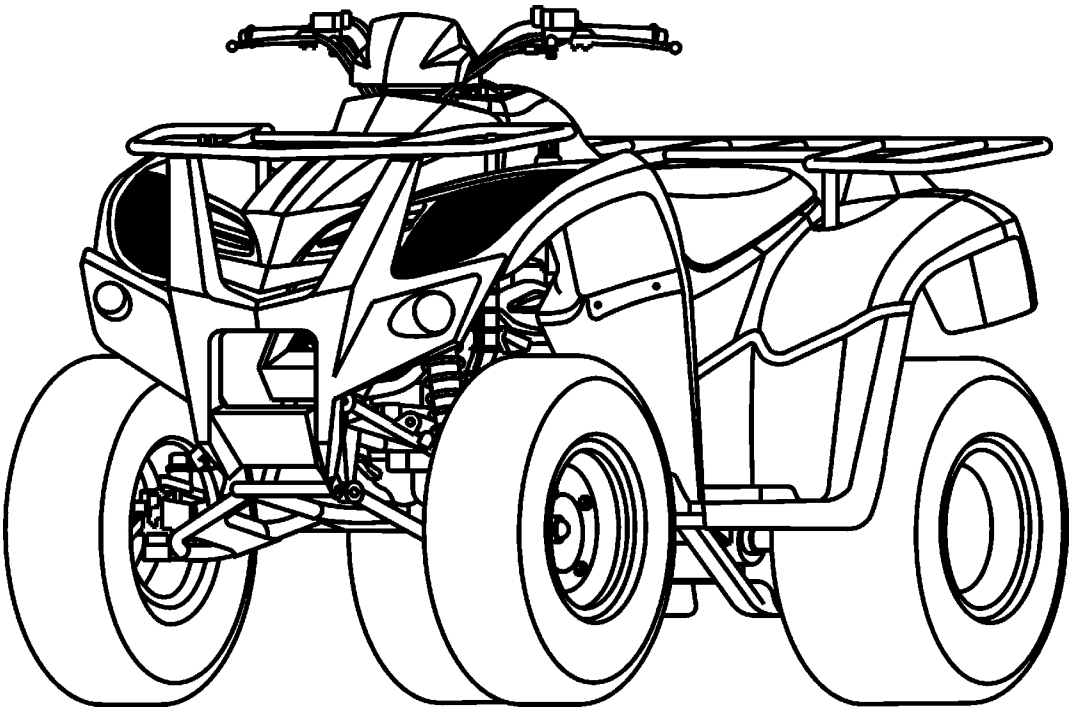
KYMCO
SERVICE MANUAL

MXU 150

MX’er 150/125



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PREFACE

This Service Manual describes the technical features and servicing procedures for the KYMCO ***ATV 150/125***.

Section 1 contains the precautions for all operations stated in this manual. Read them carefully before starting any operation.

Section 2 is the removal/installation procedures for the frame covers which are subject to higher removal/installation frequency during maintenance and servicing operations.

Section 3 describes the inspection/ adjustment procedures, safety rules and service information for each part, starting from periodic maintenance.

Sections 4 through 18 give instructions for disassembly, assembly and inspection of engine, chassis frame and electrical equipment.

Most sections start with an assembly or system illustration and troubleshooting for the section. The subsequent pages give detailed procedures for the section.

The information and contents included in this manual may be different from the ATV in case specifications are changed.

KYMCO reserves the right to make changes at any time without notice and without incurring any obligation.

KWANG YANG MOTOR CO., LTD.
OVERSEAS SALES DEPARTMENT
OVERSEAS SERVICE SECTION

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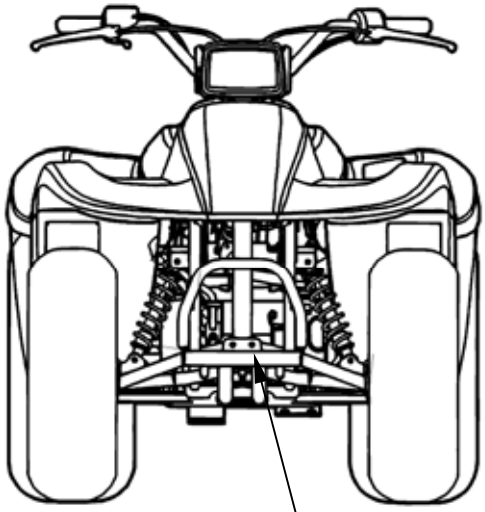
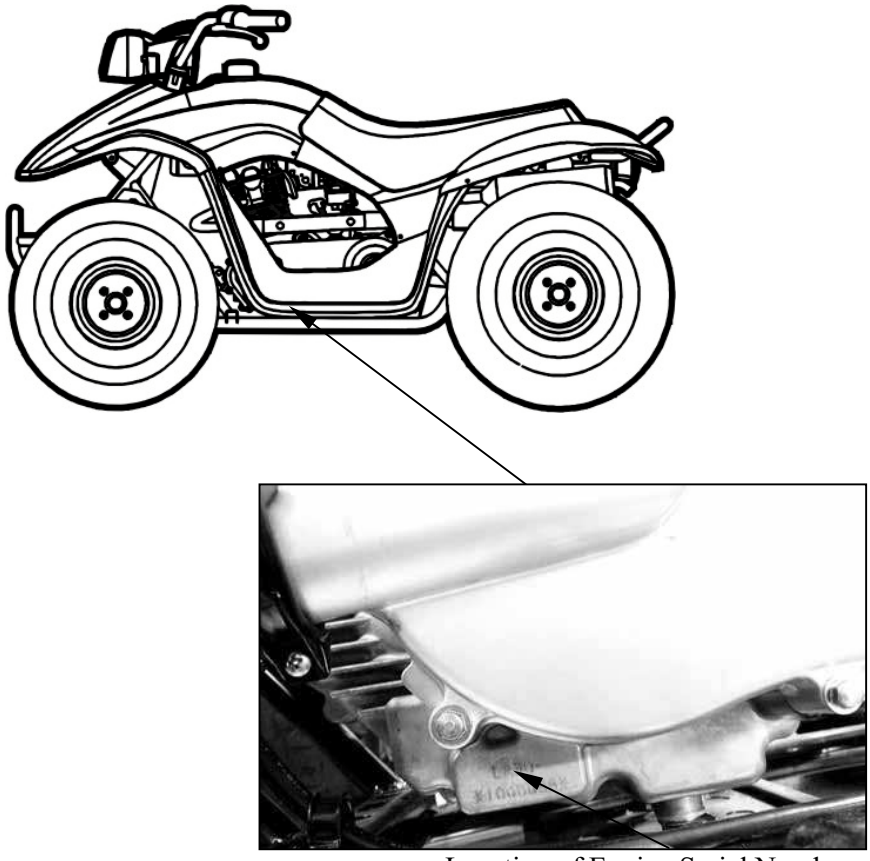
GENERAL INFORMATION

SERIAL NUMBER



Location of Frame Serial Number



Location of Engine Serial Number

1. GENERAL INFORMATION

SPECIFICATIONS (MX'er 150)

Model No.			LA30
ATV Name			MX'er 150
Overall length			1600 mm (64 in)
Overall width			980 mm (39.2 in)
Overall height			990 mm (39.6 in)
Wheel base			1120 mm (44.8 in)
Engine type			O.H.C.
Displacement			149.4 cc (9.1 cu-in)
Fuel Used			92# nonleaded gasoline
Dry weight		Front wheel	74 kg (162.8 lbs)
		Rear wheel	78 kg (171.6 lbs)
		Total	152 kg (334.4 lbs)
Gross weight		Front wheel	80 kg (176 lbs)
		Rear wheel	82 kg (180.4 lbs)
		Total	162 kg (356.4 lbs)
Tires		Front wheel	20*7-8
		Rear wheel	22*10-8
Ground clearance			130 mm (5.2 in)
Perform-ance	Breaking distance (m)(ANSI)		20.6 below
	Min. turning radius (m)		3
Engine	Starting system		Starting motor
	Type		Gasoline, 4-stroke
	Cylinder arrangement		Single cylinder
	Combustion chamber type		Semi-sphere
	Valve arrangement		O.H.C., chain drive
	Bore x stroke		62 x 49.5 mm (2.48 x1.98 in)
	Compression ratio		9.7:1
	Compression pressure (kg/cm^2)		1600 kPa (16 kg/cm^2, 227.2 psi)
	Intake	Open	5.5° BTDC
		Close	27.5° ABDC
	Exhaust	Open	36° BBDC
		Close	4° ATDC
	Valve clearance	Intake	0.06 mm (0.0024 in)
		Exhaust	0.06 mm (0.0024 in)
	Idle speed		1700 rpm
	Lubrication System	Lubrication type	Forced pressure & wet sump
		Oil pump type	Inner/outer rotor type
		Oil filter type	Full-flow filtration
		Oil capacity	1 liter (0.88 lmp qt, 1.06 US qt)
		Oil exchanging capacity	0.9 liter (0.79 lmp qt, 0.95 US qt)
	Cooling Type		Air cooling

Fuel System	Air cleaner type & No			Sponge
	Fuel capacity			8.1 liters (1.7 lmp gal, 2.11 Usgal)
	Carburetor	Type		PD
		Float lever		14.8 mm (0.592 in)
		Venturi dia.		ϕ25 mm (ϕ1 in)
		Throttle type		PISTON
Electrical Equipment	Ignition System	Type		CDI
		Ignition timing		15°BTDC/1700rpm
		Contact breaker		Non-contact point type
		Spark plug (NGK)		DE-8EA
		Spark plug gap		0.6～0.7 mm (0.024～0.028 in)
	Battery	Capacity		12V8AH
Power Drive System	Clutch type			CVT
	Primary reduction system			Helical gear/spur gear
	Secondary reduction system			Chain drive
	Primary reduction ratio			2.8-0.95
	Secondary reduction ratio			7.226
	Reverse ratio			26.902
Moving Device	FR/RR tire rolling circumference			1596/1756 mm (63.84/70.24 in)
	Tire pressure		Front	20 kPa (0.2 kg/cm^2, 2.84 psi)
			Rear	25 kPa (0.25 kg/cm^2, 3.55 psi
	Turning angle		Left	44°
			Right	44°
Brake system type			Rear	Disk brake / Drum brake
			Front	Drum brake
Damping Device	Suspension type		Front	Swing
			Rear	Swing arm
	Shock type		Front	Swing
			Rear	Swing arm
Frame type				Steel tube type

(MX'er 125)

Model No.			LA25
ATV Name			MX'er 125
Overall length			1685 mm (67.4 in)
Overall width			980 mm (39.2 in)
Overall height			990 mm (39.6 in)
Wheel base			1120 mm (44.8 in)
Engine type			O.H.C.
Displacement			124 cc (7.55 cu-in)
Fuel Used			92# nonleaded gasoline
Dry weight		Front wheel	74 kg (162.8 lbs)
		Rear wheel	78 kg (171.6 lbs)
		Total	152 kg (334.4 lbs)
Gross weight		Front wheel	80 kg (176 lbs)
		Rear wheel	82 kg (180.4 lbs)
		Total	162 kg (356.4 lbs)
Tires		Front wheel	20*7-8
		Rear wheel	22*10-8
Ground clearance			130 mm (5.2 in)
Perform-ance	Breaking distance (m)(ANSI)		20.6 below
	Min. turning radius (m)		2.5
Engine	Starting system		Starting motor
	Type		Gasoline, 4-stroke
	Cylinder arrangement		Single cylinder
	Combustion chamber type		Semi-sphere
	Valve arrangement		O.H.C., chain drive
	Bore x stroke		56.5 x 49.5 mm (2.26 x1.98 in)
	Compression ratio		9.2:1
	Compression pressure (kg/cm^2)		1400 kPa (14 kg/cm^2, 198.8 psi)
	Intake	Open	5.5° BTDC
		Close	27.5° ABDC
	Exhaust	Open	36° BBDC
		Close	4° ATDC
	Valve clearance	Intake	0.06 mm (0.0024 in)
		Exhaust	0.06 mm (0.0024 in)
	Idle speed		1700 rpm
	Lubrication System: Lubrication type		Forced pressure & wet sump
	Lubrication System: Oil pump type		Inner/outer rotor type
	Lubrication System: Oil filter type		Full-flow filtration
	Lubrication System: Oil capacity		1 liter (0.88 lmp qt, 1.06 US qt)
	Lubrication System: Oil exchanging capacity		0.9 liter (0.79 lmp qt, 0.95 US qt)
	Cooling Type		Air cooling

Fuel System	Air cleaner type & No		Sponge
	Fuel capacity		8.1 liters (1.7 lmp gal, 2.11 Usgal)
	Carburetor: Type		PD
	Carburetor: Float lever		14.8 mm (0.592 in)
	Carburetor: Venturi dia.		ϕ25 mm (ϕ1 in)
	Carburetor: Throttle type		PISTON
Electrical Equipment	Ignition System: Type		CDI
	Ignition System: Ignition timing		15°BTDC/1700rpm
	Ignition System: Contact breaker		Non-contact point type
	Ignition System: Spark plug (NGK)		DR-8EA
	Ignition System: Spark plug gap		0.6～0.7 mm (0.024～0.028 in)
	Battery	Capacity	12V8AH
Power Drive System	Clutch type		CVT
	Primary reduction system		Helical gear/spur gear
	Secondary reduction system		Chain drive
	Primary reduction ratio		2.8-0.95
	Secondary reduction ratio		7.226
	Reverse ratio		26.902
Moving Device	FR/RR tire rolling circumference		1596/1756 mm (63.84/70.24 in)
	Tire pressure	Front	20 kPa (0.2 kg/cm^2, 2.84 psi)
	Tire pressure	Rear	25 kPa (0.25 kg/cm^2, 3.55 psi
	Turning angle	Left	44°
	Turning angle	Right	44°
Brake system type		Rear	Disk brake / Drum brake
		Front	Drum brake
Damping Device	Suspension type	Front	Swing
	Suspension type	Rear	Swing arm
	Shock type	Front	Swing
	Shock type	Rear	Swing arm
Frame type			Steel tube type

1. GENERAL INFORMATION

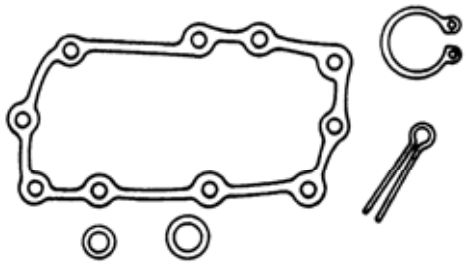
(MXU 150)

Model No.			LA30
ATV Name			MXU 150
Overall length			1775 mm (71 in)
Overall width			950 mm (38 in)
Overall height			1040 mm (41.6 in)
Wheel base			1115 mm (44.6 in)
Engine type			OHC
Displacement			149 cc (9.1 cu-in)
Fuel Used			92# nonleaded gasoline
Dry weight		Front wheel	87 kg (191.4 lbs)
		Rear wheel	88 kg (193.6 lbs)
		Total	175 kg (385 lbs)
Gross weight		Front wheel	92 kg (202.4 lbs)
		Rear wheel	93 kg (204.6 lbs)
		Total	185 kg (407 lbs)
Tires		Front wheel	21*7-10
		Rear wheel	22*10-10
Ground clearance			155 mm (6.2 in)
Perform-ance		Breaking distance (m)(ANSI)	20.6 below
		Min. turning radius (m)	3
Engine	Starting system		Starting motor
	Type		Gasoline, 4-stroke
	Cylinder arrangement		Single cylinder
	Combustion chamber type		Semi-sphere
	Valve arrangement		O.H.C., chain drive
	Bore x stroke		62 x 49.5 (2.48 x1.98 in)
	Compression ratio		9.7:1
	Compression pressure		1600 kPa (16 kg/cm^2, 227.2 psi)
	Intake	Open	5.5° BTDC
		Close	27.5° ABDC
	Exhaust	Open	36° BBDC
		Close	4° ATDC
	Valve clearance	Intake	0.06 mm (0.0024 in)
		Exhaust	0.06 mm (0.0024 in)
	Idle speed		1700 rpm
	Lubrication System	Lubrication type	Forced pressure & Wet sump
		Oil pump type	Inner/outer rotor type
		Oil filter type	Full-flow filtration
		Oil capacity	1 liter (0.88 lmp qt, 1.06 US qt)
		Oil exchanging capacity	0.9 liter (0.79 lmp qt, 0.95 US qt)
	Cooling Type		Air cooling

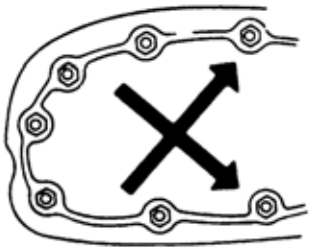
Fuel System	Air cleaner type & No			Sponge
	Fuel capacity			8.1 liters (1.7 lmp gal, 2.11 Usgal)
	Carburetor	Type		PD
		Piston dia.		14.8 mm (0.592 in)
		Venturi dia.(mm)		ϕ25 mm (ϕ1 in)
		Throttle type		PISTON
Electrical Equipment	Ignition System	Type		CDI
		Ignition timing		15°BTDC/1700rpm
		Contact breaker		Non-contact point type
		Spark plug (NGK)		DR-8EA
		Spark plug gap		0.6～0.7 mm (0.024～0.028 in)
	Battery	Capacity		12V8AH
Power Drive System	Clutch type			CVT
	Primary reduction system			Helical gear/spur gear
	Secondary reduction system			Chain drive
	Primary reduction ratio			2.8-0.95
	Secondary reduction ratio			7.226
	Reverse ratio			26.902
Moving Device	FR/RR tire rolling circumference			1675/1756 mm (67/70.24 in)
	Tire pressure		Front	28 Kpa (0.28 kg/cm^2, 3.976 psi)
			Rear	28 Kpa (0.28 kg/cm^2, 3.976 psi)
	Turning angle		Left	40°
			Right	40°
Brake system type			Rear	Disk brake / Drum brake
			Front	Drum brake
Damping Device	Suspension type		Front	Swing
			Rear	Swing arm
	Shock type		Front	Swing
			Rear	Swing arm
Frame type				Steel tube pipe

SERVICE PRECAUTIONS

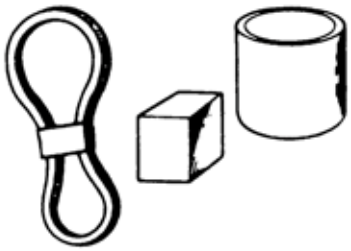
■ Make sure to install new gaskets, O-rings, circlips, cotter pins, etc. when reassembling.



■ When tightening bolts or nuts, begin with larger-diameter to smaller ones at several times, and tighten to the specified torque diagonally.

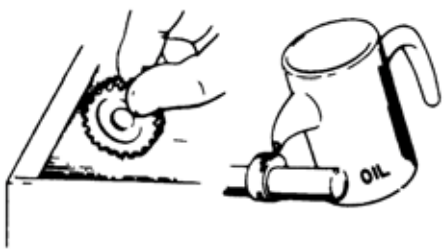


■ Use genuine parts and lubricants.

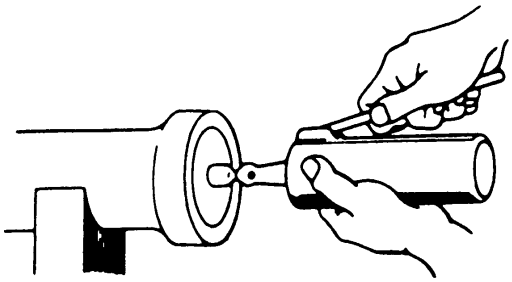


■ When servicing the motorcycle, be sure to use special tools for removal and installation.

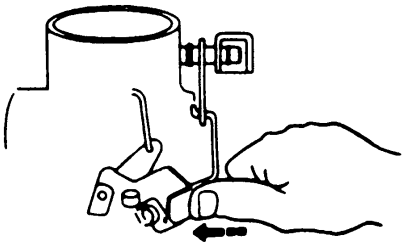
■ After disassembly, clean removed parts. Lubricate sliding surfaces with engine oil before reassembly.



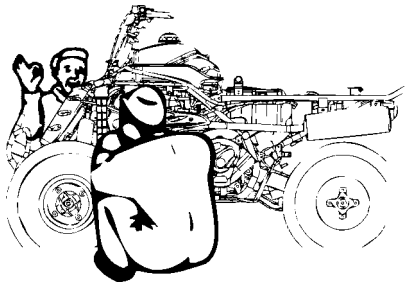
■ Apply or add designated greases and lubricants to the specified lubrication points.



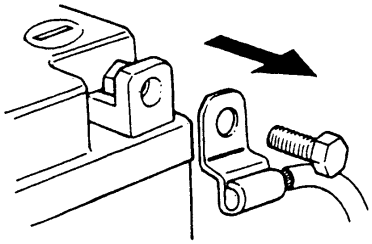
■ After reassembly, check all parts for proper tightening and operation.



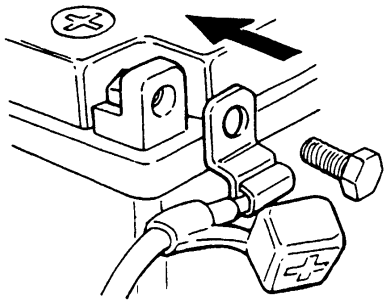
■ When two persons work together, pay attention to the mutual working safety.



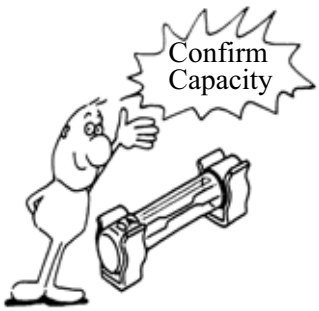
■ Disconnect the battery negative (-) terminal before operation.
■ When using a spanner or other tools, make sure not to damage the motorcycle surface.



■ After operation, check all connecting points, fasteners, and lines for proper connection and installation.
■ When connecting the battery, the positive (+) terminal must be connected first.
■ After connection, apply grease to the battery terminals.
■ Terminal caps shall be installed securely.

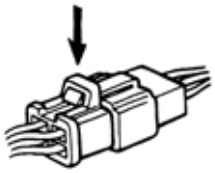


■ If the fuse is burned out, find the cause and repair it. Replace it with a new one according to the specified capacity.



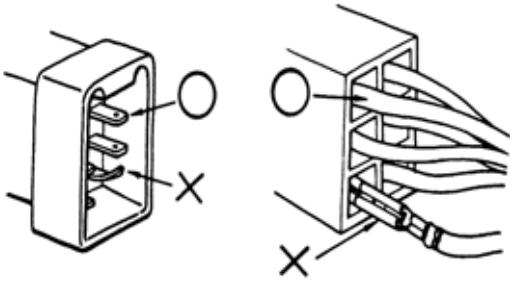
■ After operation, terminal caps shall be installed securely.

■ When taking out the connector, the lock on the connector shall be released before operation.

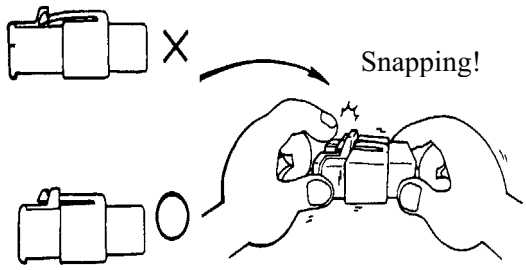


■ Hold the connector body when connecting or disconnecting it.
■ Do not pull the connector wire.

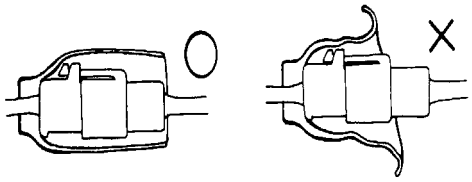
■ Check if any connector terminal is bending, protruding or loose.



- The connector shall be inserted completely.
- If the double connector has a lock, lock it at the correct position.
- Check if there is any loose wire.

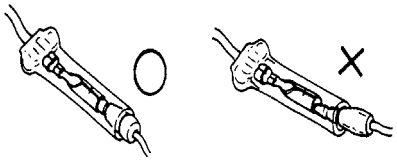


- Before connecting a terminal, check for damaged terminal cover or loose negative terminal.

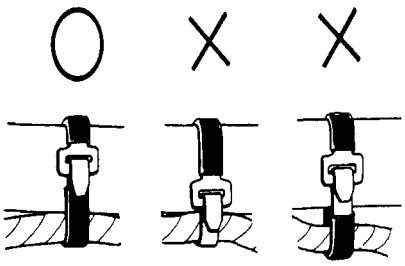


- Check the double connector cover for proper coverage and installation.

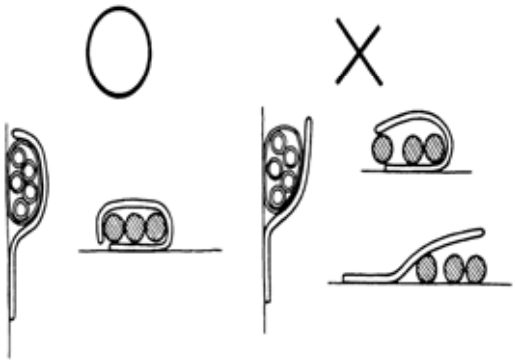
- Insert the terminal completely.
- Check the terminal cover for proper coverage.
- Do not make the terminal cover opening face up.



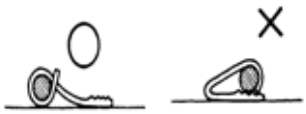
- Secure wire harnesses to the frame with their respective wire bands at the designated locations.
  Tighten the bands so that only the insulated surfaces contact the wire harnesses.



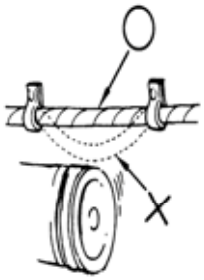
■ After clamping, check each wire to make sure it is secure.



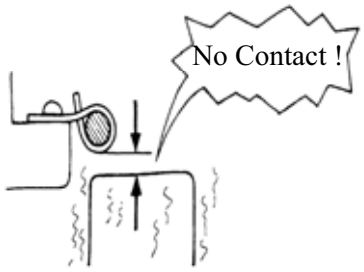
■ Do not squeeze wires against the weld or its clamp.



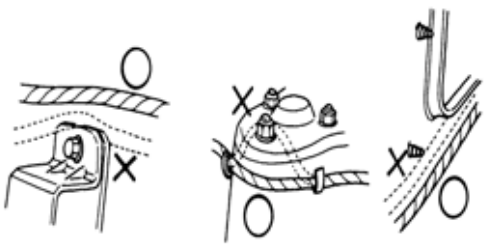
■ After clamping, check each harness to make sure that it is not interfering with any moving or sliding parts.



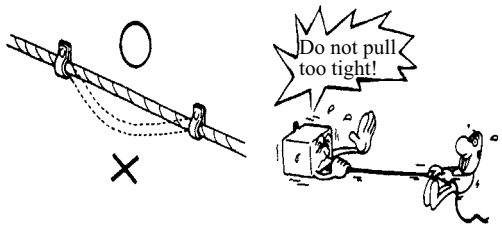
■ When fixing the wire harnesses, do not make it contact the parts which will generate high heat.



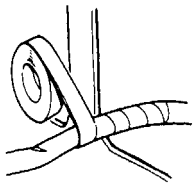
■ Route wire harnesses to avoid sharp edges or corners. Avoid the projected ends of bolts and screws.
■ Route wire harnesses passing through the side of bolts and screws. Avoid the projected ends of bolts and screws.



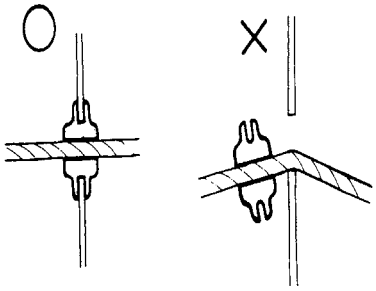
■ Route harnesses so they are neither pulled tight nor have excessive slack.



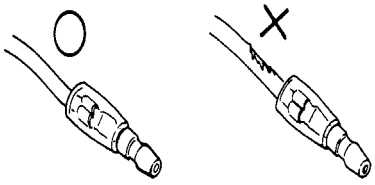
■ Protect wires and harnesses with electrical tape or tube if they contact a sharp edge or corner.



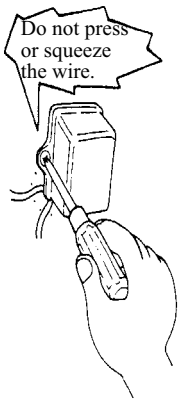
■ When rubber protecting cover is used to protect the wire harnesses, it shall be installed securely.



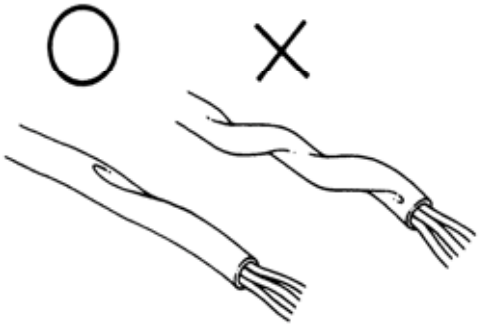
■ Do not break the sheath of wire.
■ If a wire or harness is with a broken sheath, repair by wrapping it with protective tape or replace it.



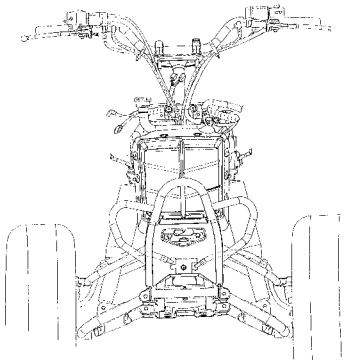
■ When installing other parts, do not press or squeeze the wires.



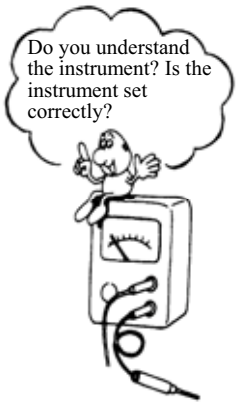
■ After routing, check that the wire harnesses are not twisted or kinked.



■ Wire harnesses routed along with handlebar should not be pulled tight, have excessive slack or interfere with adjacent or surrounding parts in all steering positions.



■ When a testing device is used, make sure to understand the operating methods thoroughly and operate according to the operating instructions.



■ Be careful not to drop any parts.

■ When rust is found on a terminal, remove the rust with sand paper or equivalent before connecting.

■ Symbols:
The following symbols represent the servicing methods and cautions included in this service manual.


Engine Oil

: Apply engine oil to the specified points. (Use designated engine oil for lubrication.)


Grease

: Apply grease for lubrication.


Gear Oil

: Transmission Gear Oil (90#)

: Note

: Warning

TORQUE VALUES

STANDARD TORQUE VALUES

Item	Torque kgf-m (N-m, lbf-ft)	Item	Torque kgf-m (N-m, lbf-ft)
5mm bolt and nut	0.5 (5, 3.6)	4mm screw	0.3 (3, 2.2)
6mm bolt and nut	1 (10, 7.2)	5mm screw	0.4 (4, 2.9)
8mm bolt and nut	2.2 (22, 16)	6mm screw, SH bolt	0.9 (9, 6.5)
10mm bolt and nut	3.5 (35, 25)	6mm flange bolt and nut	1.2 (12, 9)
12mm bolt and nut	5.5 (55, 40)	8mm flange bolt and nut	2.7 (27, 20)
14mm bolt and nut	7 (70, 50)	10mm flange bolt and nut	4 (40, 29)

Torque specifications listed below are for important fasteners.

ENGINE

Item	Q'ty	Thread dia. (mm)	Torque kgf-m (N-m, lbf-ft)	Remarks
Stud bolt	4	8	0.9 (9, 6.5)	
Oil filter screen cap	1	30	1.5 (15, 11)	
Seat ball stopper bolt	1	14	4.8 (48, 35)	
L cover	8	6	1.2 (12, 8.6)	
Cam holder	4	8	2 (20, 14)	Apply oil
Tappet ADJ nut	2	6	0.9 (9, 6.5)	Apply oil
Pivot tensioner	1	8	1 (10, 7)	
Lifter tensioner	2	6	1.2 (12, 8.6)	
Lifter tensioner	1	6	0.4 (4, 2.9)	
Right crankcase bolt	9	6	1 (10, 7)	
Driver face	1	12	6 (60, 43)	Apply oil
Clutch outer	1	12	5.5 (55, 40)	
Balancer shaft nut	1	16	4.5 (45, 32)	Left threaded
Start clutch nut	1	22	9.5 (95, 68)	Apply oil, Left threaded
ACG flywheel	1	14	5.5 (55, 40)	
Spark plug	1	8	1.5 (15, 11)	
Drain bolt mission	1	8	1 (10, 7)	
Drain plug	1	12	2.5 (25, 18)	
Motor srart	2	6	1 (10, 7)	
Oil pump	2	6	1 (10, 7)	
Oil pump sprocket	2	6	1 (10, 7)	
Head CYL bolt	2	6	1 (10, 7)	
Drive plate nut	1	28	5.5 (55, 40)	
Stator	4	5	1 (10, 7)	

ENGINE (Cont'd)

Item	Q'ty	Thread dia. (mm)	Torque kgf-m (N-m, lbf-ft)	Remarks
R cover	9	6	1 (10, 7)	
Head cover	4	6	1 (10, 7)	
Cap R cover	1	6	1 (10, 7)	
Guide star change handle	3	6	1 (10, 7)	
Sprocket drive plate	2	6	1 (10, 7)	
Carburetor	2	6	1 (10, 7)	
Transmission oil check bolt	1	10	1.2 (12, 9)	

FRAME

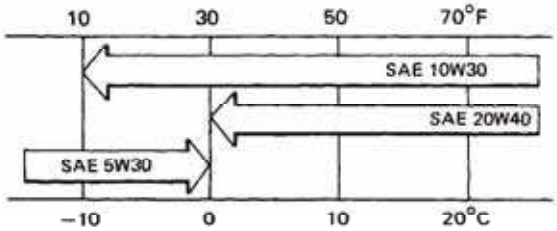
Item	Q'ty	Thread dia. (mm)	Torque kgf-m (N-m, lbf-ft)	Remarks
Steering stem nut	1	14	7 (70, 50)	
Swing arm nut	4	10	4.5 (45, 32)	
Rear wheel nut	2	14	7 (70, 50)	
Front wheel nut	2	14	7 (70, 50)	
Rear shock absorber upper mount bolt	1	10	4 (40, 29)	
Front shock absorber upper mount bolt	2	10	4 (40, 29)	
Front shock absorber lower mount bolt	2	10	4 (40, 29)	
Rear fork axle	1	14	7 (70, 50)	
Rear hub nut	4	12	7 (70, 50)	
Rear wheel shaft nut	2	32	12 (120, 86)	
Rear engine bracket up bolt	1	10	4 (40, 29)	
Rear engine bracket bolt	1	10	4 (40, 29)	
Engine hanger bracket bolt	1	10	4 (40, 29)	
Exhaust muffler lock bolt	2	8	3.5 (35, 25)	

SPECIAL TOOLS

Tool Name	Tool No.	Remarks
Flywheel puller	E003	Flywheel removal
Lock nut wrench	E009	Start clutch nut removal/installation
Lock nut wrench	E010	Balancer gear nut removal/installation
Valve adjuster	E012	Valve clearance adjustment
Valve spring compressor	E040	Cylinder head disassembly/assembly
Oil seal and bearing install	E014	
Universal holder	E017	Clutch outer nut removal/installation
Flywheel holder	E021	Flywheel nut removal/installation
Clutch spring compressor	E034	Driven pulley clutch removal/installation
Bearing puller	E037	
Nut wrench	F010	Rear axle nut removal/installation

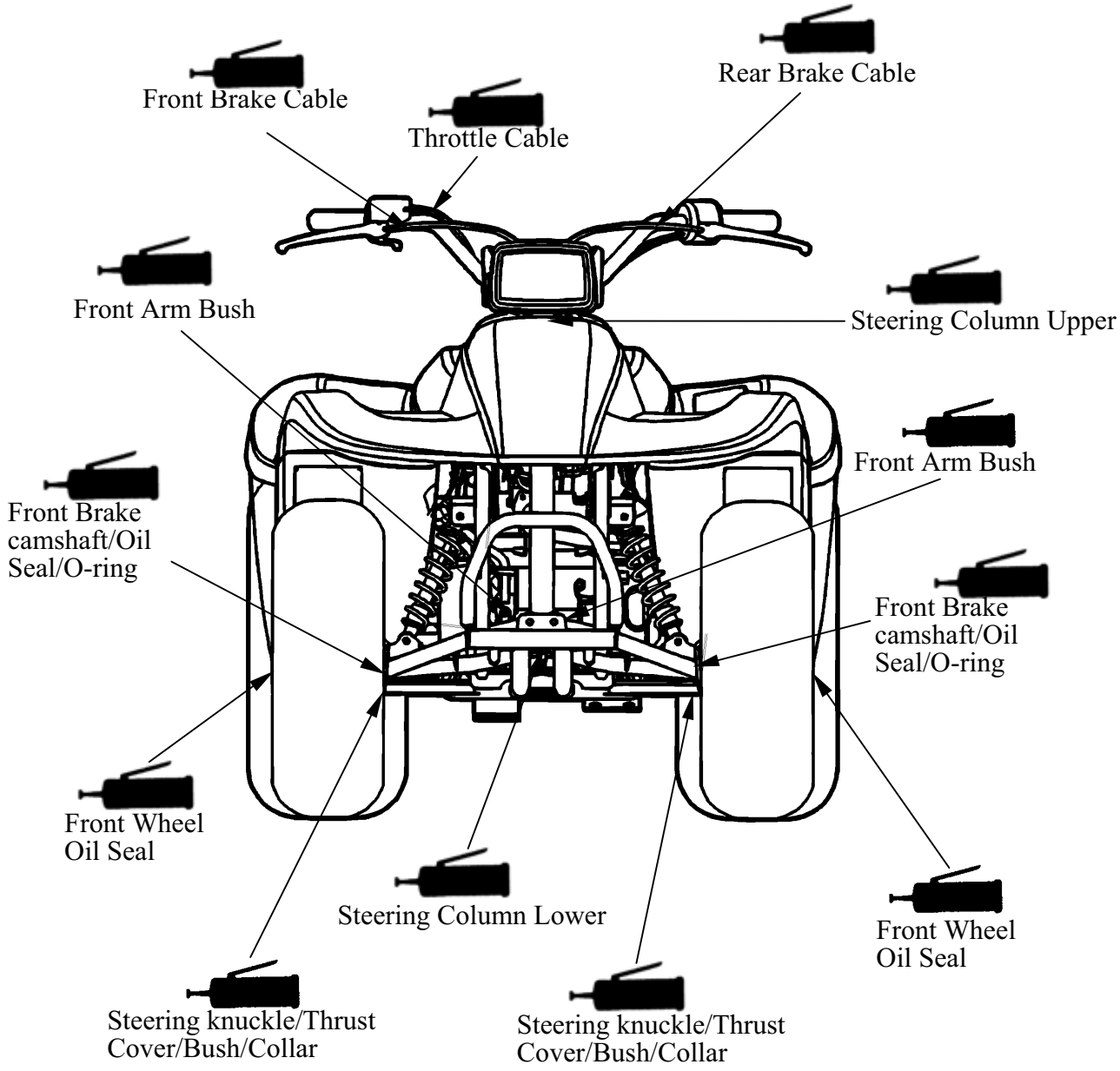
LUBRICATION POINTS

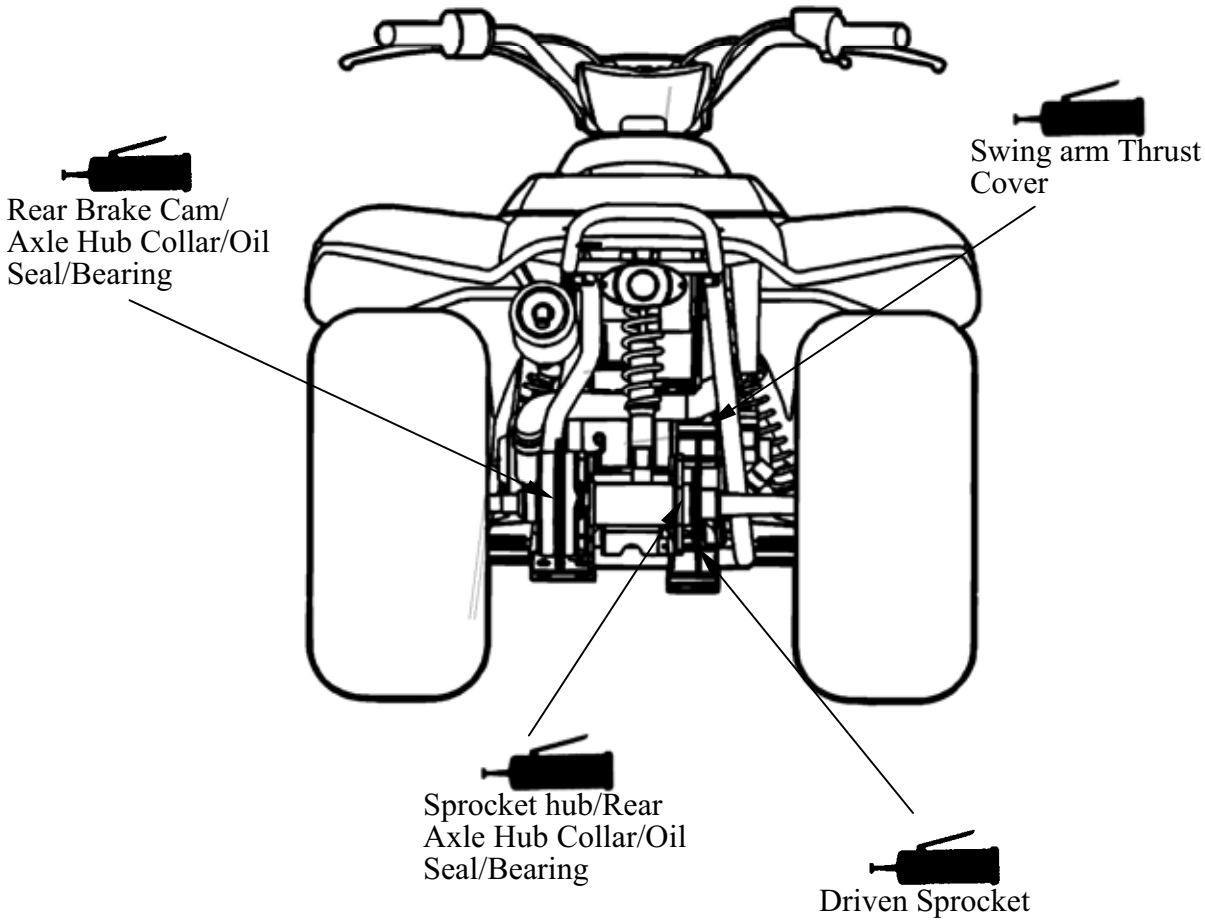
ENGINE

Lubrication Points	Lubricant
Valve guide/valve stem movable part Cam lobes Valve rocker arm friction surface Cam chain Cylinder lock bolt and nut Piston surroundings and piston ring grooves Piston pin surroundings Cylinder inside wall Connecting rod/piston pin hole Connecting rod big end Crankshaft right side oil seal Crankshaft one-way clutch movable part Oil pump drive chain Balance gear A.C. generator Starter one-way clutch Bearing movable part O-ring face Oil seal lip	•Genuine KYMCO Engine Oil (SAE15W-40) •API SG Engine Oil 
Transmission gear and movable parts	Gear oil: SAE90#

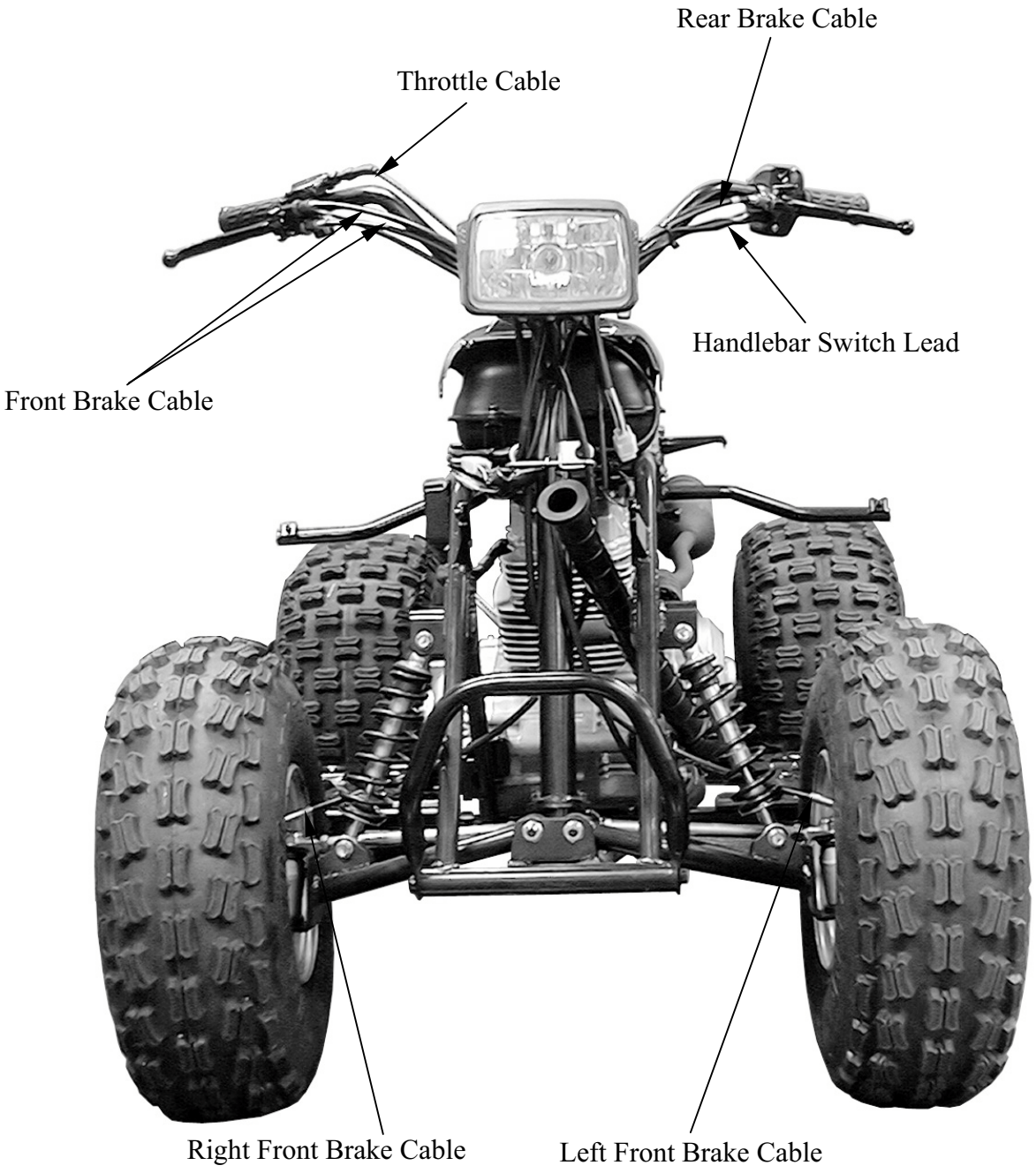
FRAME

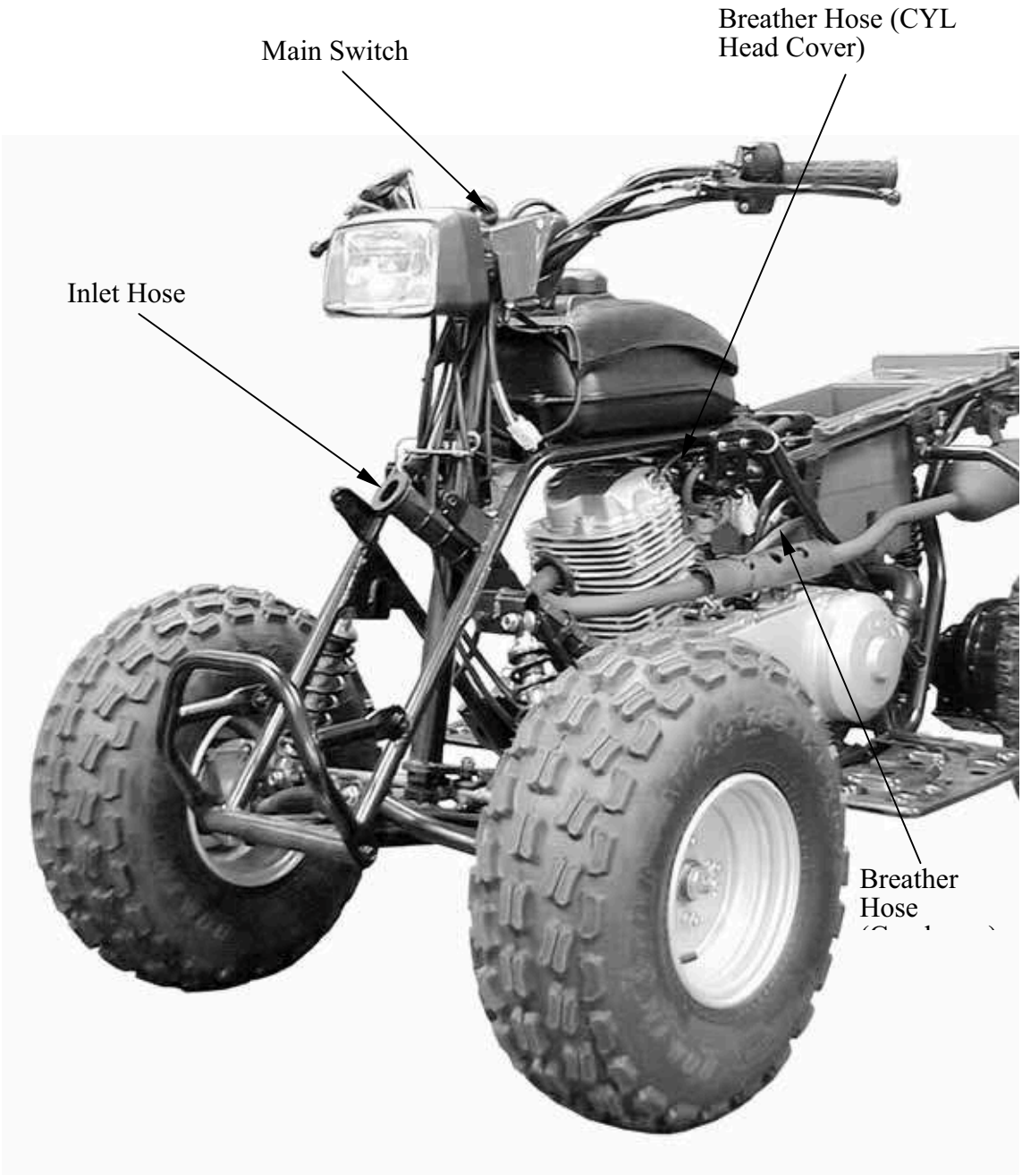
The following is the lubrication points for the frame.
Use general purpose grease for parts not listed.
Apply clean engine oil or grease to cables and movable parts not specified. This will avoid abnormal noise and rise the durability of the motorcycle.

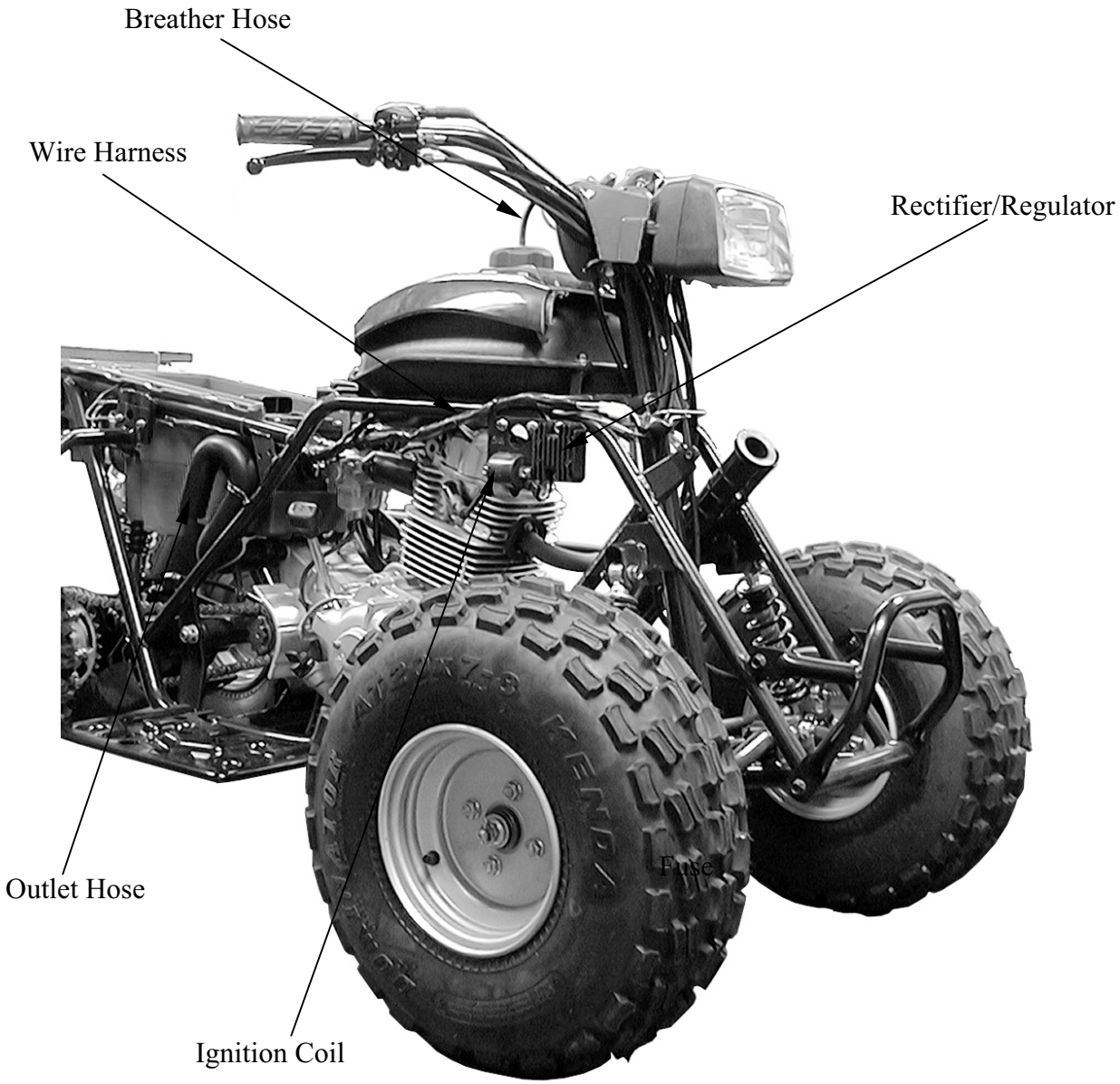


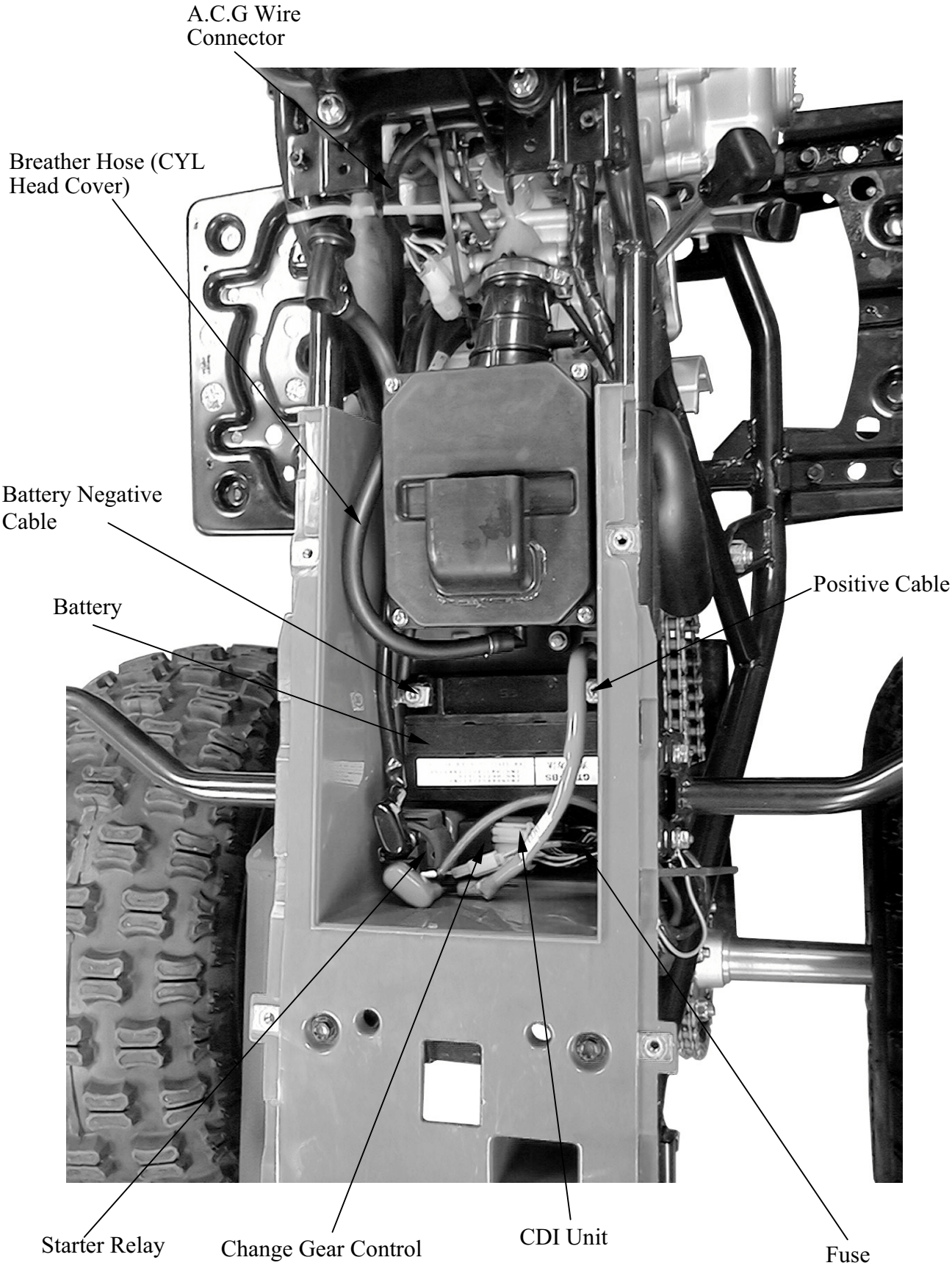

Rear Brake Cam/
Axle Hub Collar/Oil
Seal/Bearing
Swing arm Thrust
Cover
Sprocket hub/Rear
Axle Hub Collar/Oil
Seal/Bearing
Driven Sprocket

CABLE & HARNESS ROUTING (MX'er 150/125)

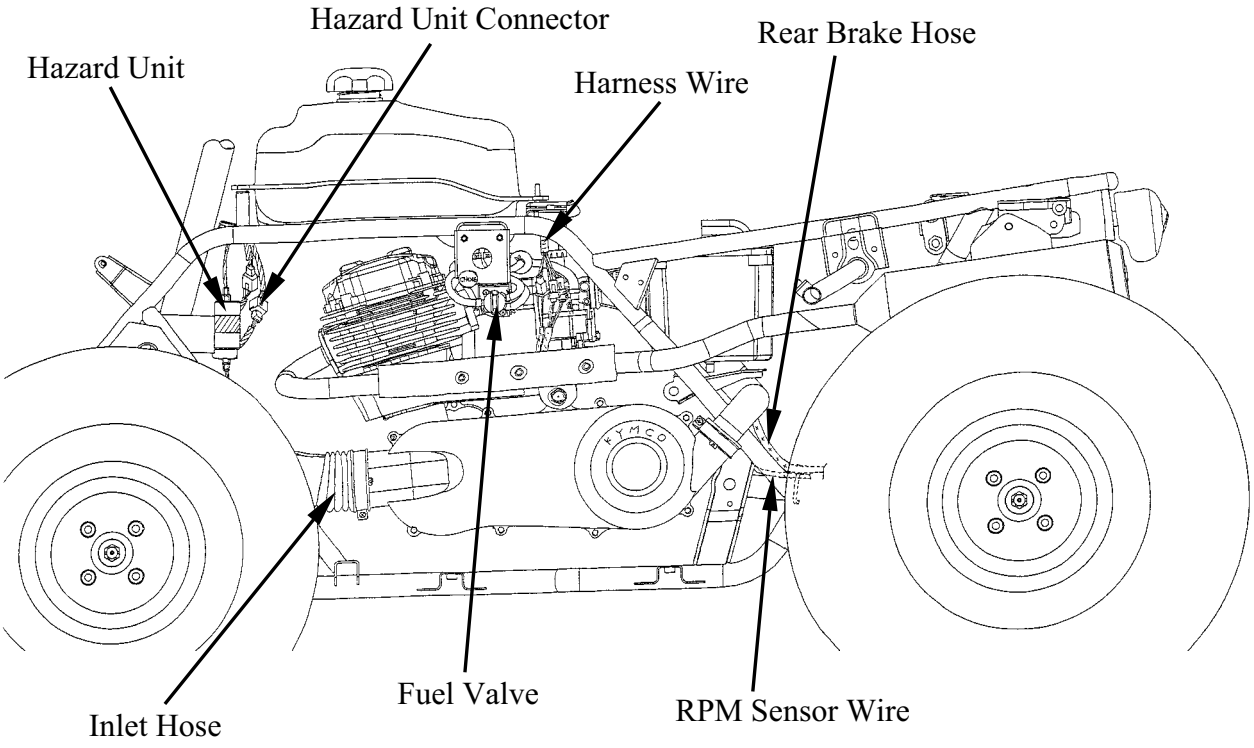


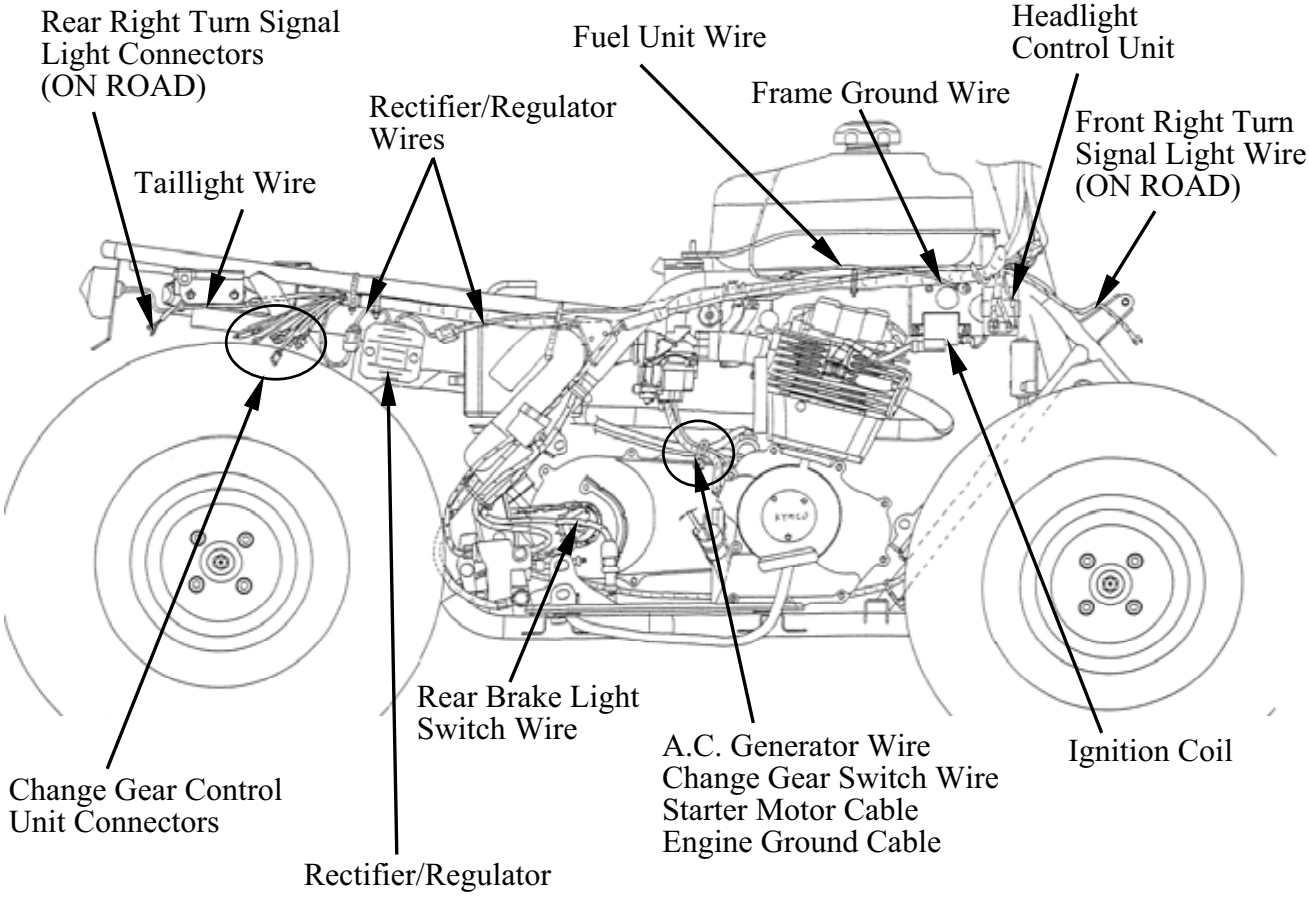

Main Switch
Breather Hose (CYL Head Cover)
Inlet Hose
Breather Hose

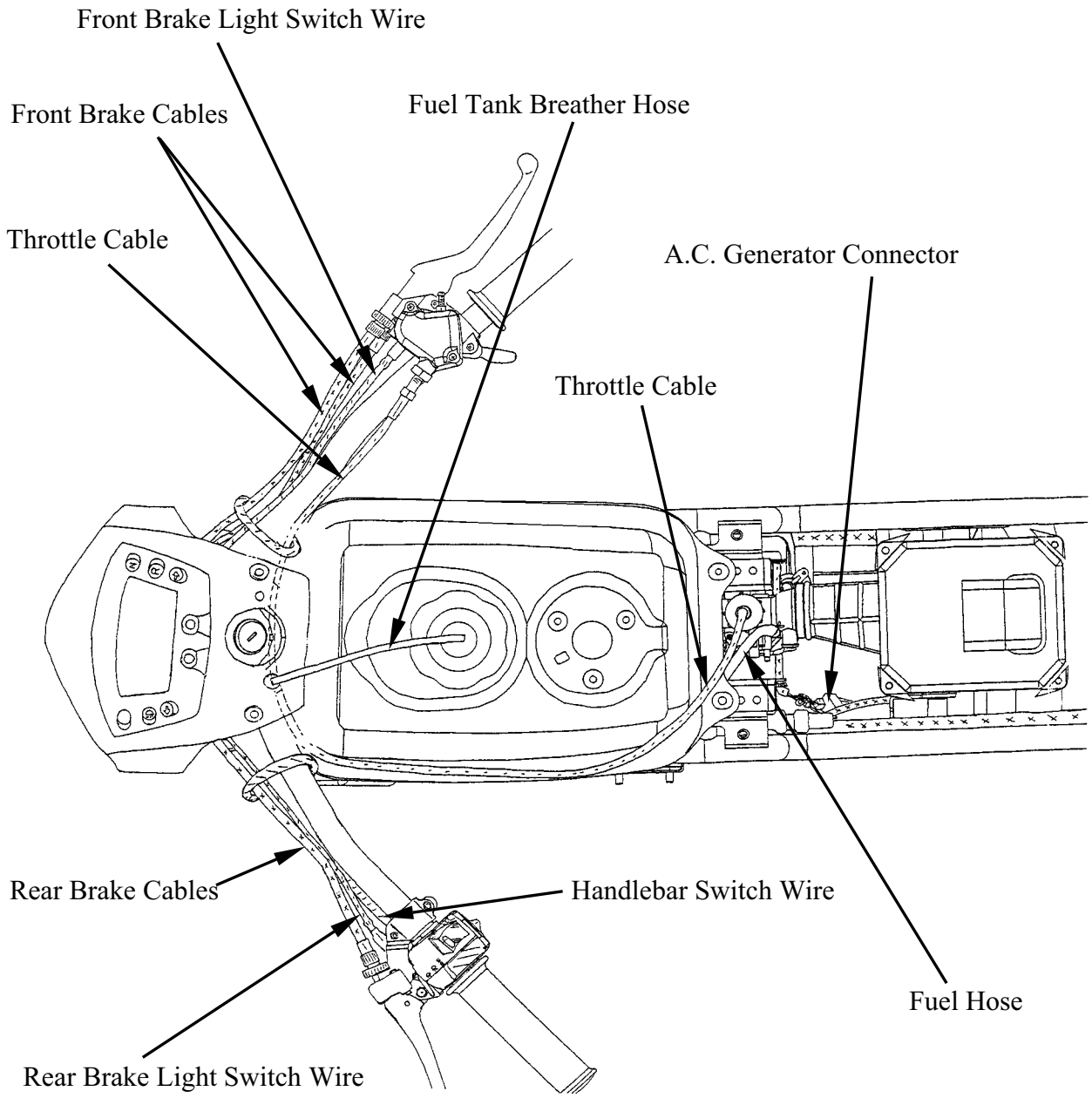

Breather Hose
Wire Harness
Rectifier/Regulator
Outlet Hose
Fuse
Ignition Coil

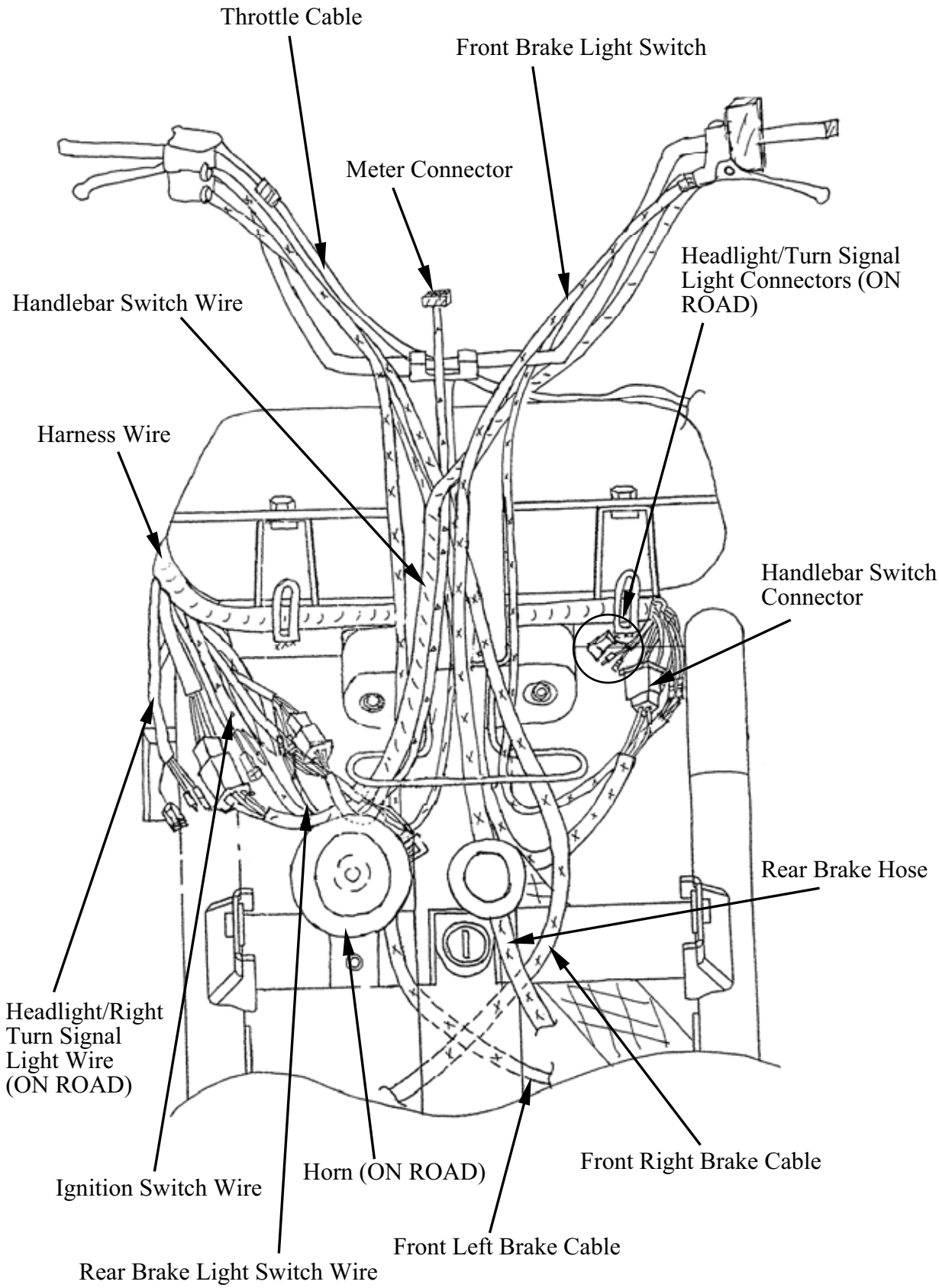

A.C.G Wire Connector
Breather Hose (CYL Head Cover)
Battery Negative Cable
Positive Cable
Battery
Starter Relay
Change Gear Control
CDI Unit
Fuse

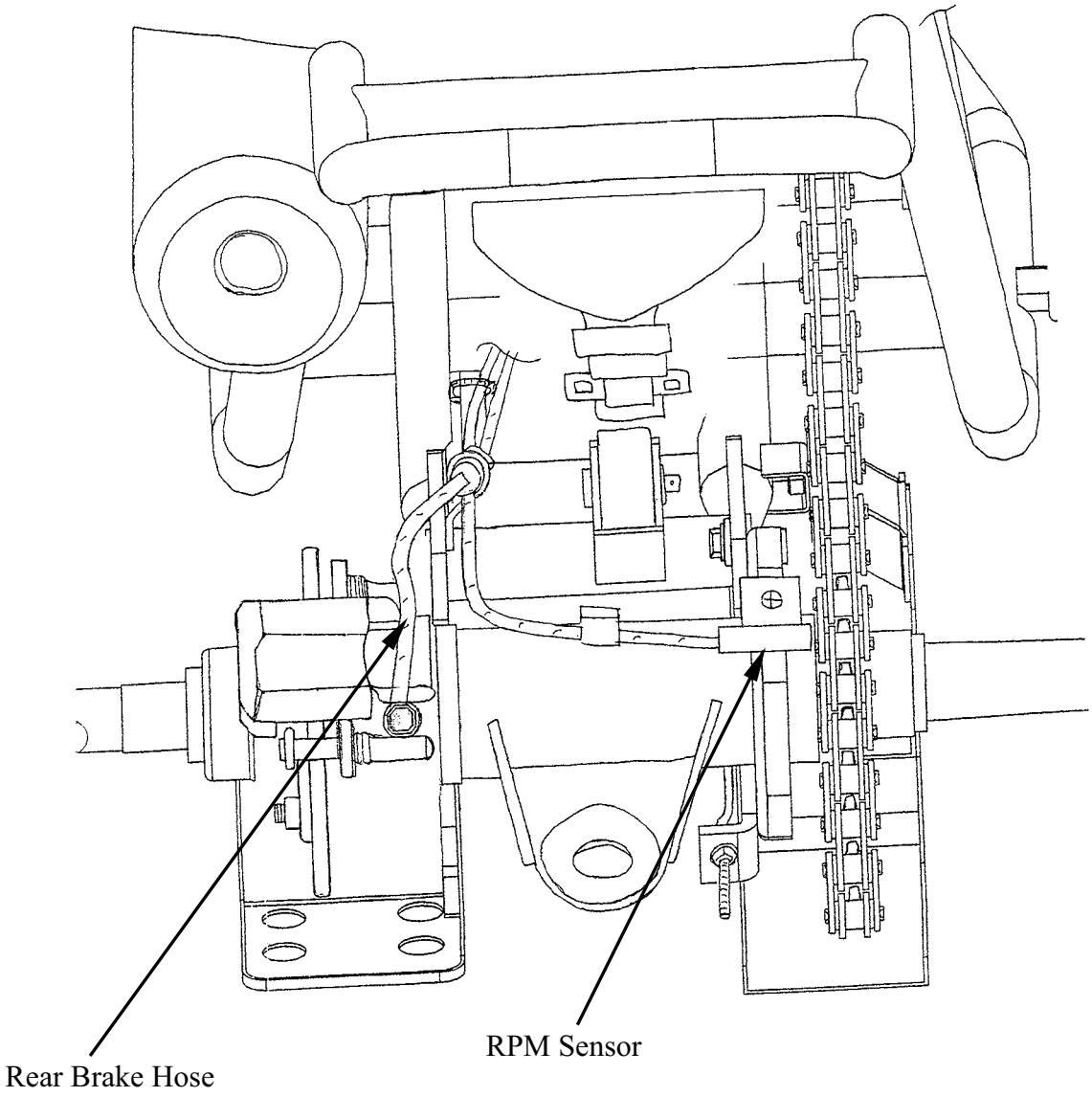
CABLE & HARNESS ROUTING (MXU 150)

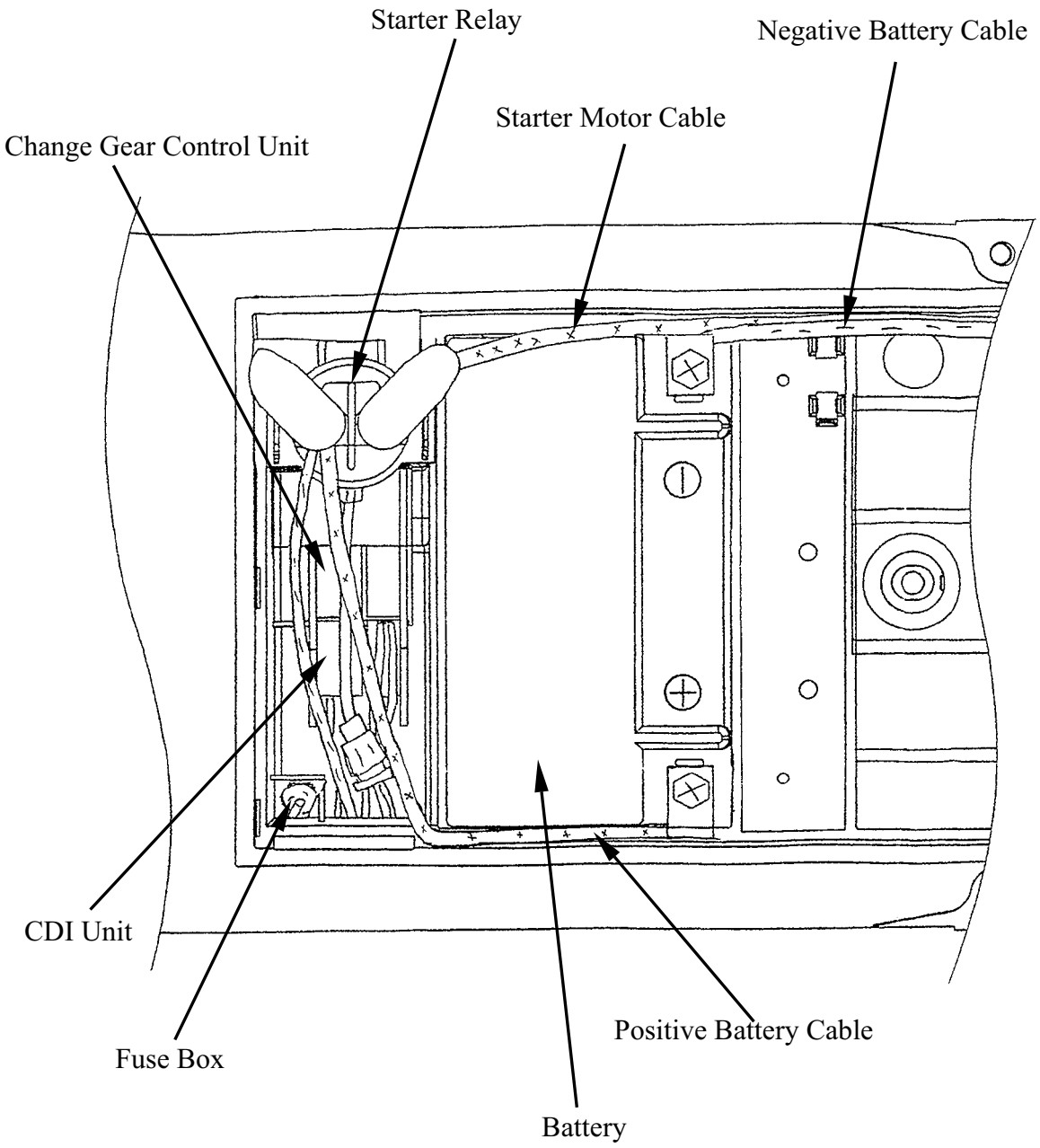




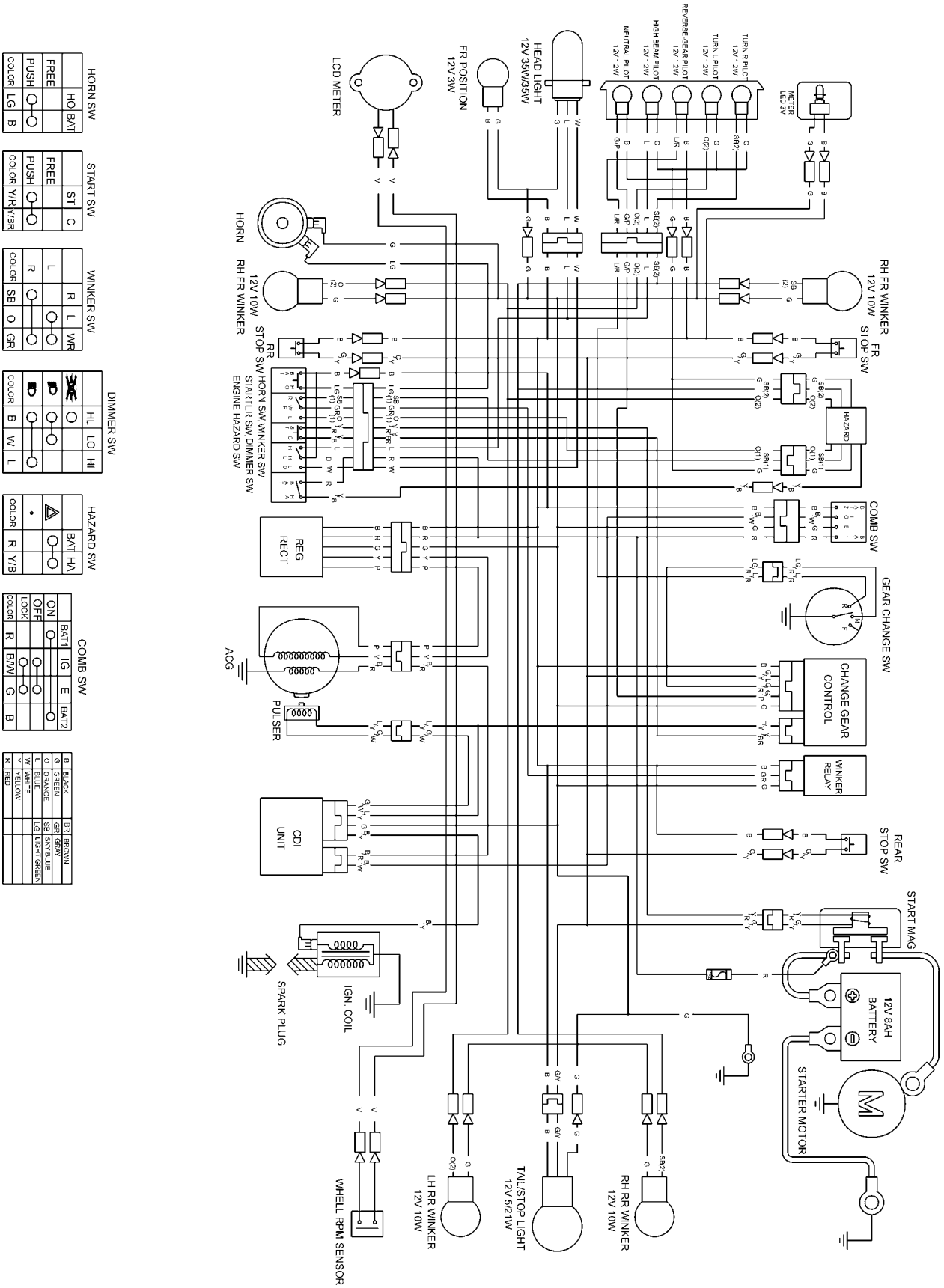

Front Brake Light Switch Wire
Front Brake Cables
Fuel Tank Breather Hose
Throttle Cable
A.C. Generator Connector
Throttle Cable
Rear Brake Cables
Handlebar Switch Wire
Fuel Hose
Rear Brake Light Switch Wire


Throttle Cable
Front Brake Light Switch
Meter Connector
Headlight/Turn Signal Light Connectors (ON ROAD)
Handlebar Switch Wire
Harness Wire
Handlebar Switch Connector
Rear Brake Hose
Headlight/Right Turn Signal Light Wire (ON ROAD)
Ignition Switch Wire
Horn (ON ROAD)
Front Right Brake Cable
Front Left Brake Cable
Rear Brake Light Switch Wire

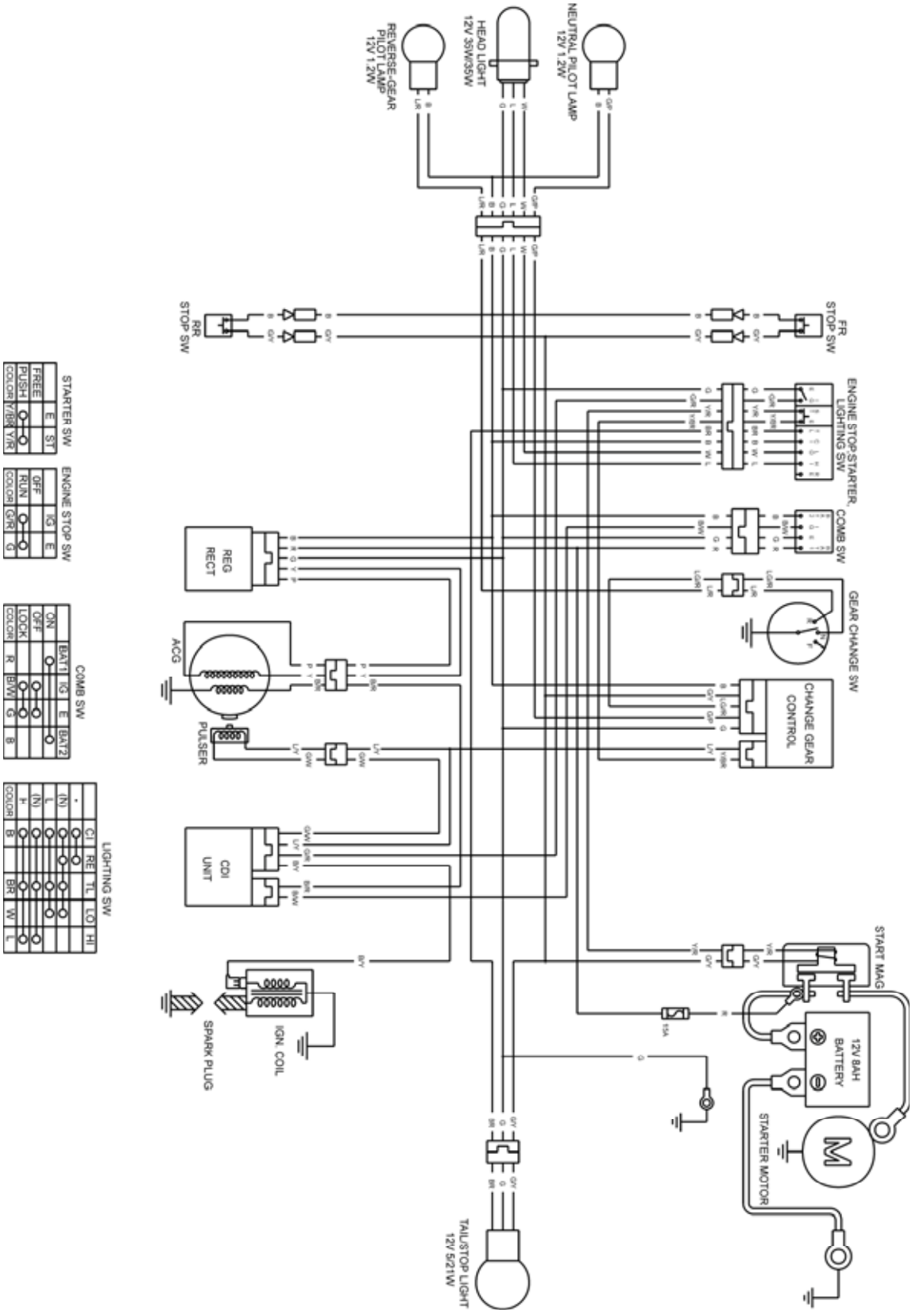

RPM Sensor
Rear Brake Hose


Starter Relay
Negative Battery Cable
Starter Motor Cable
Change Gear Control Unit
CDI Unit
Fuse Box
Positive Battery Cable
Battery

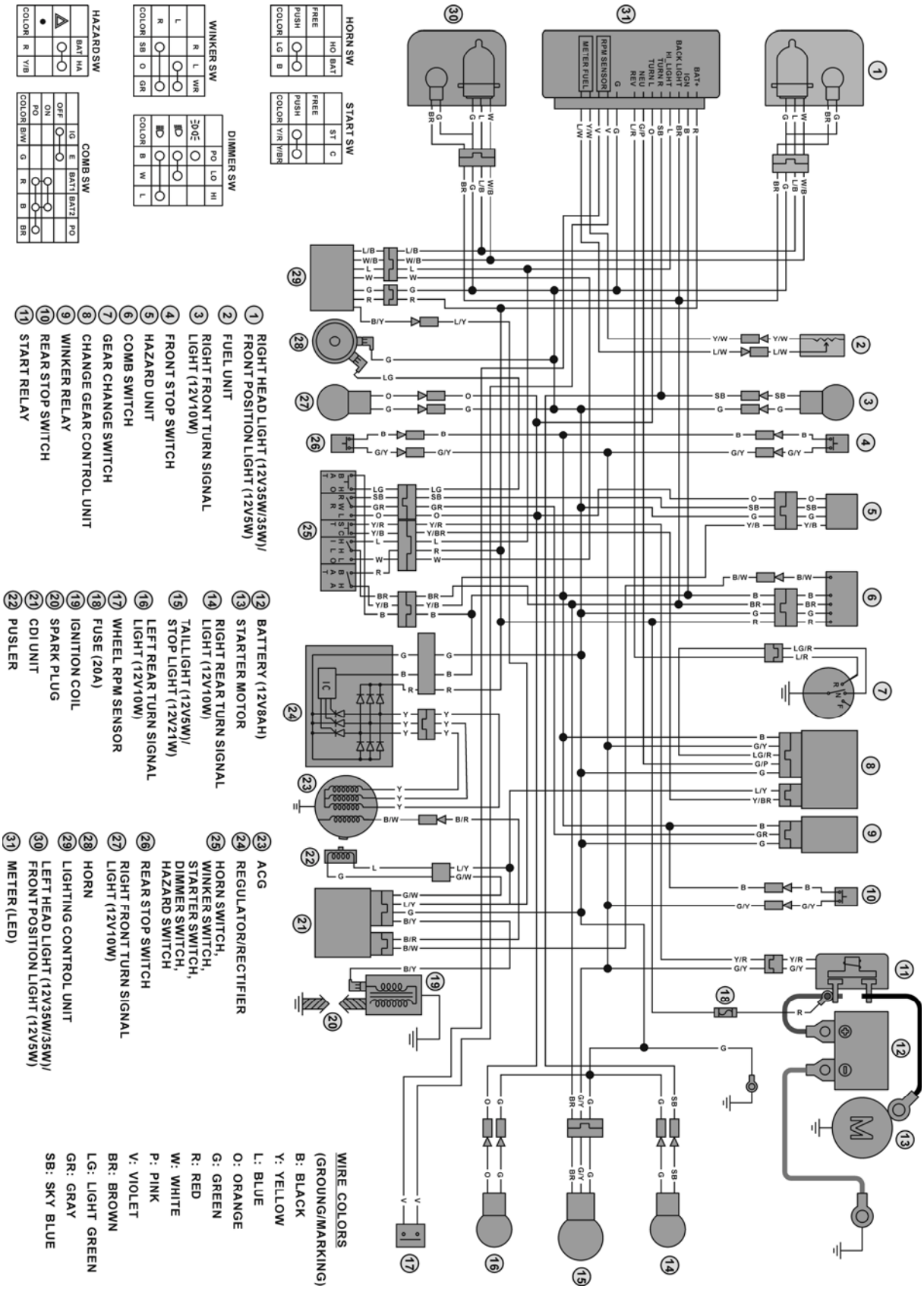
WIRING DIAGRAM (MX'er 150/125 ON ROAD)



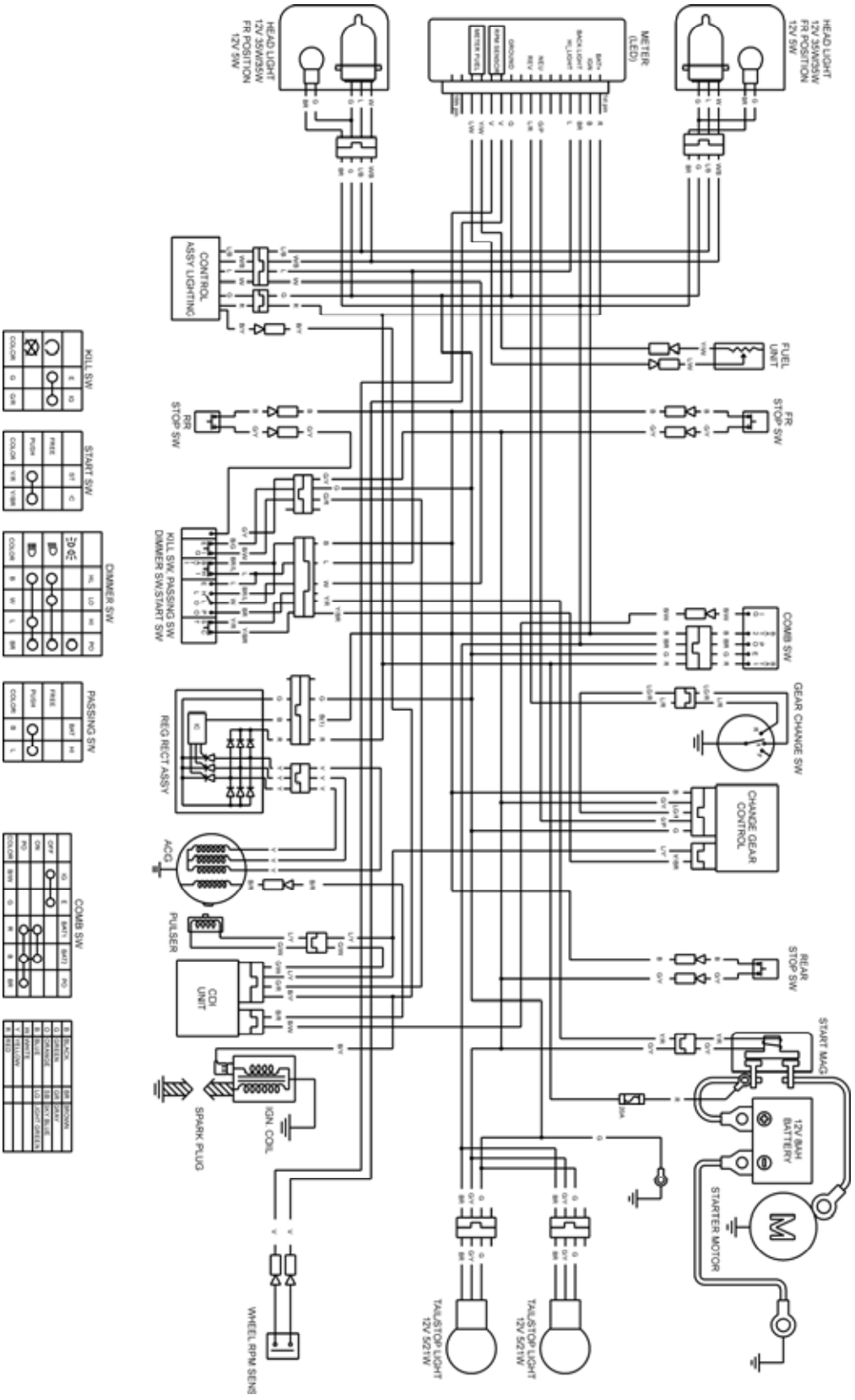
(MX'er 150/125 OFF ROAD)



(MXU 150 ON ROAD)

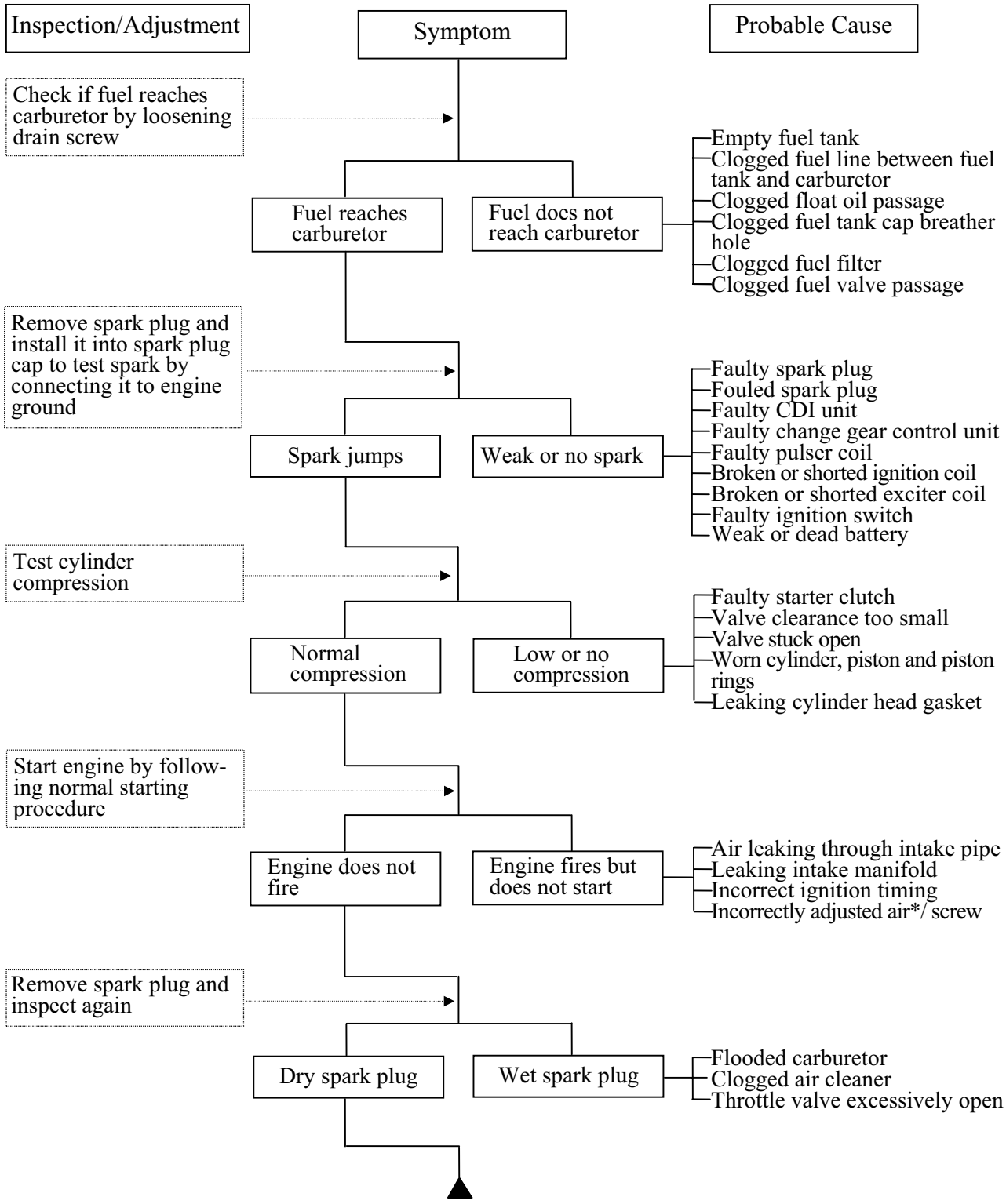


(MXU 150 OFF ROAD)

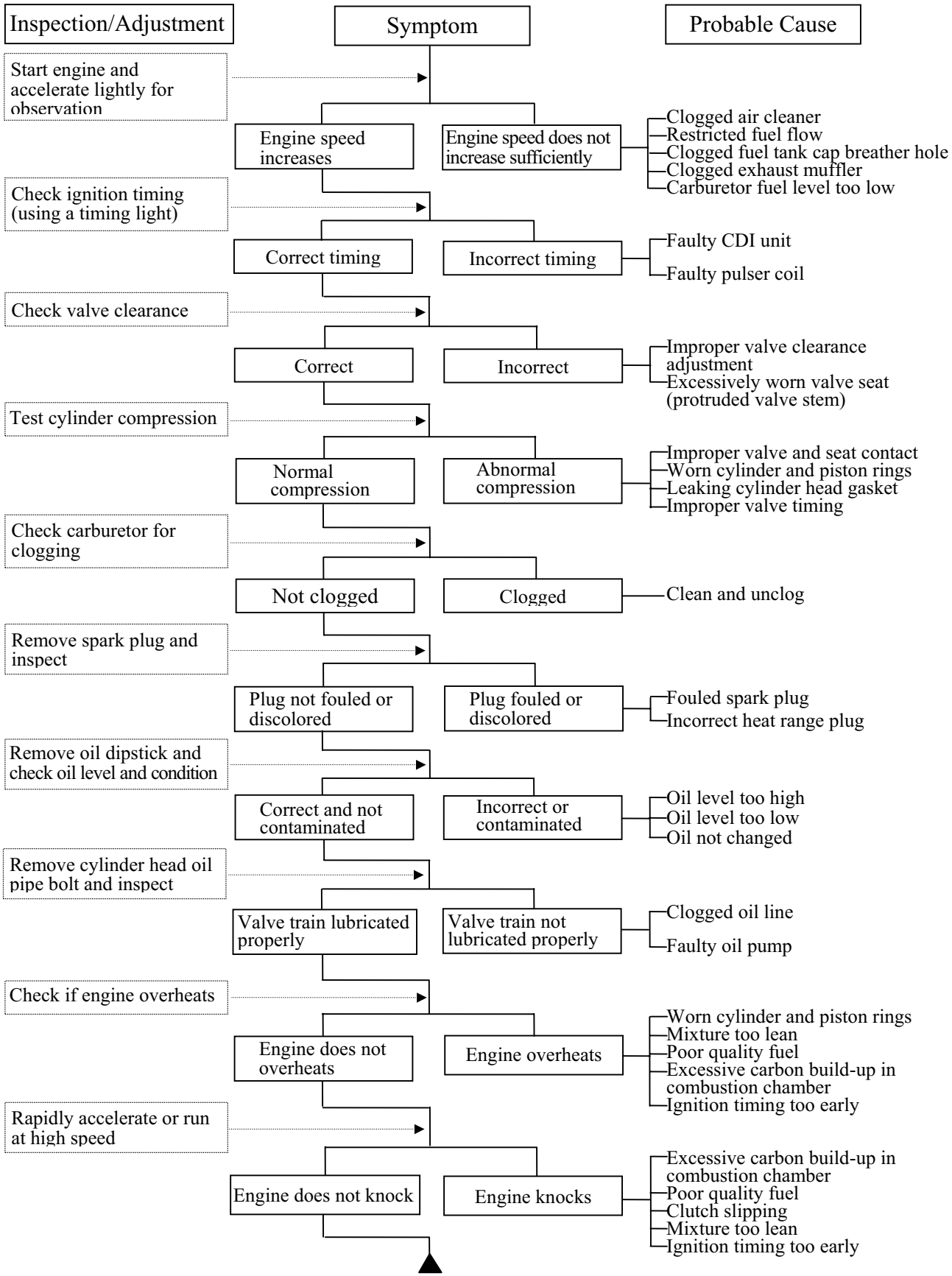


TROUBLESHOOTING

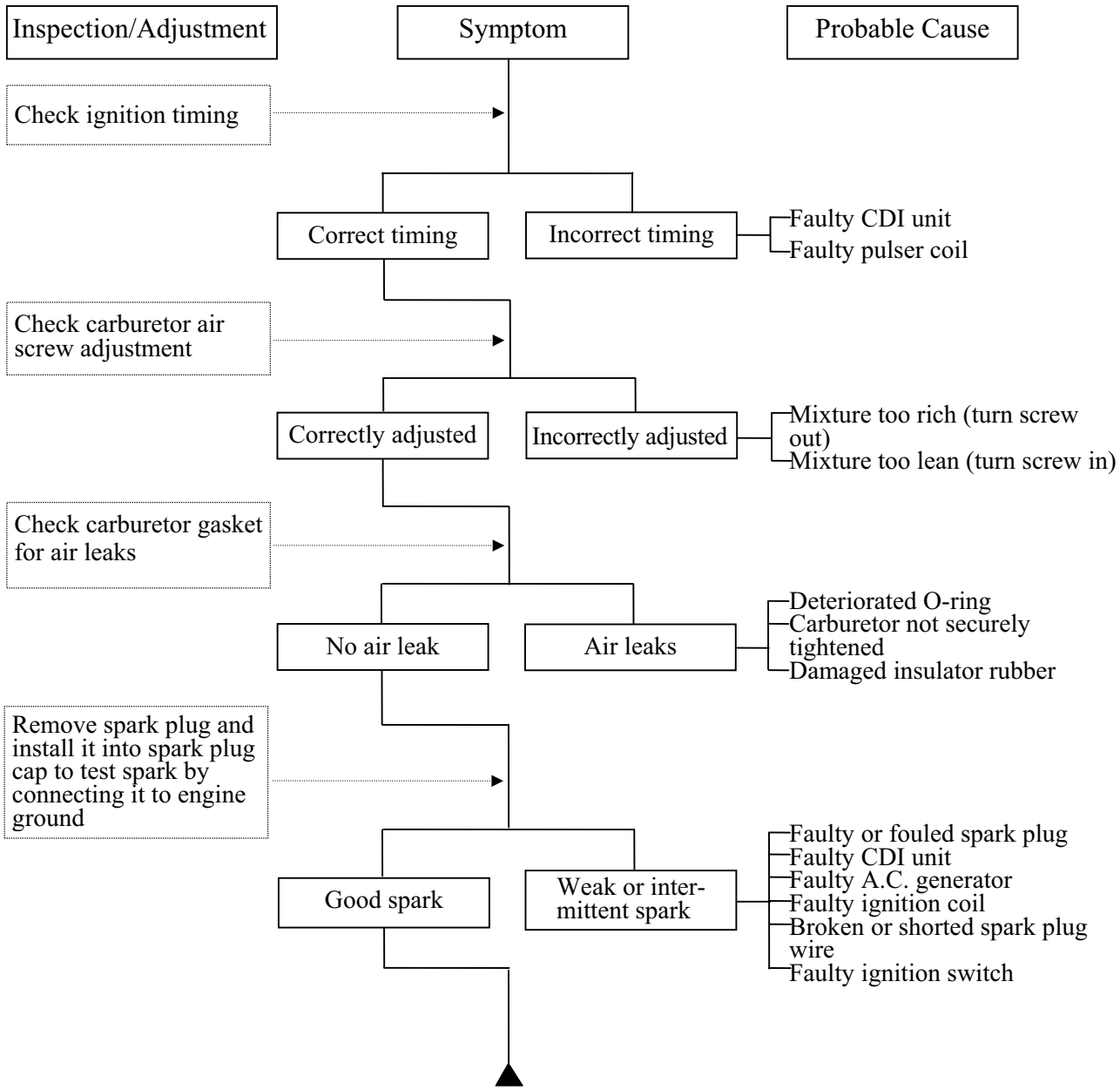
ENGINE WILL NOT START OR IS HARD TO START



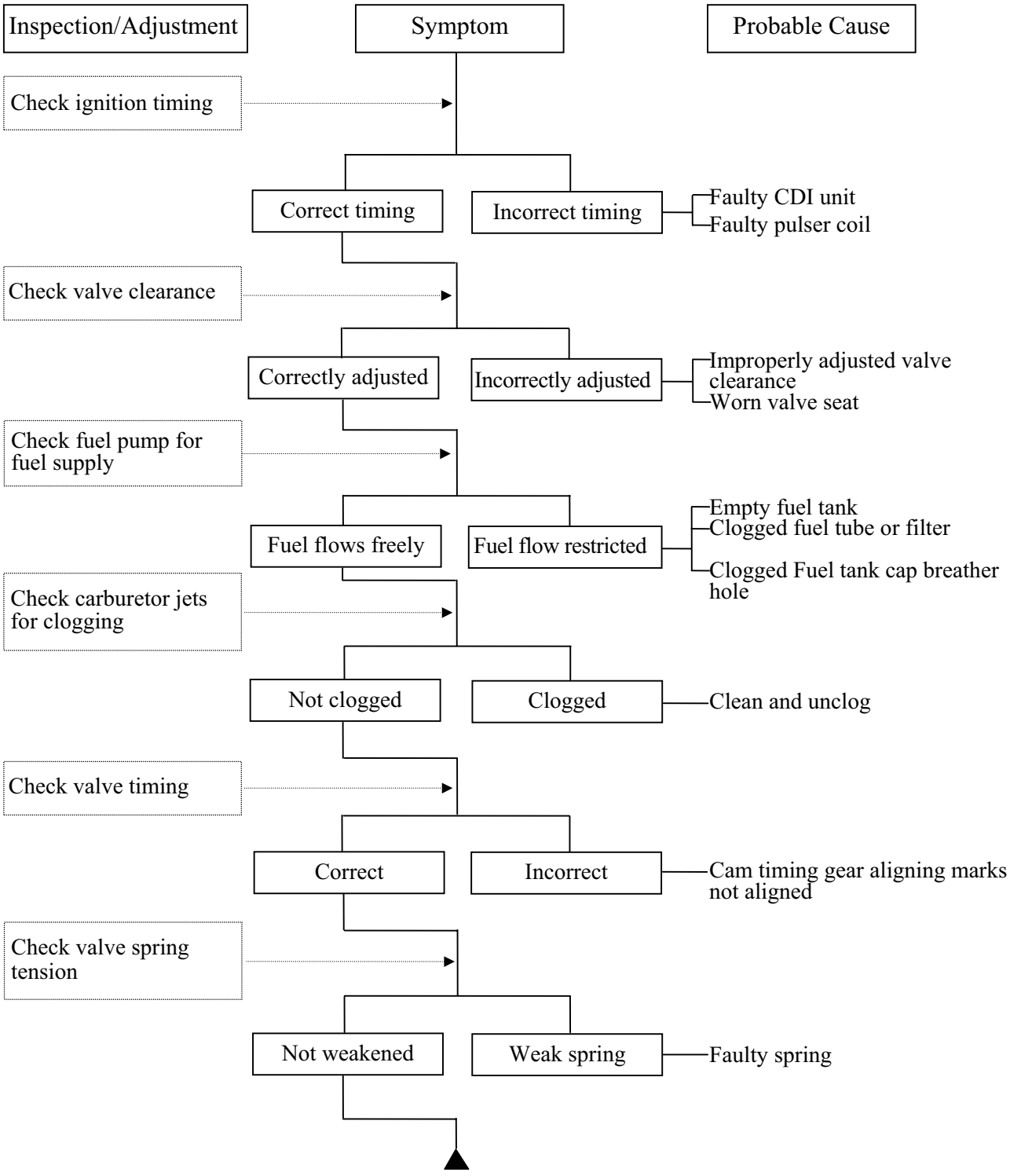
ENGINE LACKS POWER



POOR PERFORMANCE (ESPECIALLY AT IDLE AND LOW SPEEDS)

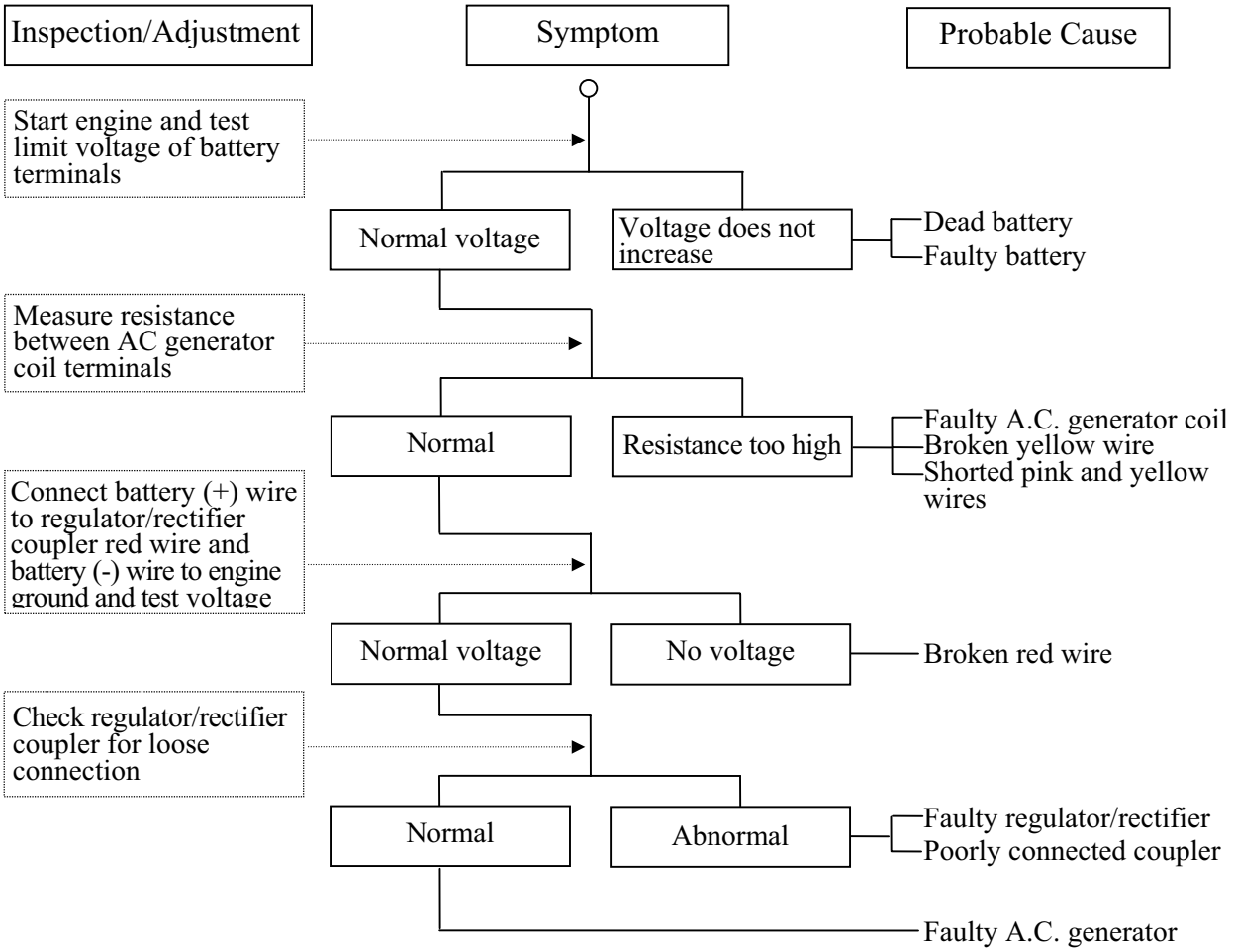


POOR PERFORMANCE (AT HIGH SPEED)

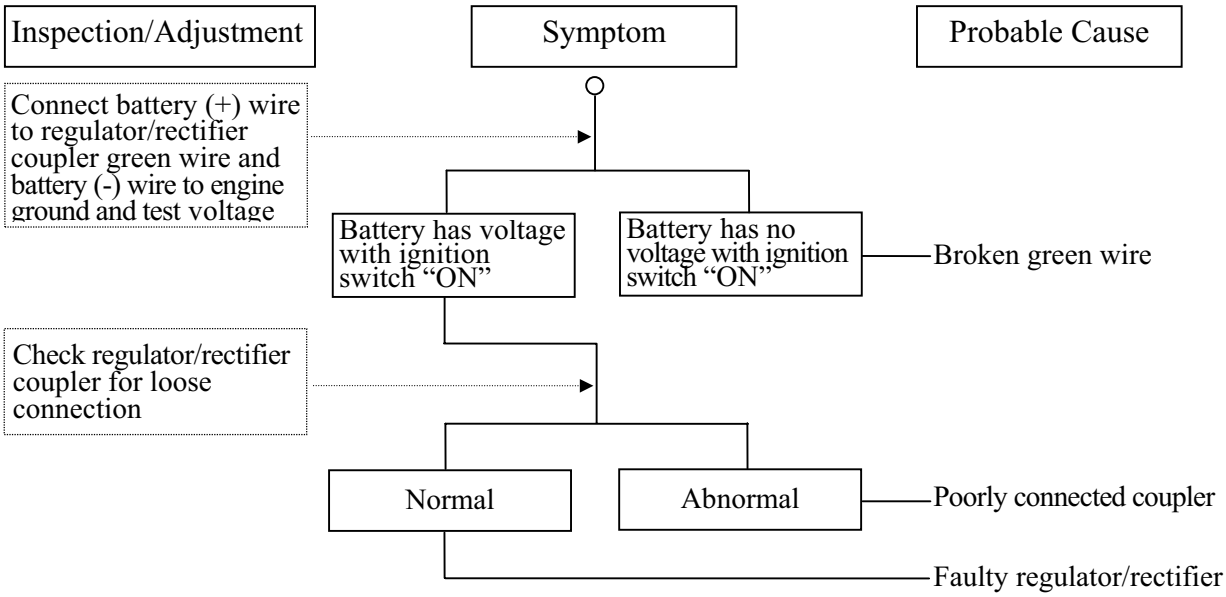


POOR CHARGING (BATTERY OVER DISCHARGING OR OVERCHARGING)

Undercharging



Overcharging



NO SPARK AT SPARK PLUG