above side.
- 3. Taping
- 4. 2WD/4WD Shift Cable
- 5. Throttle cable, differential shift cable and 2WD/4WD shift cable should be passed through in tunnel of frame.
- 6. Tube: 200 mm (7.87 in.)
- 7. Tube: 80 mm (3.15 in.)
- 8. Throttle Cable
- 9. Differential Shift Cable
- 10. Band
- 11. Choke Cable
- 12. Clamps
- 13. Holder
- 14. Vacuum Actuator
- 15. Do not bend the choke cable brackets (both sides).



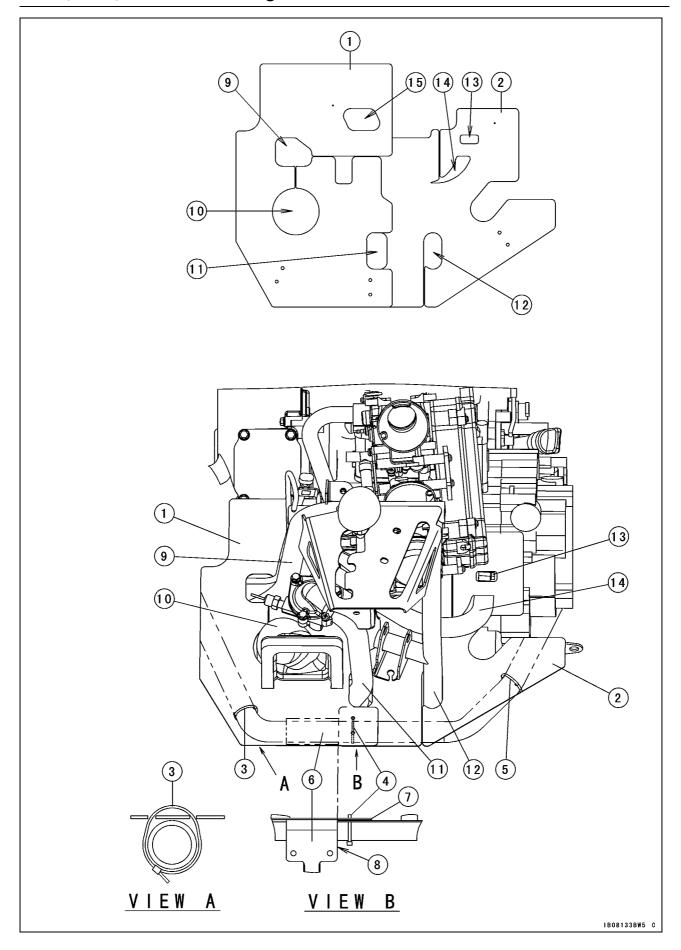
- 1. Bands
- 2. Clamps
- 3. Main Harness
- 4. Push the pre-install clamp in the hole of frame.
- 5. Install the harness inside the clamps.
- 6. Band
- 7. Cover
- 8. Reverse Light Lead Connector
- 9. To Right Brake/Tail Light
- 10. Tighten the band with cover and right brake/tail light lead.
- 11. Clamp
- 12. Bar



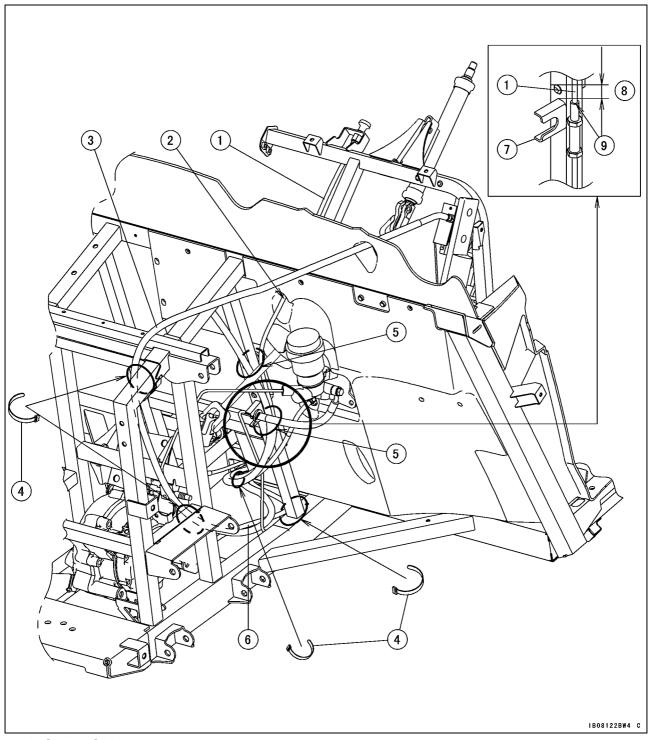
- 1. Alternator Lead Connectors (Free Location)
- 2. Grease to the inside of connector.
- 3. Oil Pressure Switch Lead Connector
- 4. Headlight Lead Connector (Left Side)
- 5. Headlight Lead Connector (Right Side)
- 6. Clamps
- 7. Bands
- 8. 4WD Indicator Light Switch Lead



- 1. Parking Brake Light Switch Lead Connectors
- 2. Lighting Switch Lead Connector
- 3. Clamps
- 4. Meter (Option) Lead Connector
- 5. 2WD/4WD Shift Switch Lead Connector
- 6. Ignition Switch Lead Connector
- 7. Brake Light Switch Lead Connector
- 8. Hour Meter Lead Connectors
- 9. Indicator Lights Lead Connector
- 10. Accessory Connector Lead Connectors
- 11. Bands
- 12. Clamps
- 13. Grommet
- 14. Floorboard
- 15. Large Diameter
- 16. Driver Side
- 17. Wheel Side
- 18. Cover
- 19. Band
- 20. Installation of Cover



- 1. Cover (P/No.14091-1643)
- 2. Cover (P/No.14091-1644)
- 3. Band
- 4. Band
- 5. Band
- 6. Plate
- 7. Install the cover [1] on the cover [2].
- 8. Fit the end of the cover [2] to this position.
- 9. Pipe
- 10. Converter Duct
- 11. Water Hose
- 12. Pipe
- 13. Clamp
- 14. Water Hose
- 15. Tensioner



- 1. Choke Cable
- 2. Grommet
- 3. Parking Brake Cable
- 4. Bands
- 5. Bands: Tighten with main harness.
- 6. Differential Shift Cable
- 7. Bracket
- $8.0 \sim 10 \text{ mm } (0 \sim 0.39 \text{ in.})$
- 9. Install the choke cable so that the setting height is  $0 \sim 10$  mm ( $0 \sim 0.39$  in.) from the top of the bracket.

# **MODEL APPLICATION**

,	Year	Model	Beginning Frame No.
2	2008	KRF750A8F	JKARFDA1□8B500001
	2008	KRF750B8F	JKARFDB1□8B500001

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



# 2008 KAWASAKI TERYX 750 4×4 Repair Service Manual KVF750 PDF

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