HONDA

SHOP MANUAL

EZ6500CXS

EZ6500CXS

A Few Words About Safety

Service Information

The service and repair information contained in this manual is intended for use by qualified, professional technicians. Attempting service or repairs without the proper training, tools, and equipment cause injury to your and/others. It could also damage this Honda product or create unsafe conditions.

This manual describes the proper methods and procedures for performing service, maintenance, and repairs. Some procedures require the use special tools. Any person who intends to use a replacement part, service procedure, or a tool that is not recommended by Honda must determine the risks to their personal safety and the operation of this product.

If you need to replace a part, use Honda Genuine parts with the correct part number or an equivalent part. We strongly recommend that you do not use replacement parts of inferior quality.

For Your Customer's Safety

Proper service and maintenance are essential to the customer's safety and reliability of this product. Any error or oversight while servicing this this product can result in faulty operation, damage to the product, or injury to others.

⚠ WARNING

Improper service or repairs can create an unsafe condition that can cause your customer or others to be seriously hurt or killed.

Follow the procedures and precauitions in this manual and other service materials carefully.

For Your Safety

Because this manual is intended for professional service technician, we do not provide warnings about many basic shop safety practices (e.g., Hot parts-wear gloves). If you have not received shop safety training or do not feel confident about your knowledge of safe servicing practices, we recommend that you do not attempt to perform the procedures described in this manual.

Some of the most important general service safety precautions are given below. However, we cannot warm you of every conceivable hazard that can arise in performing service and repair procedures. Only you ca decide whether or not you should perform a given task.

⚠ WARNING

Failure to properly follow instructions and precautions can cause you to be seriosly hurt or killed.

Follow the procedures and precauitions in this manual carefully.

Important Safety precautions

Make sure you have a clear understanding of all basic shop safety practices and are wearing appropriate clothing and using safety equipment. When performing any service task, be especially careful of the following:

- Read all of the instructions before you begin, and make sure you have the tools, the replacement or repair parts, and the skills required to perform the tasks safely and completely.
- Protect your eyes by using proper safety glasses, goggles, or face shields anytime you hammer, drill, grind, or work around pressurized air, pressurized liquids, springs or other stored-energy components. If there is any doubt, put on eye protection.
- Use other protective wear when necessary, for example gloves or safety shoes. Handling hot or sharp parts can cause severe burns or cuts. Before you grab something that looks like it can hurt you, stop and put on gloves.
- Protect yourself and others whenever you have equipment hoisted in the air. Anytime you lift this product with a hoist, make sure that the hoist hook is securely attached to the product.

Make sure the engine is off before you begin any servicing procedures, unless the instruction tells you to do otherwise. This will help eliminate several potential hazards:

- Carbon monoxide poisoning from engine exhaust. Be sure there is adequate ventilation whenever you run the engine.
- Burns from hot parts. Let the engine and exhaust system cool before working in those areas.
- Injury from moving parts. If the instruction tells you to run the engine, be sure your hands, fingers, and clothing are out of the way.

Gasoline vapors and hydrogen gasses from batteries are explosive. To reduce the possibility of a fire or explosion, be careful when working around gasoline or batteries.

- Use only a nonflammable solvent, not gasoline, to clean parts.
- Never store gasoline in an open container.
- Keep all cigarettes, sparks, and flames away from the battery and all fuel-related parts.

INTRODUCTION

This manual covers the service and repair procedures for the Honda FA6500X.
All information contained in this manual is based on the latest product information available at the time of printing. We reserve the right to make changes at anytime without notice.
No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of the publisher. This includes text, figures, and tables.

As you read this manual, you will find information that is preceded by a NOTICE symbol.
The purpose of this message is to help prevent damage to this Honda product, other property, or the environment.

SAFETY MESSAGES

Your safety and the safety of others are very important. To help you make informed decisions, we have provided safety messages and other safety information throughout this manual. Of course, it is not practical or possible to warn you about all the hazards associated with servicing these products. You must use your own good judgement.

You will find important safety information in a variety of forms, including:
- Safety Labels – on the product.
- Safety Messages – preceded by a safety alert symbol ⚠ and one of three signal words, DANGER, WARNING, or CAUTION.

These signal words mean:

⚠ DANGER You WILL be KILLED or SERIOUSLY HURT if you don't follow instructions.
⚠ WARNING You CAN be KILLED or SERIOUSLY HURT if you don't follow instructions.
⚠ CAUTION You CAN be HURT if you don't follow instructions.

- Instructions – how to service these products correctly and safely.

ALL INFORMATION, ILLUSTRATIONS, DIRECTIONS, AND SPECIFICATIONS INCLUDED IN THIS PUBLICATION ARE BASED ON THE LATEST PRODUCT INFORMATION AVAILABLE AT THE TIME OF APPROVAL FOR PRINTING.

RESERVES THE RIGHT TO MAKE CHANGES AT ANY TIME WITHOUT NOTICE AND WITHOUT INCURRING ANY OBLIGATION WHATSOEVER.

NO PART OF THIS PUBLICATION MAY BE REPRODUCED WITHOUT WRITTEN PERMISSION.

THIS MANUAL IS WRITTEN FOR PERSONS WHO HAVE ACQUIRED BASIC KNOWLEDGE OF MAINTENANCE ON Honda PRODUCTS.

Date of Issue: Sep. 2019

SERVICE RULES

- Use Honda Genuine or Honda-recommended parts and lubricants or their equivalents. Parts that do not meet Honda's design specifications may damage the unit.
- Use the special tools designed for the product.
- Install new gaskets, O-rings, etc. when reassembling.
- When torqueing bolts or nuts, begin with larger-diameter or inner bolts first and tighten to the specified torque diagonally, unless a particular sequence is specified.
- Clean parts in cleaning solvent upon disassembly. Lubricate any sliding surfaces before reassembly.
- After reassembly, check all parts for proper installation and operation.
- Many screws used in this machine are self-tapping. Be aware that cross-threading or overtightening these screws will strip the threads and ruin the hole.

Use only metric tools when servicing this unit. Metric bolts, nuts and screws are not interchangeable with non-metric fasteners.
The use of incorrect tools and fasteners will damage the unit.

SYMBOLS

The symbols used throughout this manual show special service procedure.

If supplementary information is required pertaining to these symbols, it will be explained specifically in the text without the use of the symbols.

	Replace the part(s) with new one(s) before assembly.
	Use the recommend engine oil, unless otherwise specified. SAE 10W-30A API service classification SE or later.
(○ - ○L) (○)	Indicates the diameter, length, and quantity of metric bolts used.
(○) (○)	Indicates the diameter and quantity of metric Nut used. Indicates the diameter and quantity of metric washer used.

Table of Contents

1. SPECIFICATIONS
1-1. SPECIFICATIONS

MODEL	EZ6500CXS

★ENGINE

Model		Honda GX390H1
Displacement	cm^3	389
Oil Capacity	ℓ	1.1

Regarding detailed specification, please refer and confirm HONDA ENGINE shop manual.

★GENERATOR

Type			Self-exciting, 2pole, field rotating type				
Voltage regulation system			AVR				
Phase			Single				
Rated power factor			1.0				
Type			R, REH, RK, RA, CL	M, K, MK	L, LB	S, SB	LS
Rated Voltage		V	220	230	120	220	230
Frequency		Hz	50		60		
AC output	Rated	kVA	5.0		5.5		
	Maximum	kVA	5.5		6.5		

★OTHERS

Fuel Tank Capacity		ℓ	15.5
Size	Length	mm	685 (690)
	Width	mm	535 (670)
	Height	mm	540 (610)
Continuous operating		Hr	5.8 (50Hz) / 5.4 (60Hz)
Dry Weight		Kg	80.0

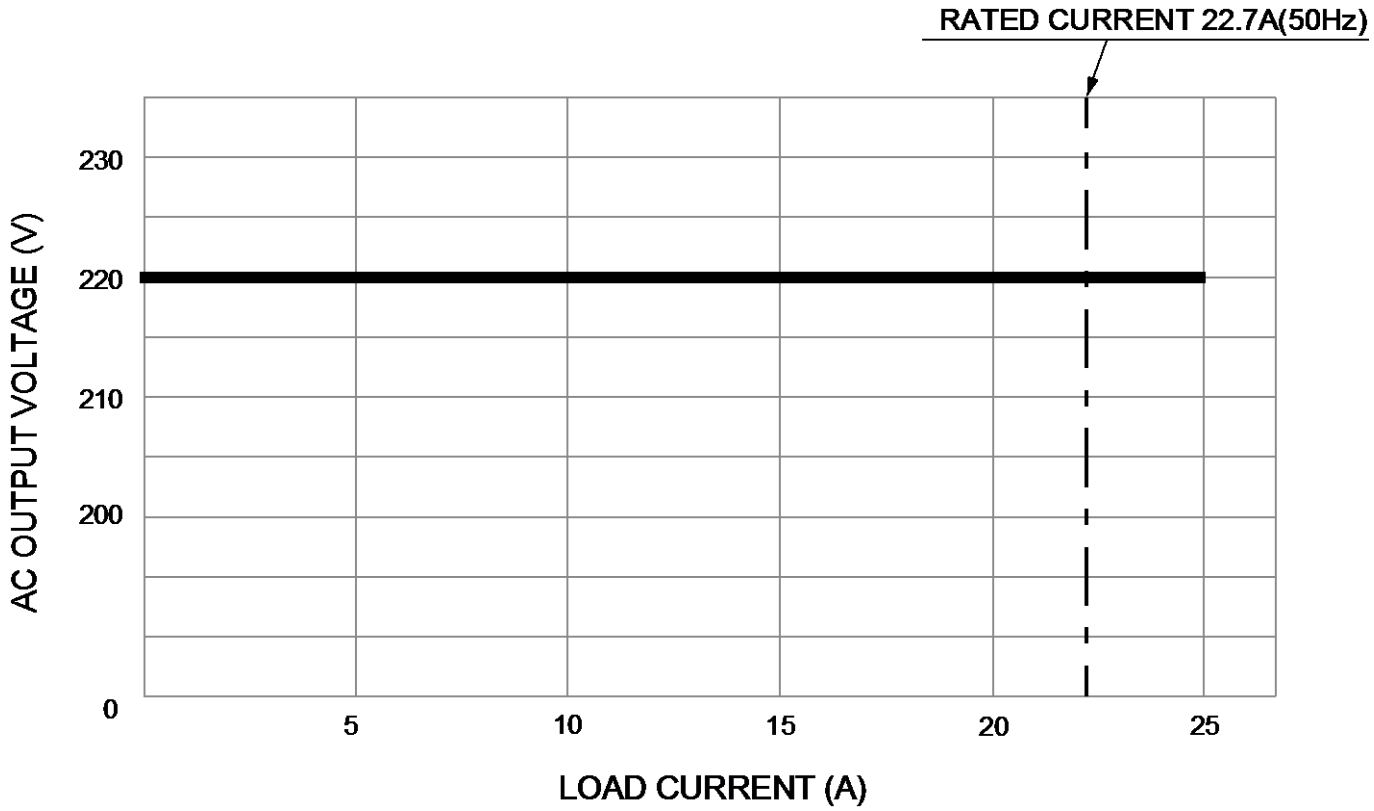
() With Wheel kit

Specifications are subject to change without notice.

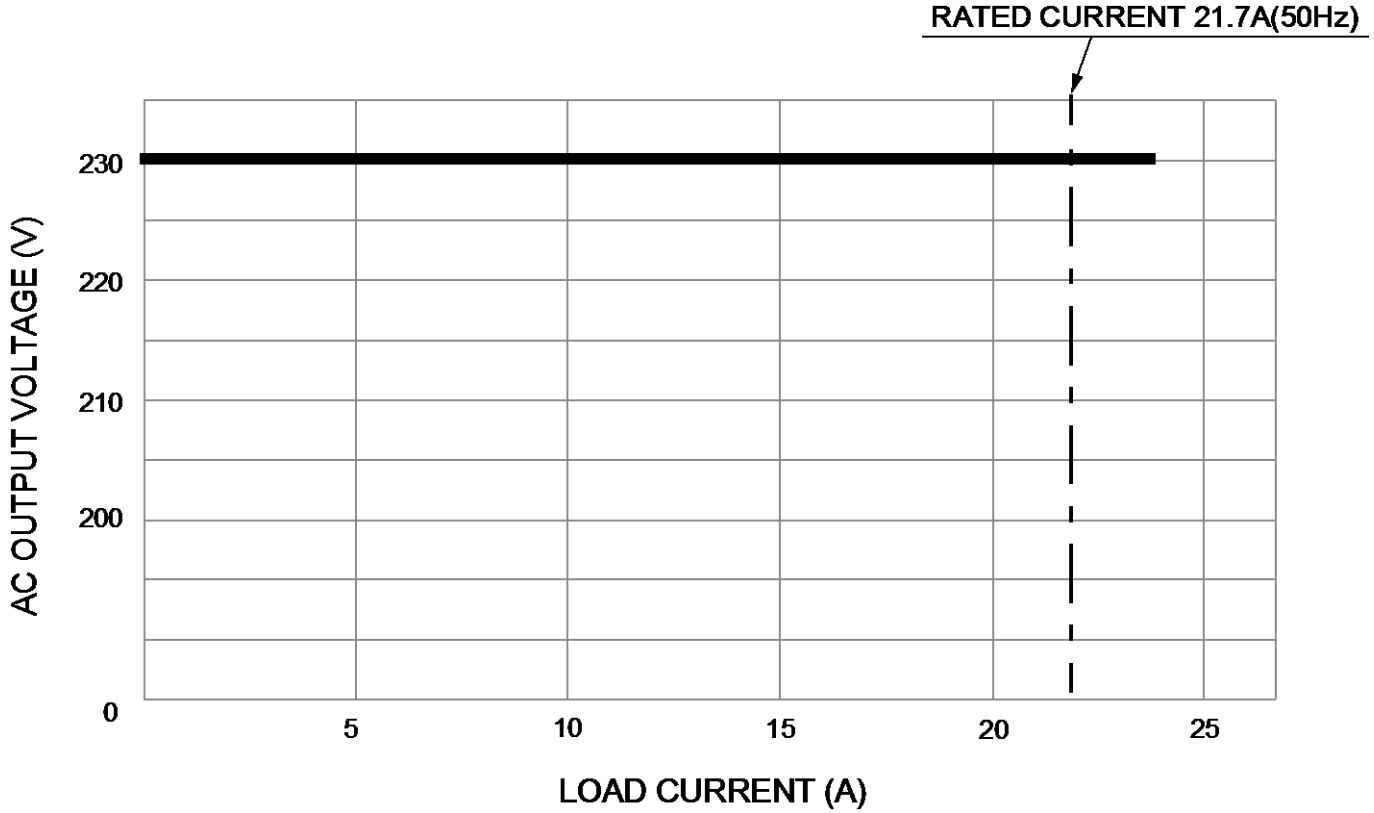
1-2. PERFORMANCE CURVES

-The curve shows performance of the generator under the average conditions.
-Performance may vary to some degree depending on ambient temperature and humidity.
-The output voltage will be higher the usual when the generator is still cold, immediately the engine starts.

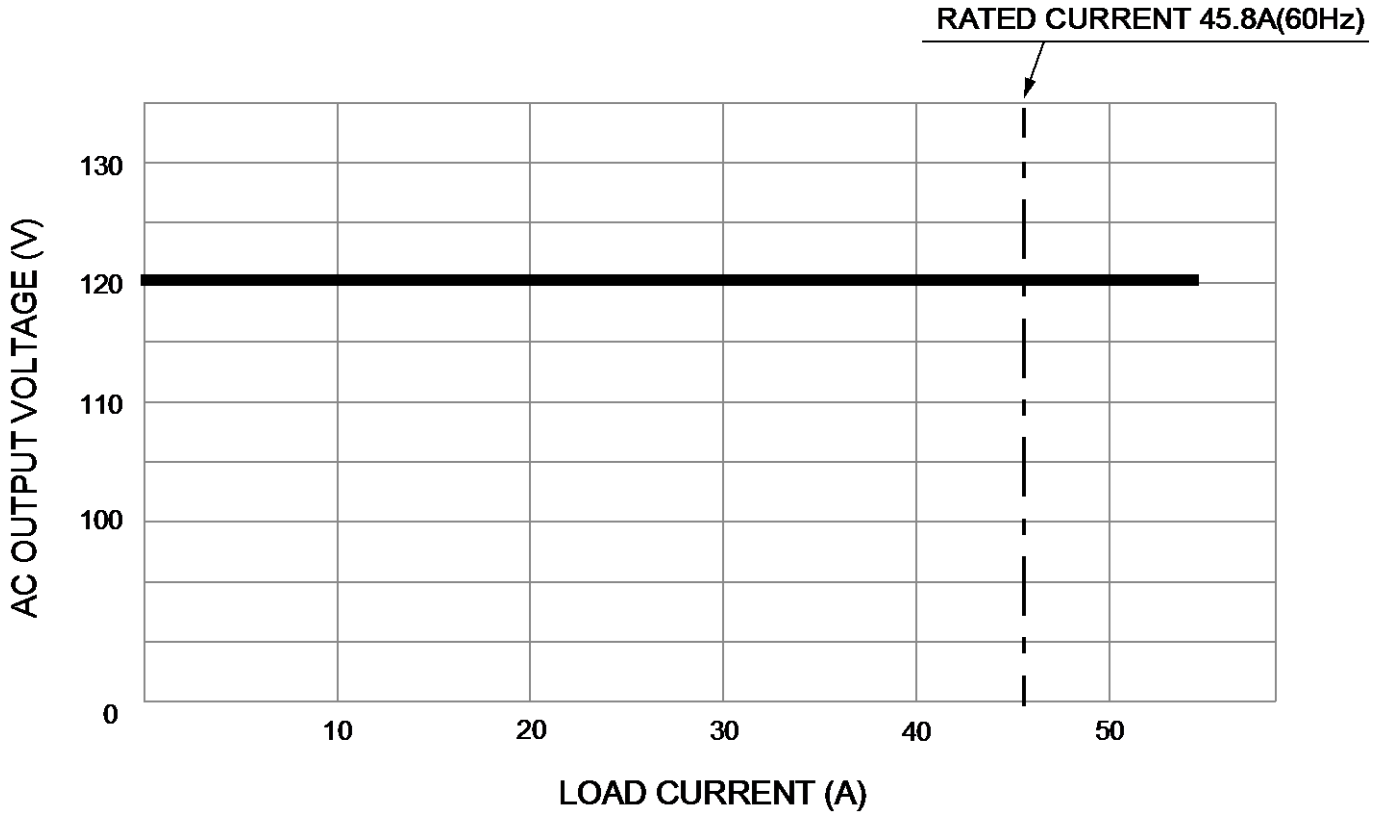
R, REH, RK, RA, CL Type
AC EXTERNAL CHARACTERISTIC CURVES



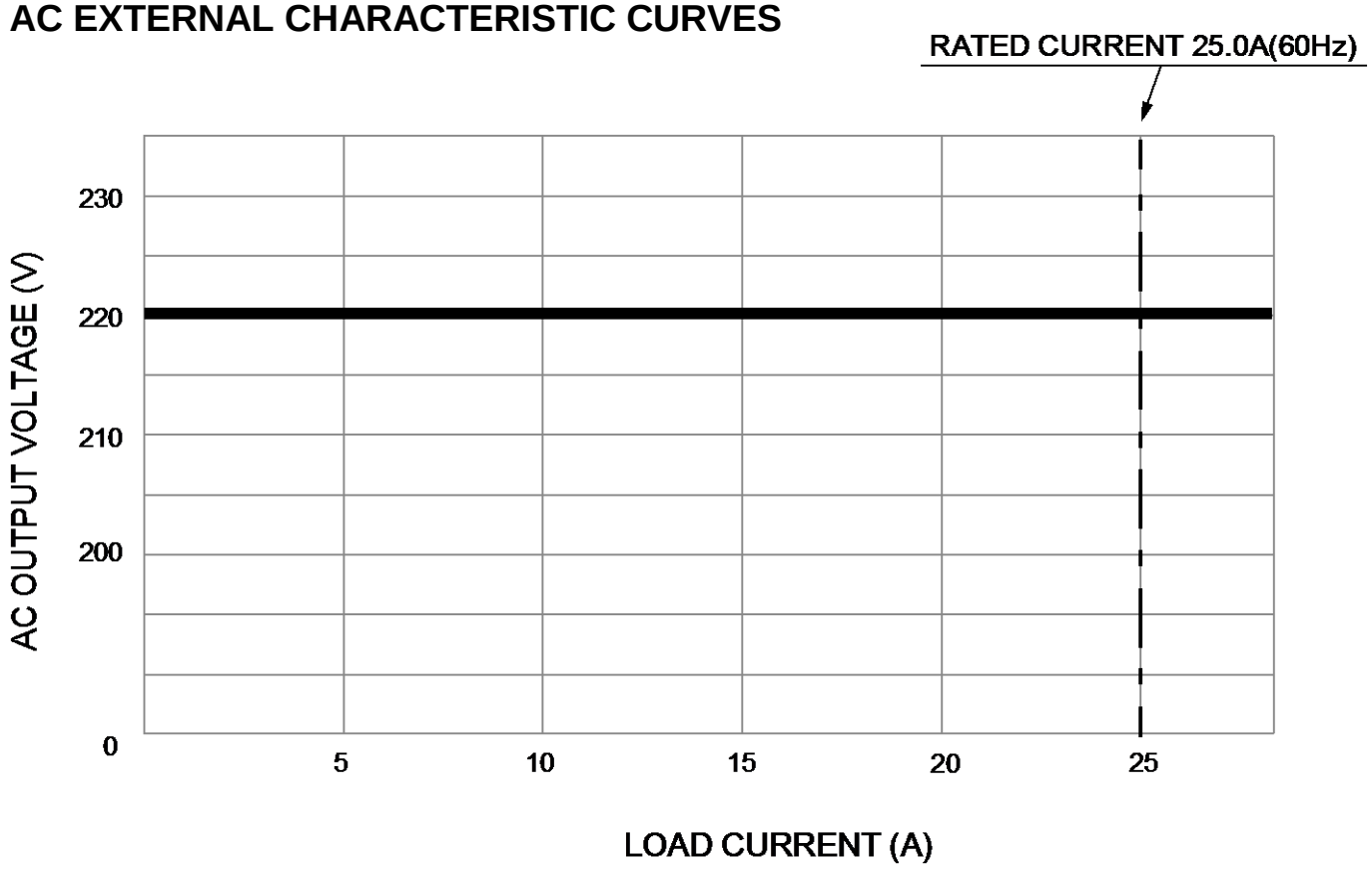
K, M, MK Type
AC EXTERNAL CHARACTERISTIC CURVES



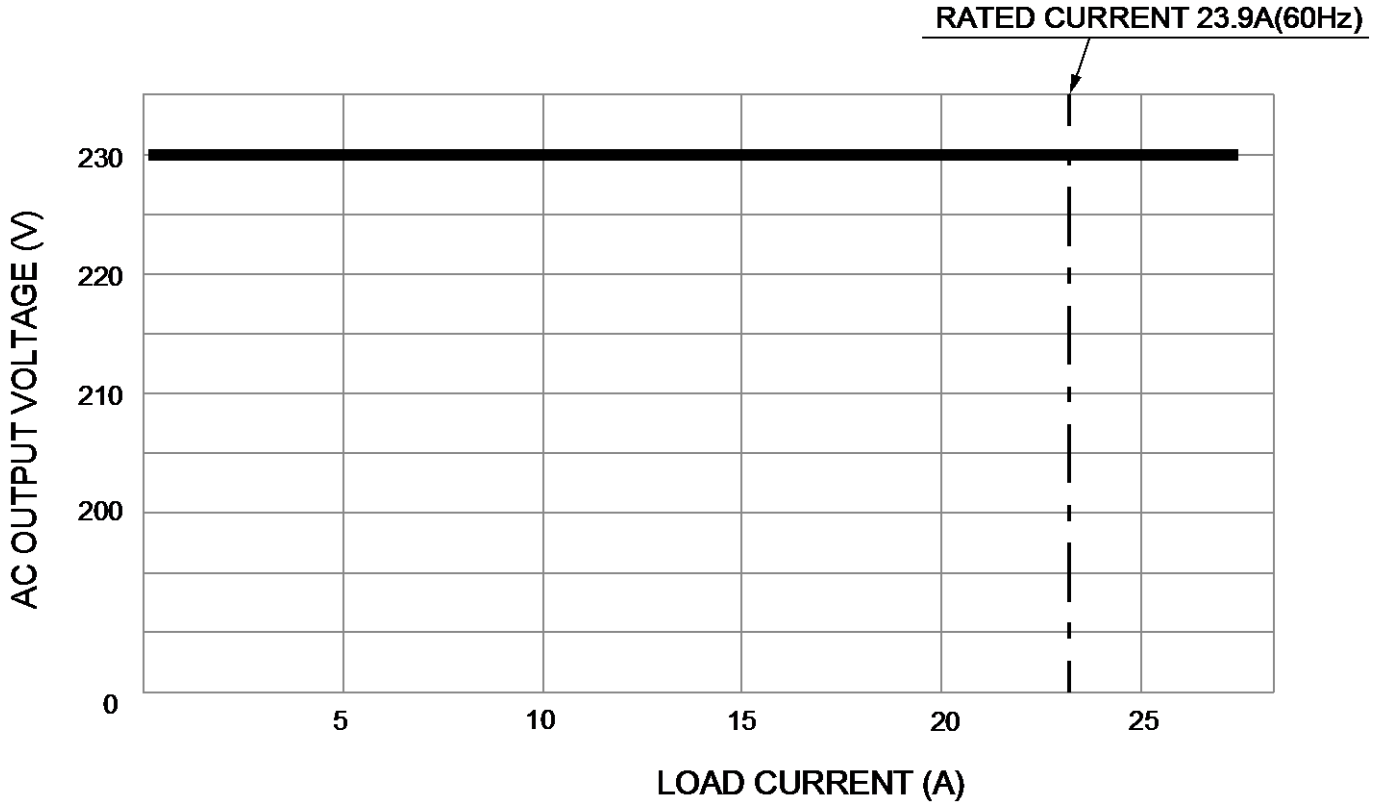
L, LB Type
AC EXTERNAL CHARACTERISTIC CURVES



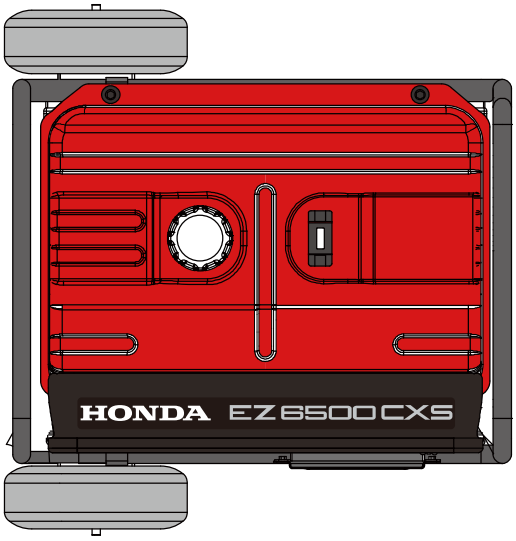
S, SB Type
AC EXTERNAL CHARACTERISTIC CURVES

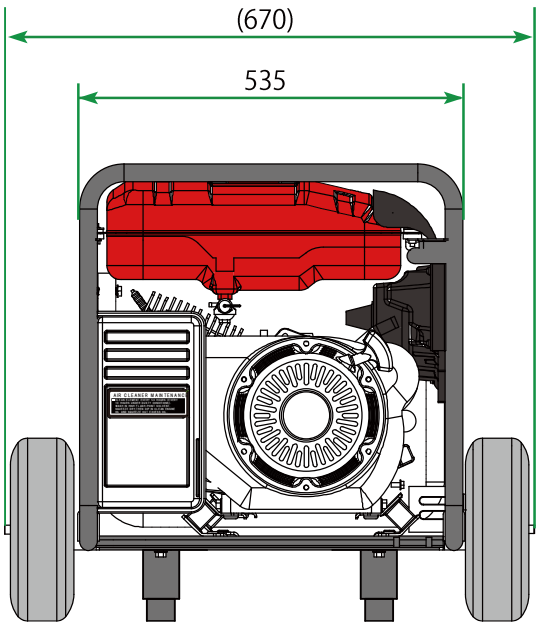


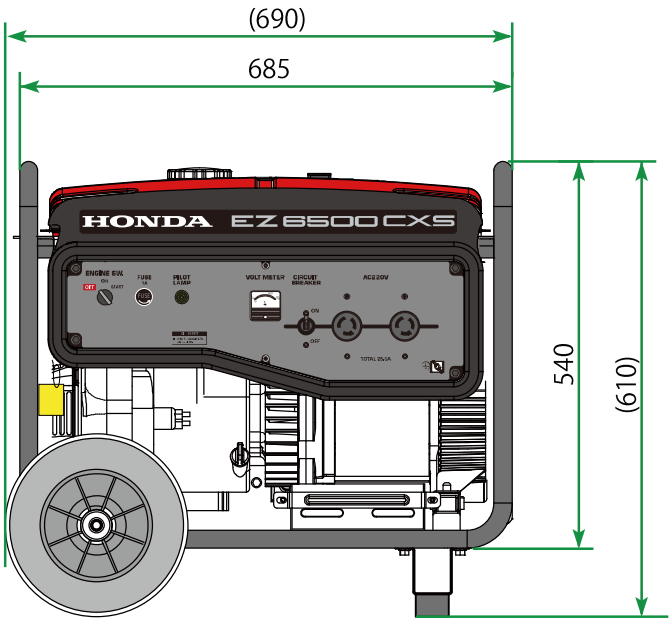
LS Type
AC EXTERNAL CHARACTERISTIC CURVES



1-3. GENERAL DESCRIPTION





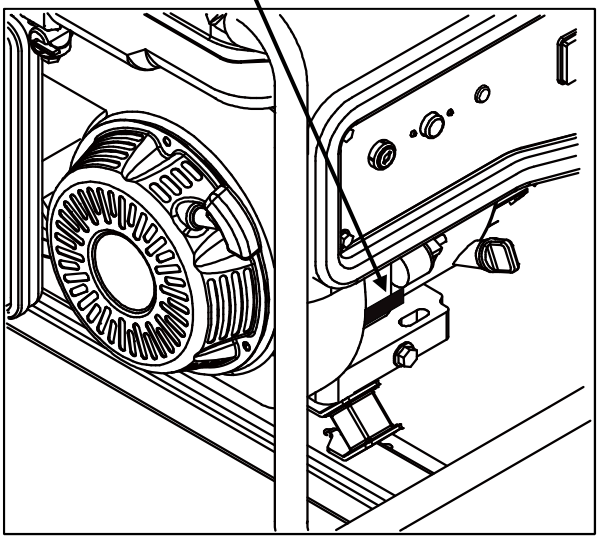


1-4. SERIAL NUMBER

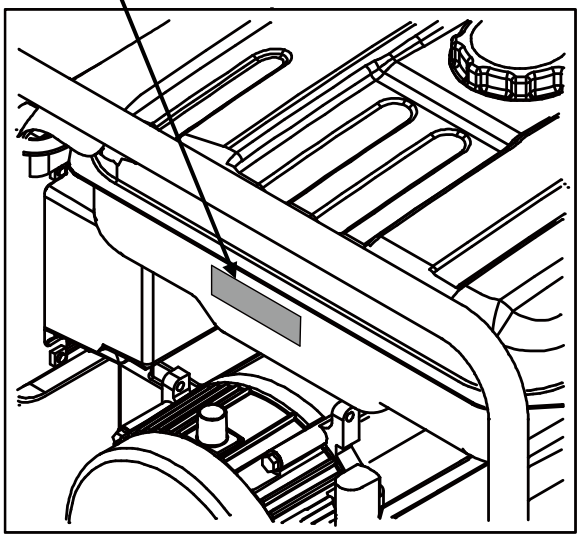
Serial number is stamped on the label stuck on the fuel tank.

NOTE: Always specify serial number when inquiring about the generator or ordering spare parts in order to get correct parts and accurate service.

ENGINE SERIAL NUMBER



GENERATOR SERIAL NUMBER



2. MAINTENANCE

2-1. MAINTENANCE SCHEDULE

MAINTENANCE SCHEDULE

REGULAR SERVISE PERIOD Performed at every indicated month or operating hour interval, whichever comes first. / ITEM		Each use	First month or 20Hrs. (3)	Every 3month or 50Hrs. (3)	Every 6month or 100Hrs. (3)	Every Year or 300Hrs. (3)	Refer to page
Engine oil	Check level	O					Refer HONDA ENGINE shop manual.
	Change		O		O		
Air cleaner	Check	O					
	Clean			O (1)			
Spark plug	Check-Clean				O		
	Replace					O	
Valve clearance	Check-Adjust					O (2)	
Combustion Chamber	Clean	After every 500 Hrs.(2)					
Fuel tank and strainer	Clean				O (2)		2-2
Fuel valve sediment cup	Clean				O (2)		2-2
Fuel tube	Check	Every 2 years (2) (Replace if necessary)					2-3

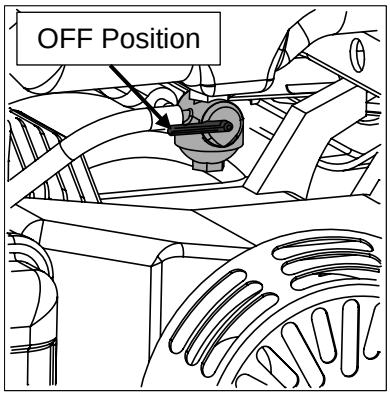
(1) Service more frequently when used in dusty areas.
(2) These items should be serviced by your dealer, unless the owner has the proper tools and is mechanically proficient. See the service manual.
(3) For professional commercial use, log hours of operation to determine proper maintenance intervals.
Failure to follow this maintenance schedule could result in non-warrantable failures.

2-2. FUEL TANK AND STRAINER CLEANING

⚠ WARNING

Gasoline is highly flammable explosive.You can be burned or seriously injured when handing fuel.

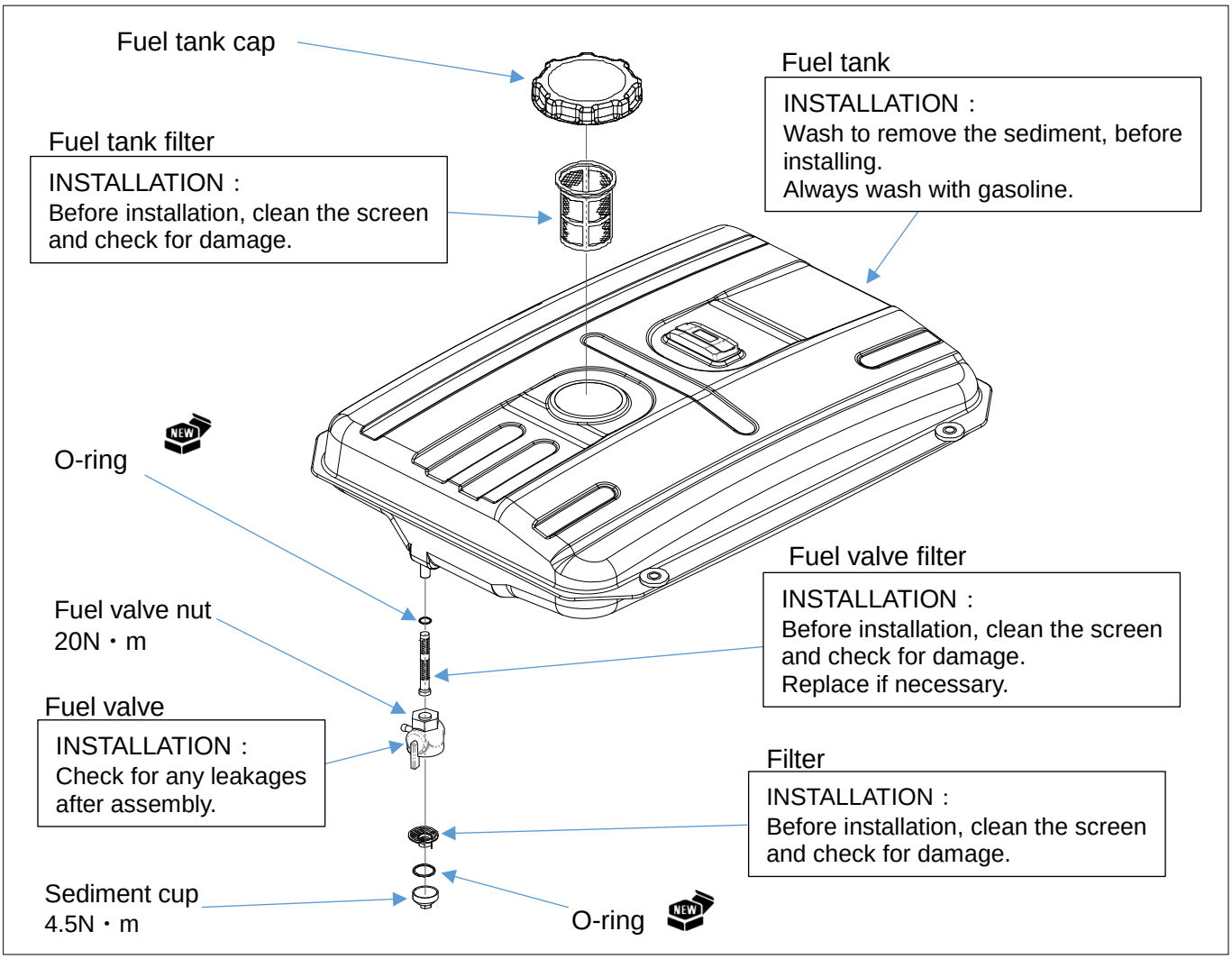
- Keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.



1) Drain the fuel into a suitable container.

2) Turn the fuel valve to the “OFF”

3) Remove the fuel tank.

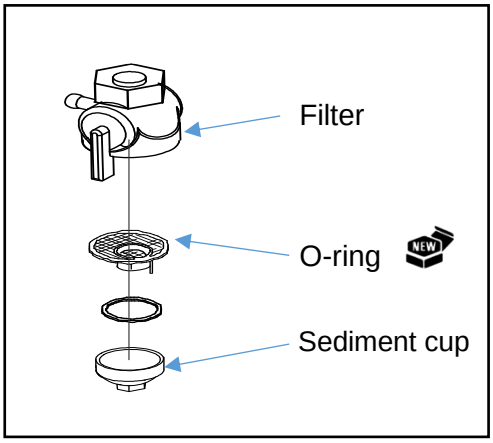


4) Remove the fuel valve.
5) Check the screen of the fuel valve filter for clogs or damage, replace if necessary.
Clean the fuel valve filter with non-flammable solvent, and allow them to dry thoroughly.

6) Clean the sediment cup, O-ring, and filter in nonflammable or high flash point solvent.

7) Reinstall the filter, O-ring, and sediment cup. O-ring can not be reused. Replace with new.

Tightening torque: 4.5 N•m



8) Install a new O-ring to the fuel valve and install them to the fuel tank.

9) Tighten the fuel valve to the special torque.

Tightening torque: 20.0 N•m

10) After installation, check for any signs of fuel leakage.

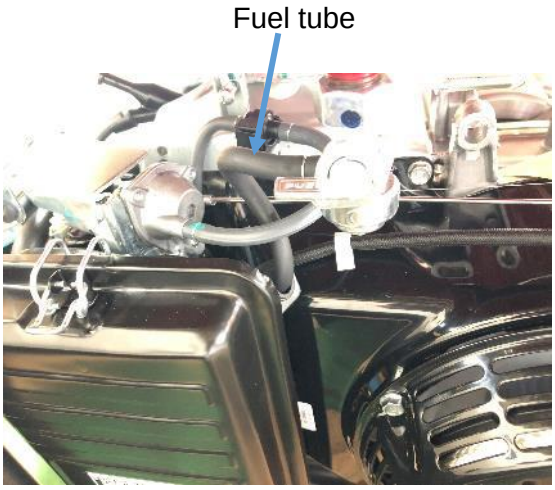
2-3. FUEL TUBE CHECK

⚠ WARNING

Gasoline is highly flammable explosive.You can be burned or seriously injured when handing fuel.

- Keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

1) Check the fuel tube foe deterioration, cracks or signs or leakage. Replace if necessary.



3. REMOVAL AND INSTALLATION

3-1. PREPARATION AND PRECAUTIONS

1) For safety, drain engine oil and gasoline to before work.

2) Be sure to memorize the location of individual parts when disassembling the generator so that the generator can be reassembled correctly.
Tag the disassembled part with the necessary information to facilitate easier and smoother reassemble.

3) For more convenience, divide the parts into several groups and store them in boxes.

4) To prevent bolts and nuts from being misplaced or installed incorrectly, replace them temporarily to their original position.

5) Handle disassembled parts with care; clean them before reassemble using a neutral cleaning fluid.

6) Use all disassembly / assembly tools properly, and use the proper tool for each specific job.

TORQUE VALUES

Item	Thread Dia. (mm)	Torque Values (N・m)	Remark
Fuel valve mount nut	-	20.0	
Sediment cup	-	4.5	
Generator rotor bolt	M10 , P1.25	45.0	
Exhaust pipe mount nut	M8 , P1.25	22.0	
Exhaust pipe mount bolt	M8 , P1.25	22.0	
brush holder mount bolt	M5	3.0	
AVR unit mount bolt	M5	3.0	

STANDARD TORQUE VALUES

Item	Thread Dia. (mm)	Torque Values (N・m)	Remark
Screw	M4	1.4	
Bolt and nut	M5	4.0	
	M6	7.0	
	M8	15.0	
	M10	27.0	

Regarding Engine torque values, please refer and confirm HONDA ENGINE shop manual.

HOW TO CONNECTION A WIRING

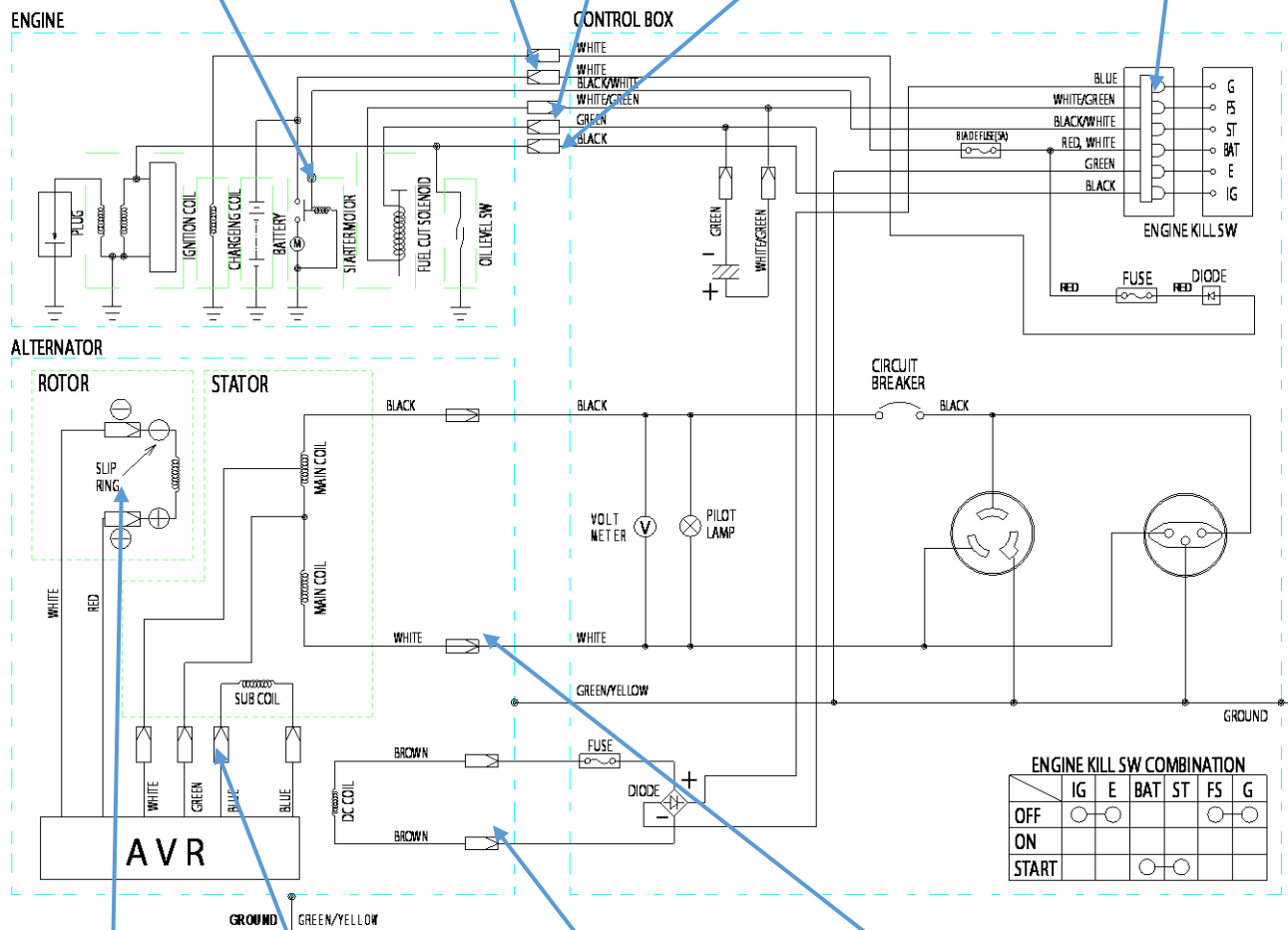
To Fuel cut solenoid

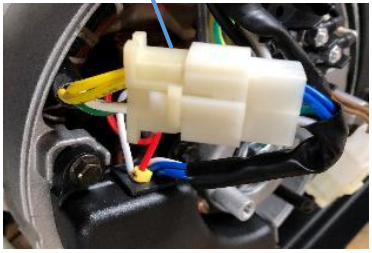
To Charge coil

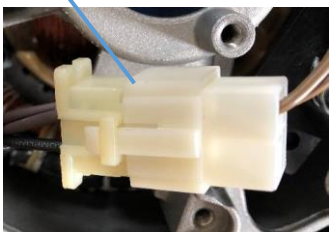
To Engine switch

To Starter motor

To Ignition coil



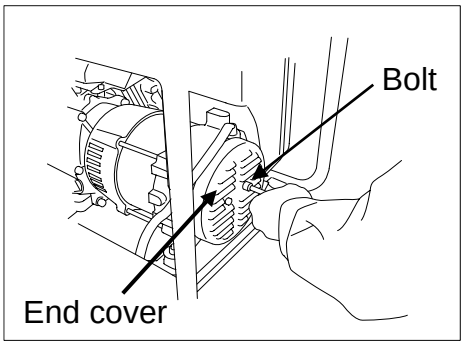




3-2. REMOVAL

3.2.1 CONTROL PANEL AND CONTROL BOX

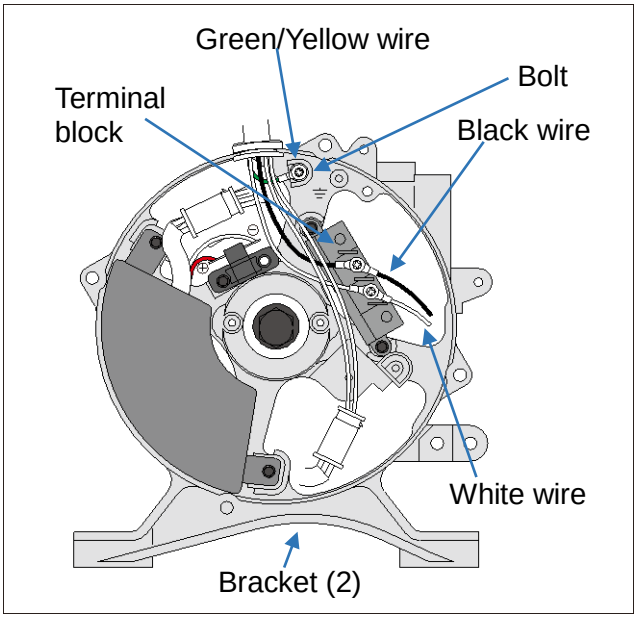
1) Remove the end cover.
   Bolt (M5-12L) (2).



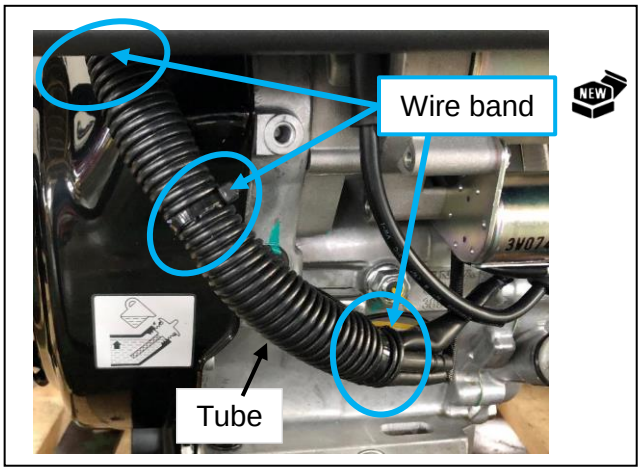
2) Remove the wiring from the control panel to the alternator.

3) Remove the Black wire and White wire from terminal block.

4) Remove the Green/Yellow wire from bracket (2).
   Bolt (M5-12L) (1)

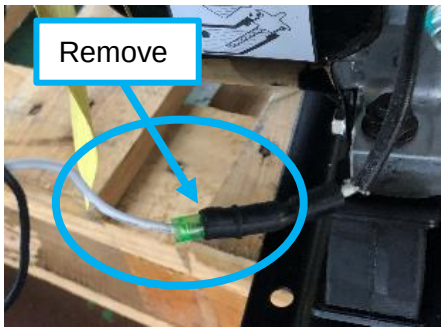


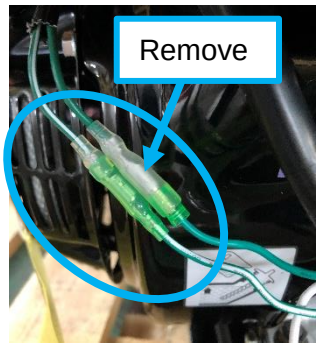
5) Cut the wire band.
   Remove the tube.
   Wire band can not be reused.
   Replace with new.

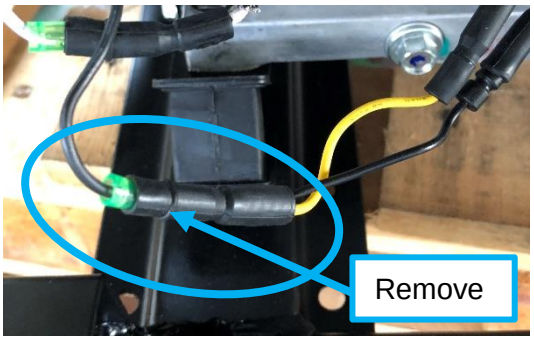


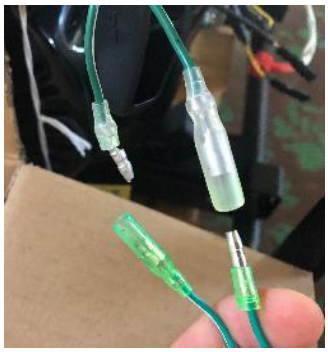
6) Remove the cell motor wiring.

7) Remove the engine wiring.



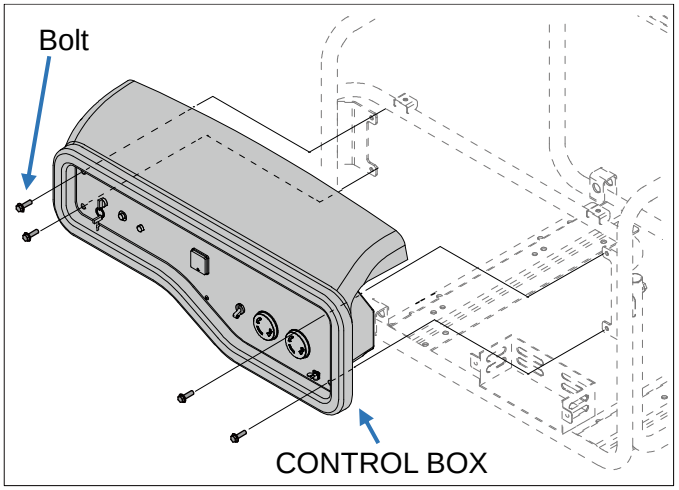




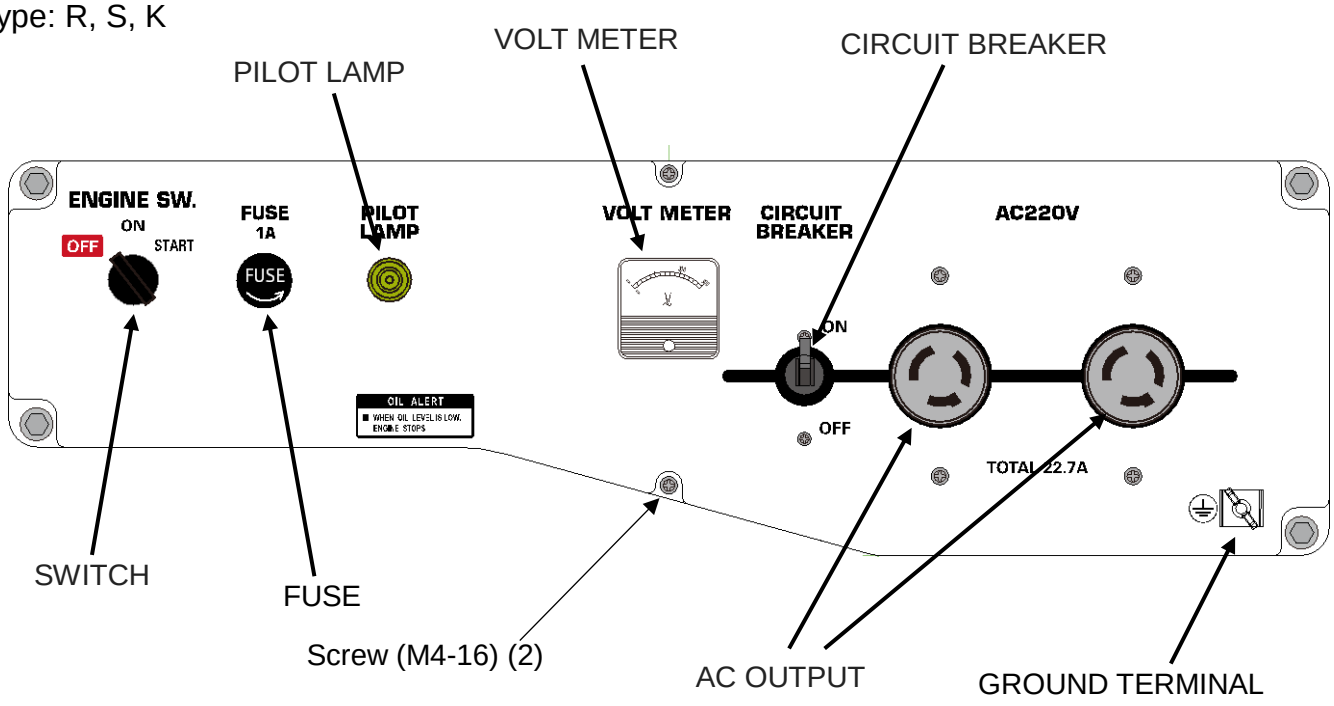


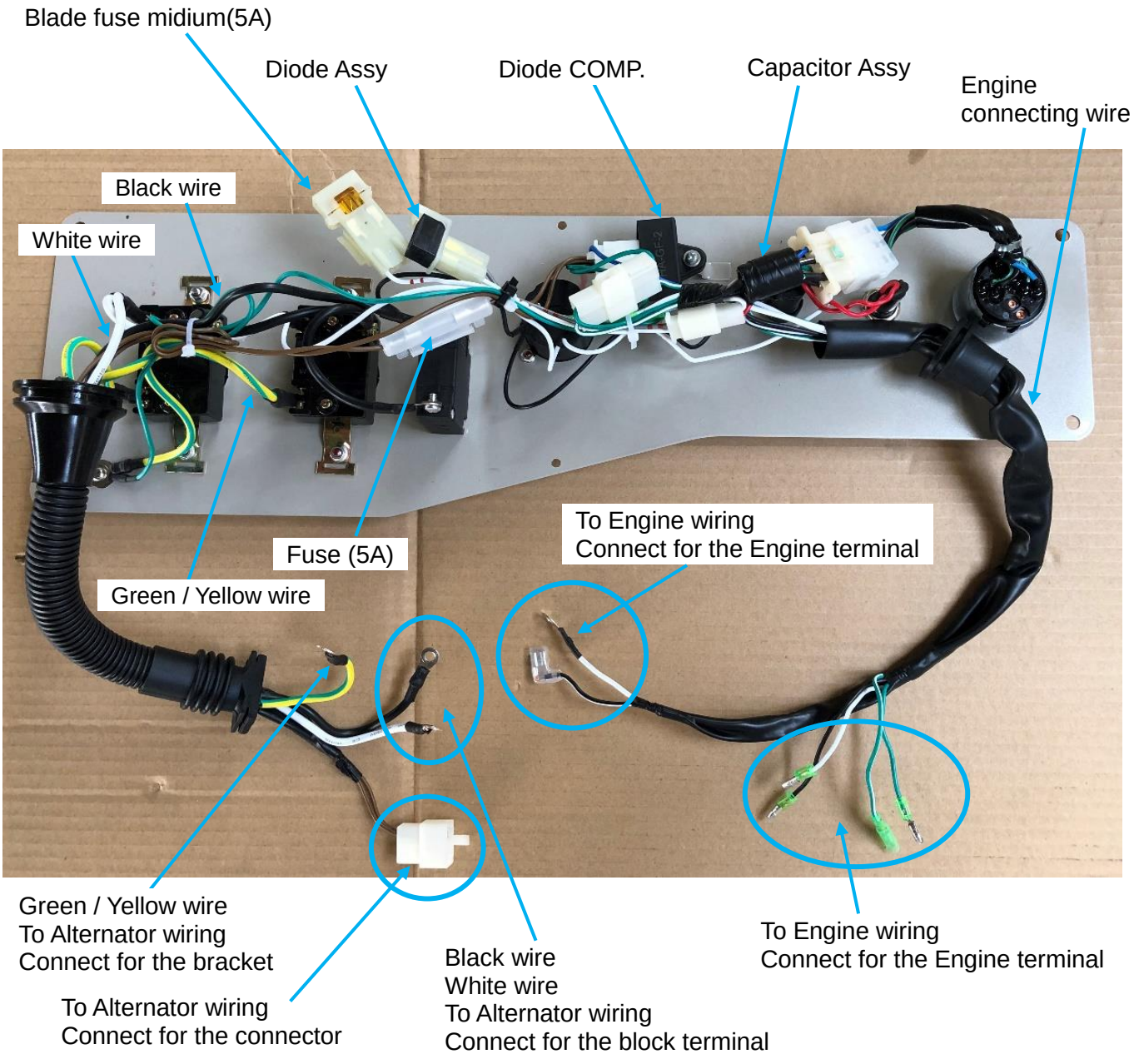
8) Remove the control panel.
Bolt (M6-25L) (4)

9) Remove the control box.

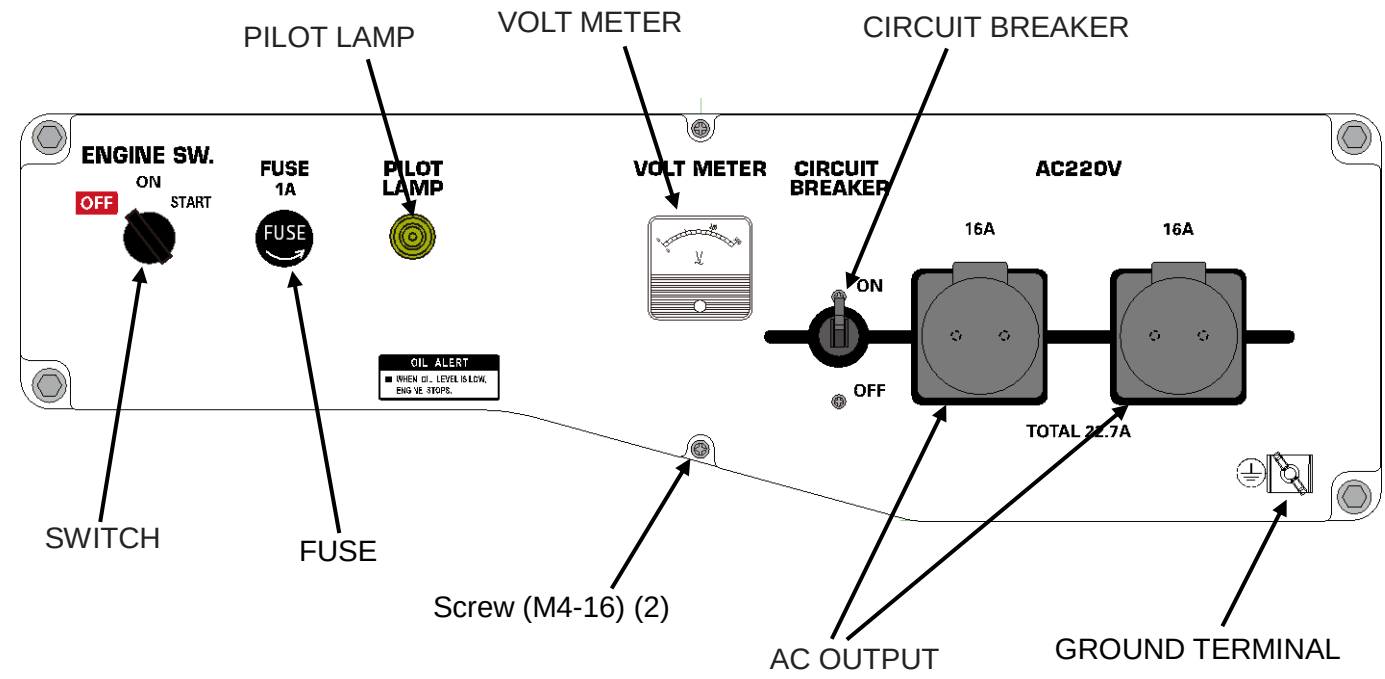


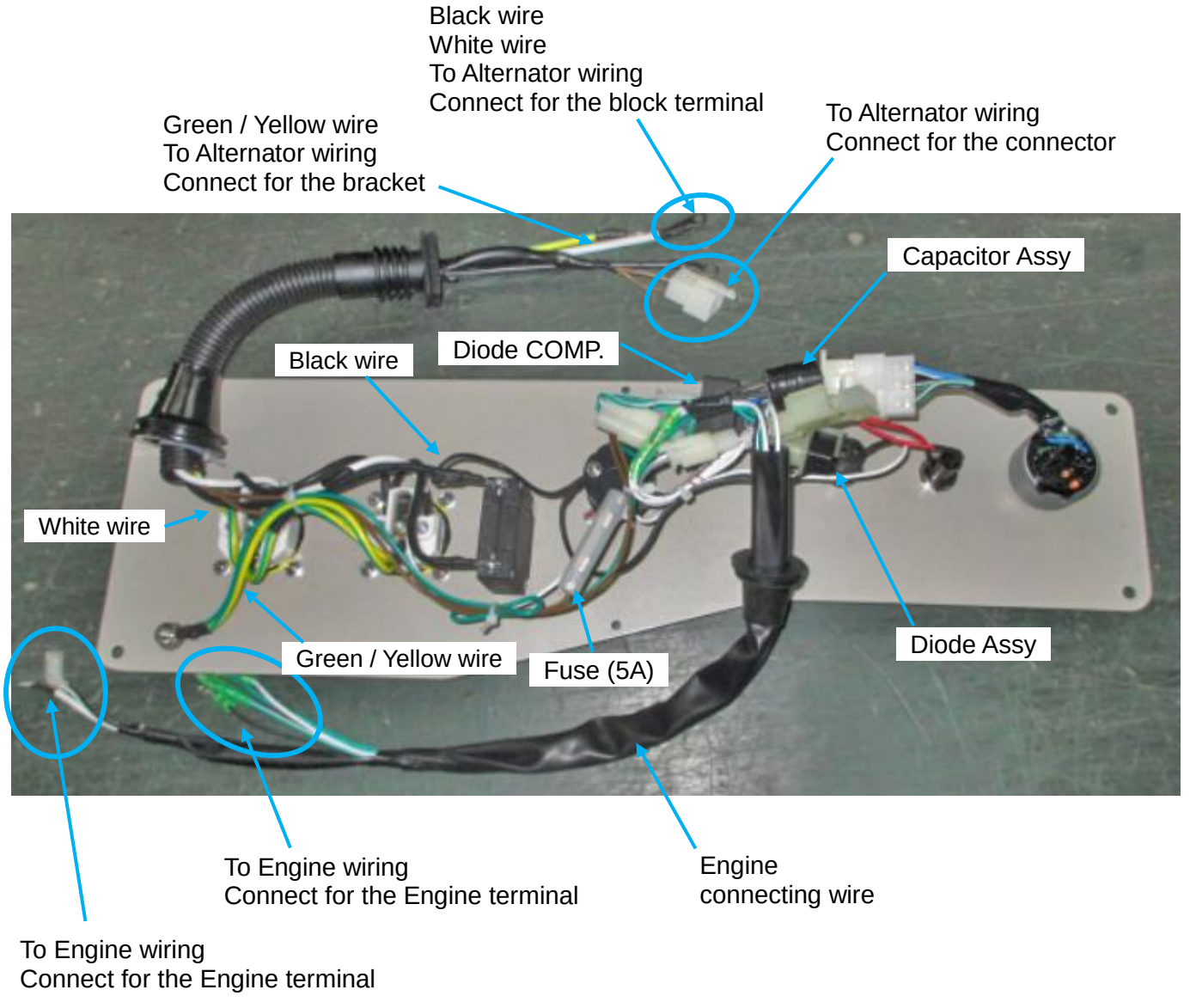
Type: R, S, K


PILOT LAMP
VOLT METER
CIRCUIT BREAKER
ENGINE SW.
ON
START
OFF
FUSE
1A
FUSE
PILOT LAMP
VOLT METER
CIRCUIT BREAKER
AC220V
ON
OFF
OIL ALERT
WHEN OIL LEVEL IS LOW, ENGINE STOPS
TOTAL 22.7A
SWITCH
FUSE
Screw (M4-16) (2)
AC OUTPUT
GROUND TERMINAL

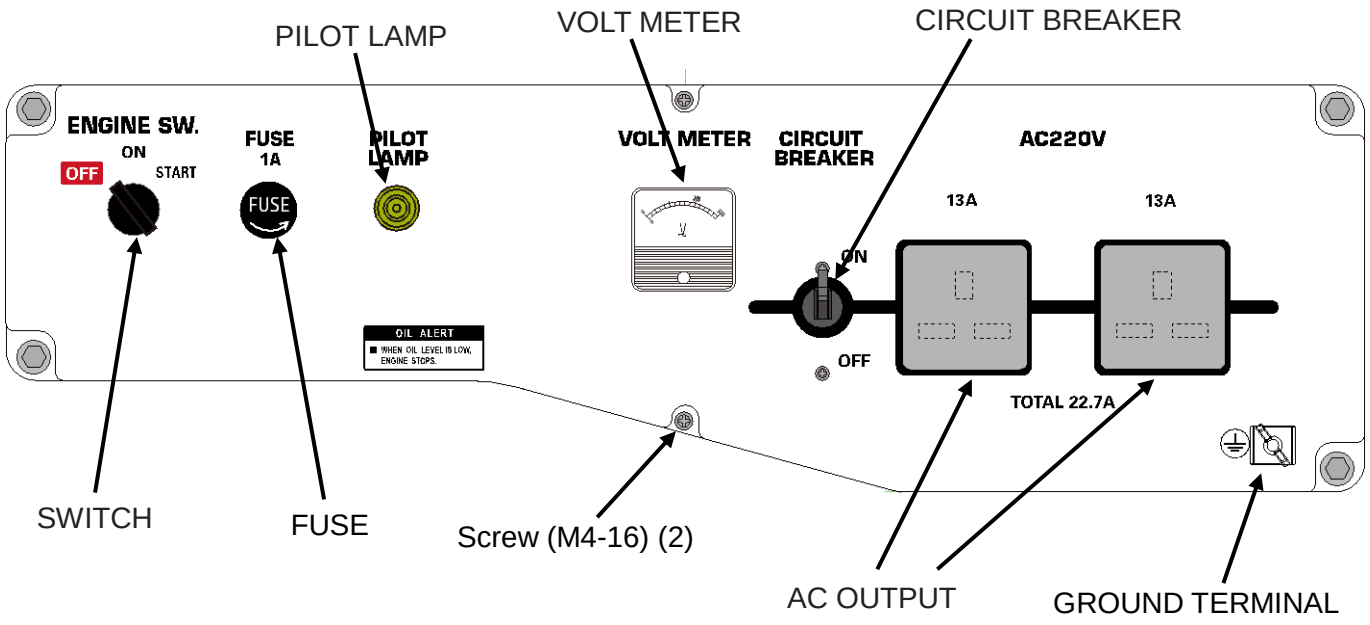

Blade fuse midium(5A)
Diode Assy
Diode COMP.
Capacitor Assy
Engine connecting wire
Black wire
White wire
Fuse (5A)
Green / Yellow wire
To Engine wiring
Connect for the Engine terminal
Green / Yellow wire
To Alternator wiring
Connect for the bracket
To Alternator wiring
Connect for the connector
Black wire
White wire
To Alternator wiring
Connect for the block terminal
To Engine wiring
Connect for the Engine terminal

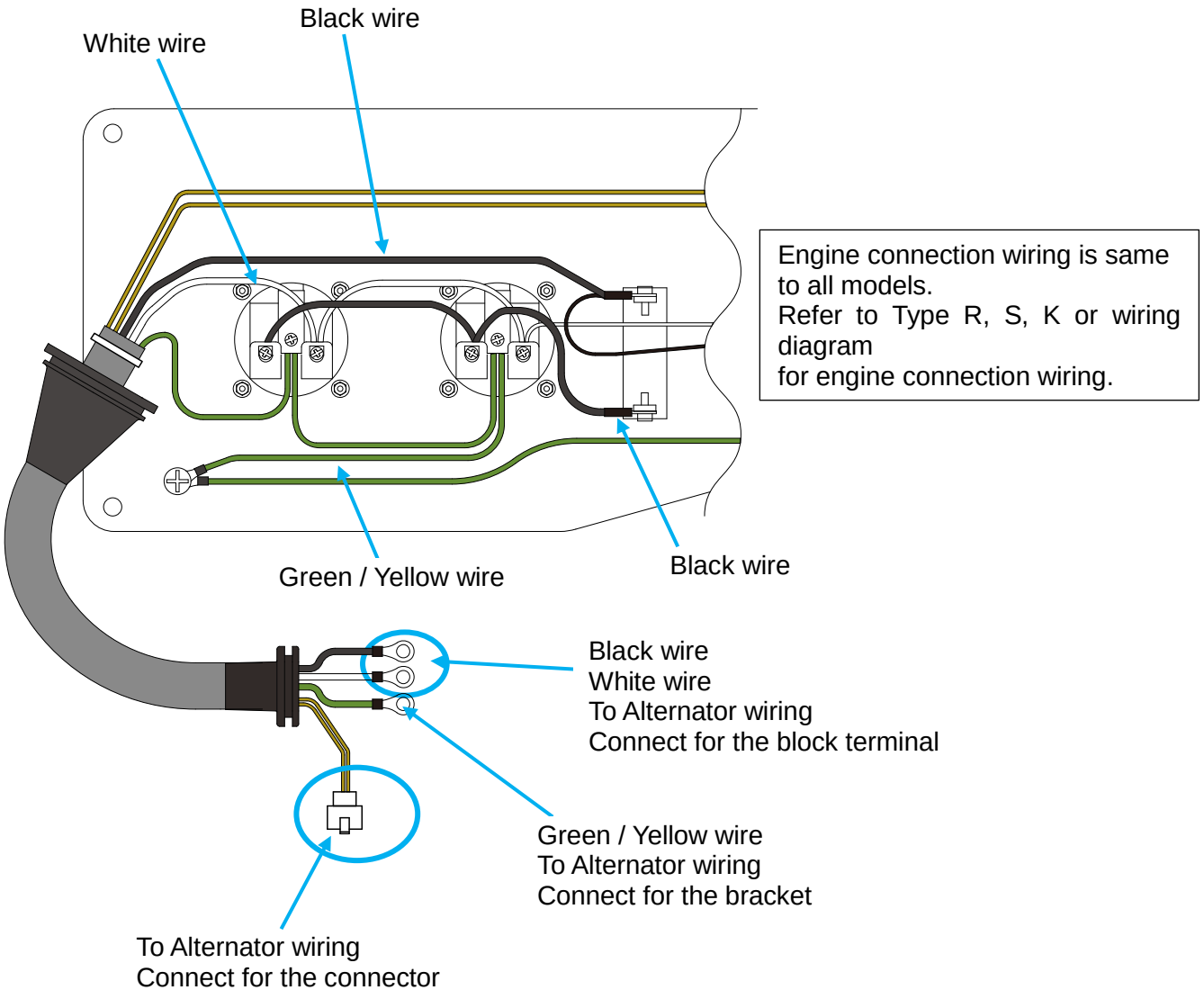
REH, CL Type


PILOT LAMP
VOLT METER
CIRCUIT BREAKER
ENGINE SW.
ON
OFF
START
FUSE
1A
FUSE
PILOT LAMP
VOLT METER
CIRCUIT BREAKER
AC220V
16A
16A
ON
OFF
OIL ALERT
TOTAL 22.7A
SWITCH
FUSE
Screw (M4-16) (2)
AC OUTPUT
GROUND TERMINAL

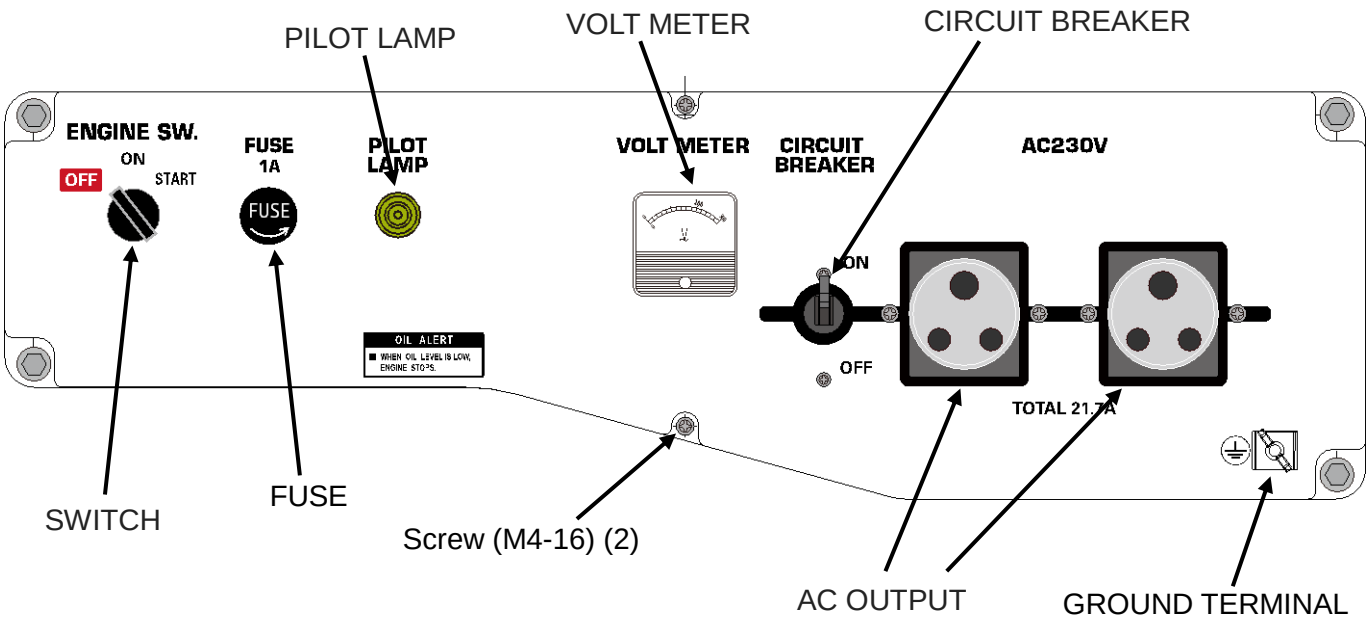

Black wire
White wire
To Alternator wiring
Connect for the block terminal
Green / Yellow wire
To Alternator wiring
Connect for the bracket
To Alternator wiring
Connect for the connector
Capacitor Assy
Black wire
Diode COMP.
White wire
Green / Yellow wire
Fuse (5A)
Diode Assy
To Engine wiring
Connect for the Engine terminal
Engine
connecting wire
To Engine wiring
Connect for the Engine terminal

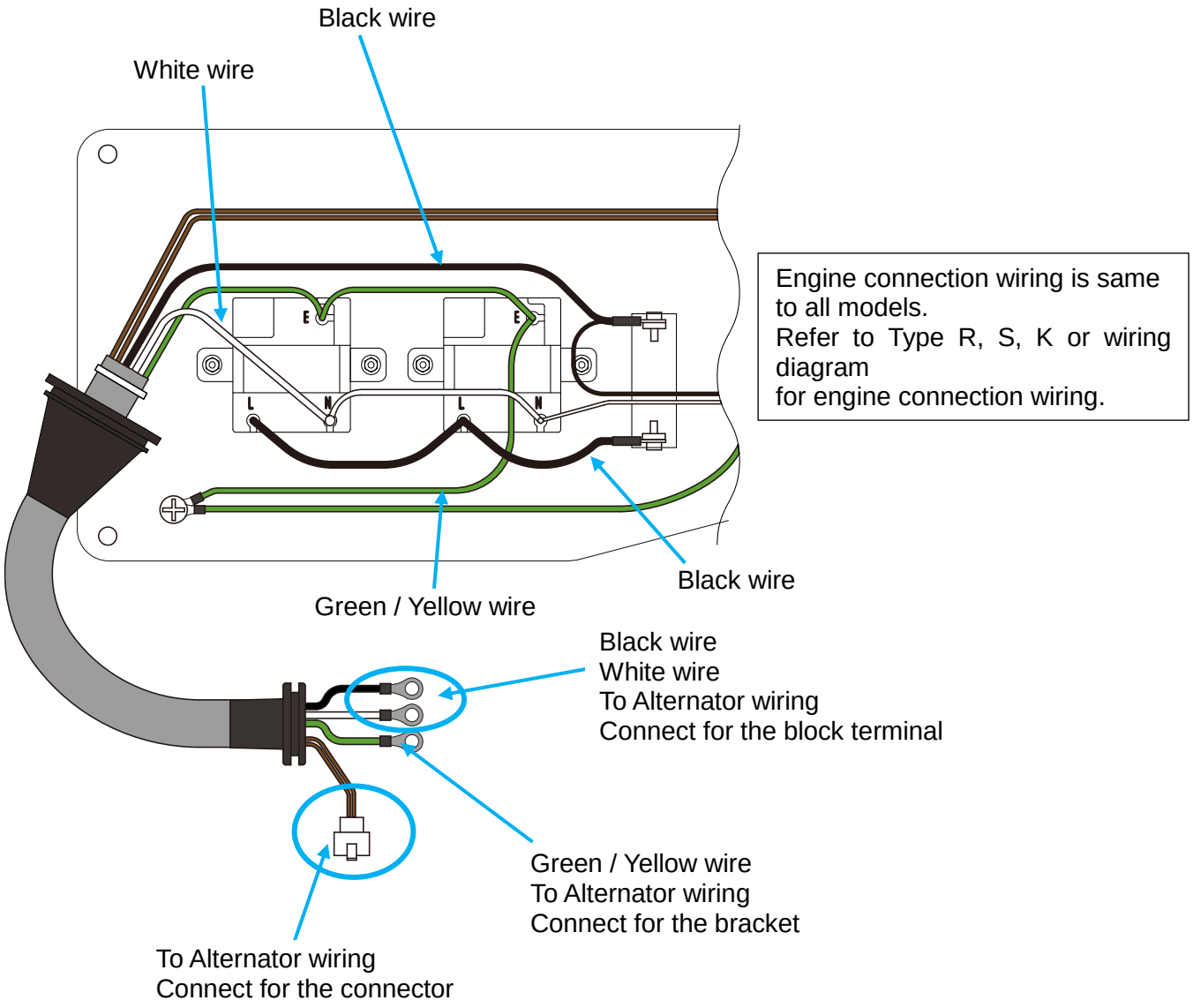
RK, MK, LS Type


PILOT LAMP
VOLT METER
CIRCUIT BREAKER
ENGINE SW.
ON
OFF
START
FUSE
1A
FUSE
PILOT
LAMP
VOLT METER
CIRCUIT
BREAKER
AC220V
13A
13A
ON
OFF
TOTAL 22.7A
OIL ALERT
WHEN OIL LEVEL IS LOW, ENGINE STOPS.
SWITCH
FUSE
Screw (M4-16) (2)
AC OUTPUT
GROUND TERMINAL

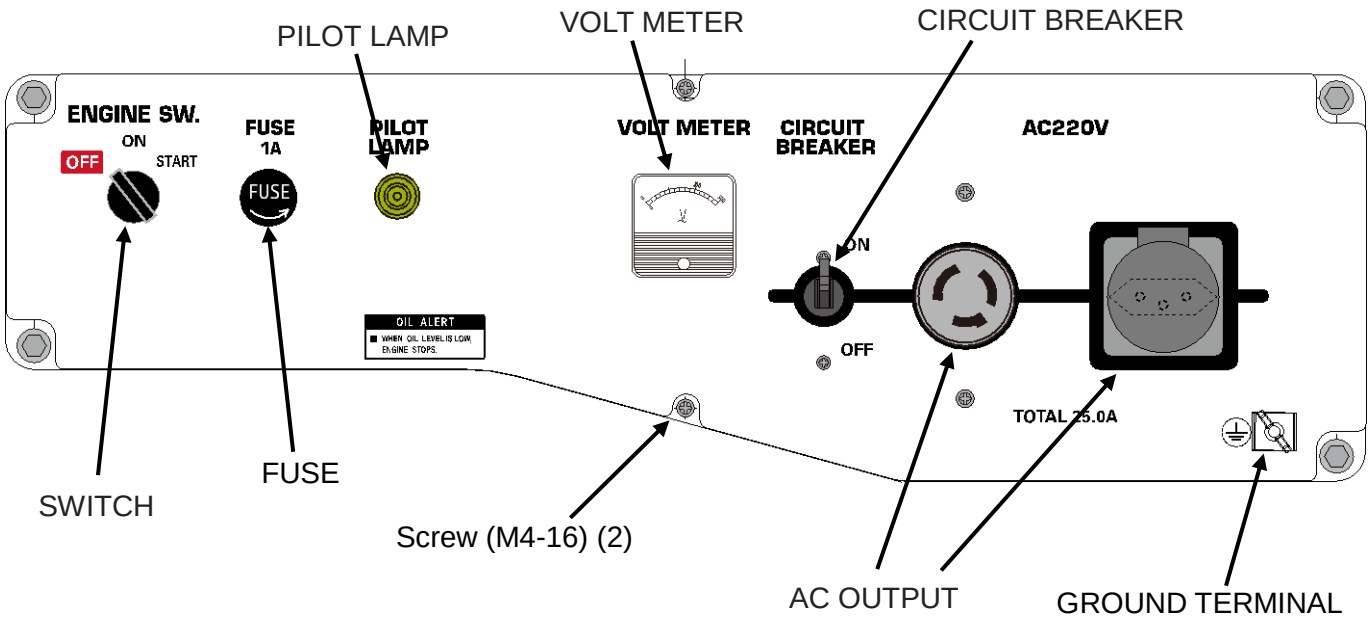

White wire
Black wire
Engine connection wiring is same to all models.
Refer to Type R, S, K or wiring diagram
for engine connection wiring.
Green / Yellow wire
Black wire
Black wire
White wire
To Alternator wiring
Connect for the block terminal
Green / Yellow wire
To Alternator wiring
Connect for the bracket
To Alternator wiring
Connect for the connector

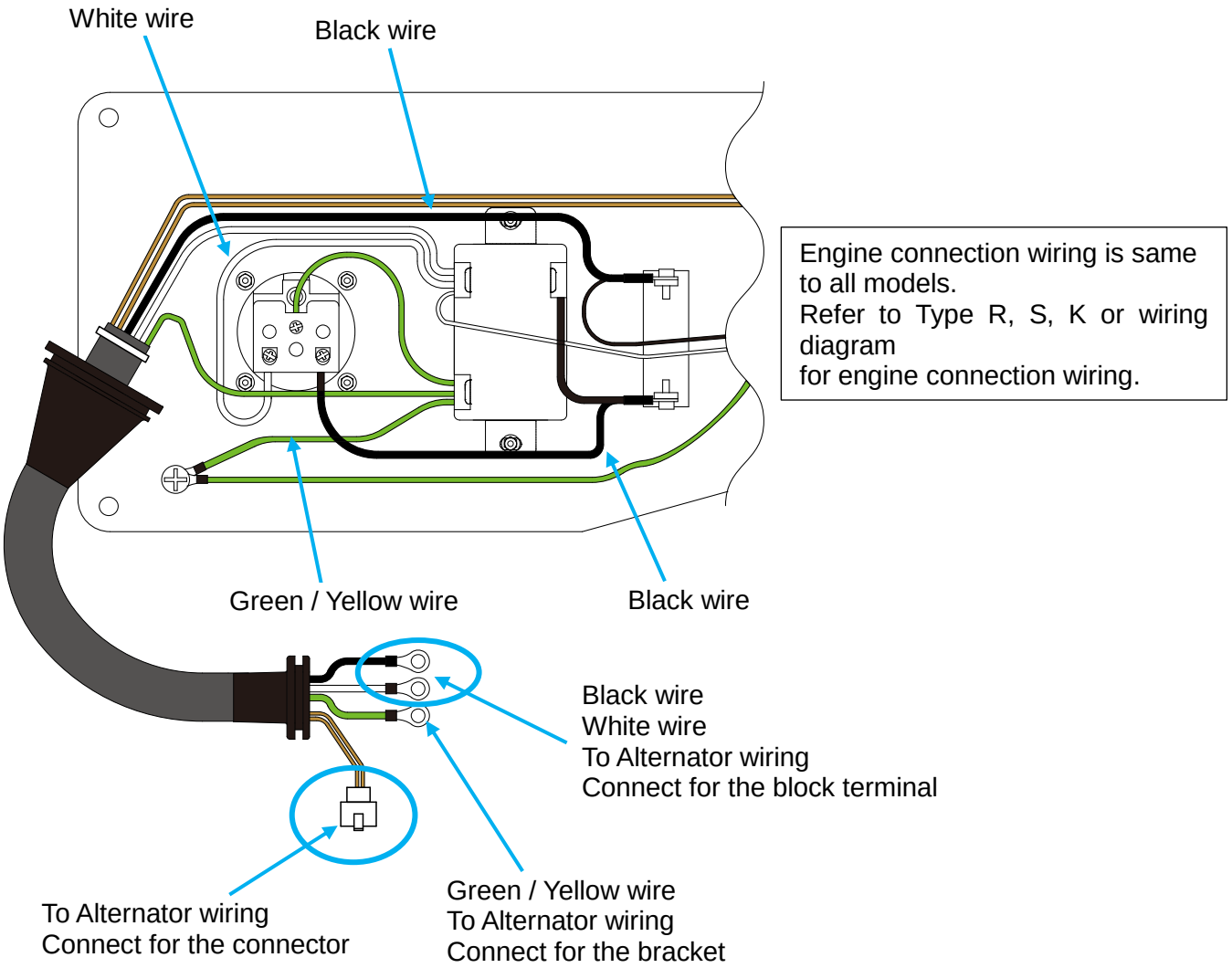
M Type


PILOT LAMP
VOLT METER
CIRCUIT BREAKER
ENGINE SW.
ON
START
OFF
FUSE
1A
FUSE
PILOT LAMP
VOLT METER
CIRCUIT BREAKER
AC230V
ON
OFF
OIL ALERT
TOTAL 21.7A
SWITCH
FUSE
Screw (M4-16) (2)
AC OUTPUT
GROUND TERMINAL


Black wire
White wire
E
L
N
Engine connection wiring is same to all models.
Refer to Type R, S, K or wiring diagram
for engine connection wiring.
Black wire
Green / Yellow wire
Black wire
White wire
To Alternator wiring
Connect for the block terminal
Green / Yellow wire
To Alternator wiring
Connect for the bracket
To Alternator wiring
Connect for the connector

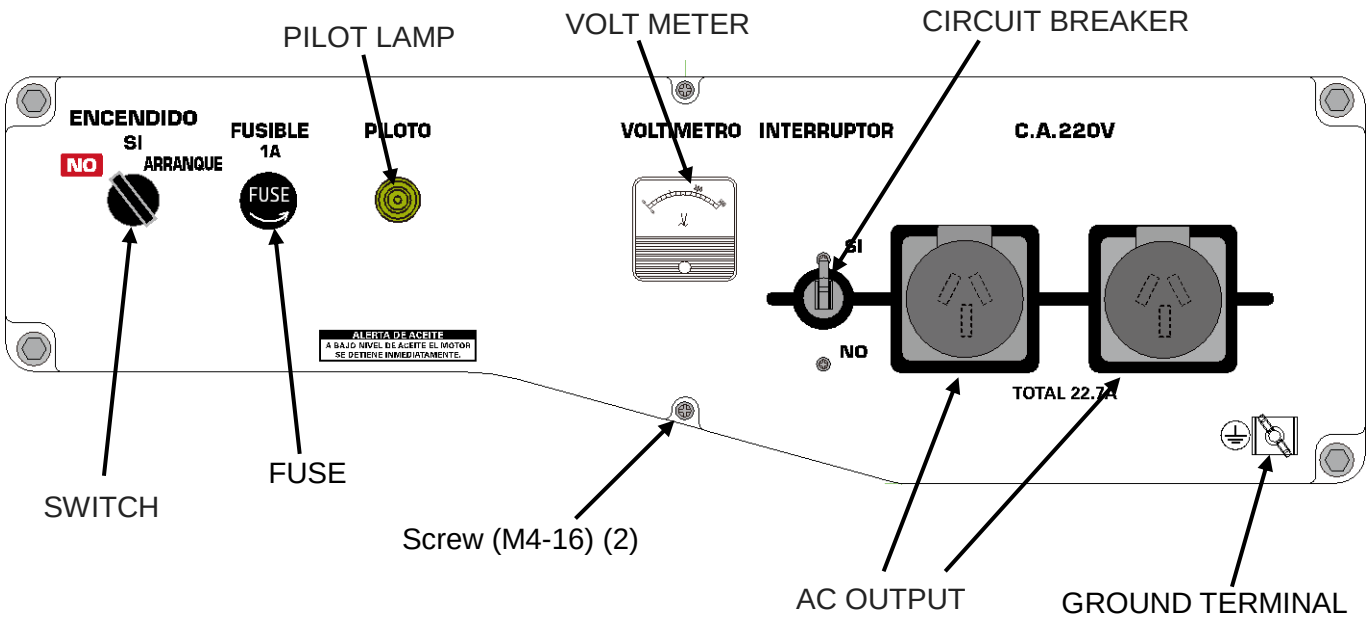
SB, LB Type

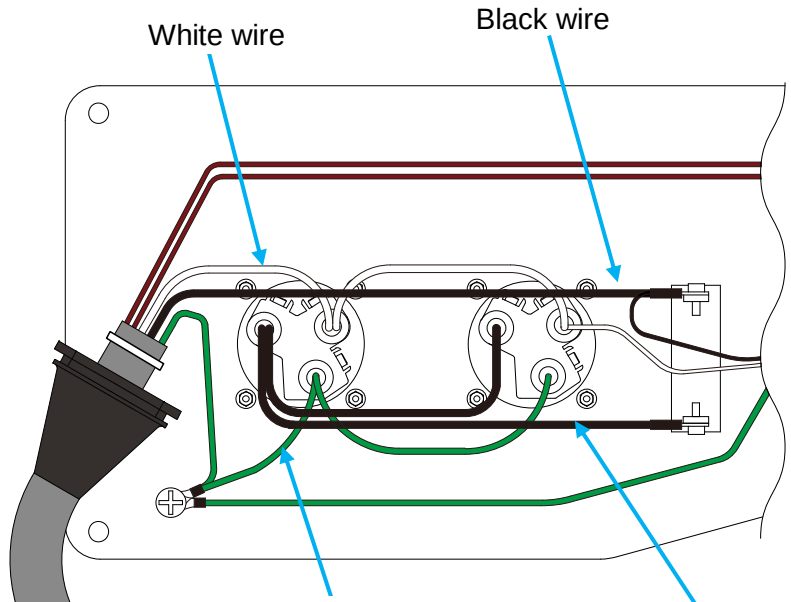




Engine connection wiring is same to all models.
Refer to Type R, S, K or wiring diagram
for engine connection wiring.

RA Type





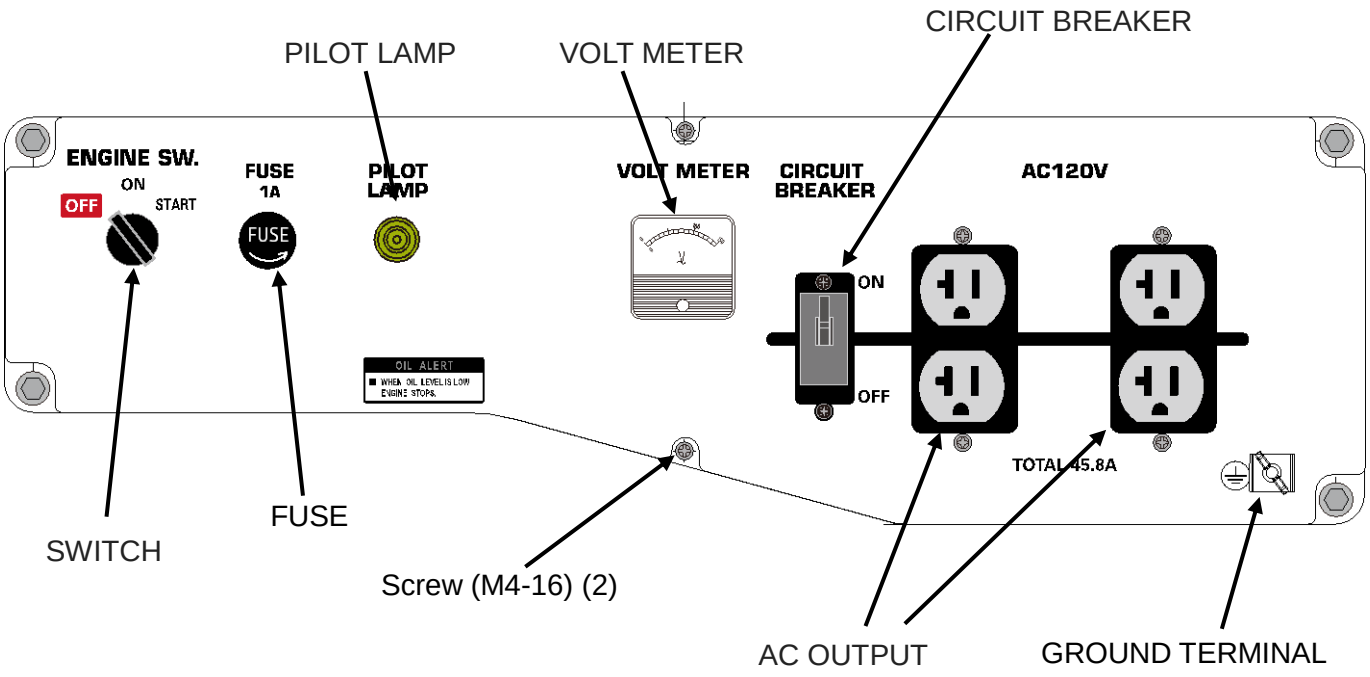
Engine connection wiring is same to all models.
Refer to Type R, S, K or wiring diagram
for engine connection wiring.

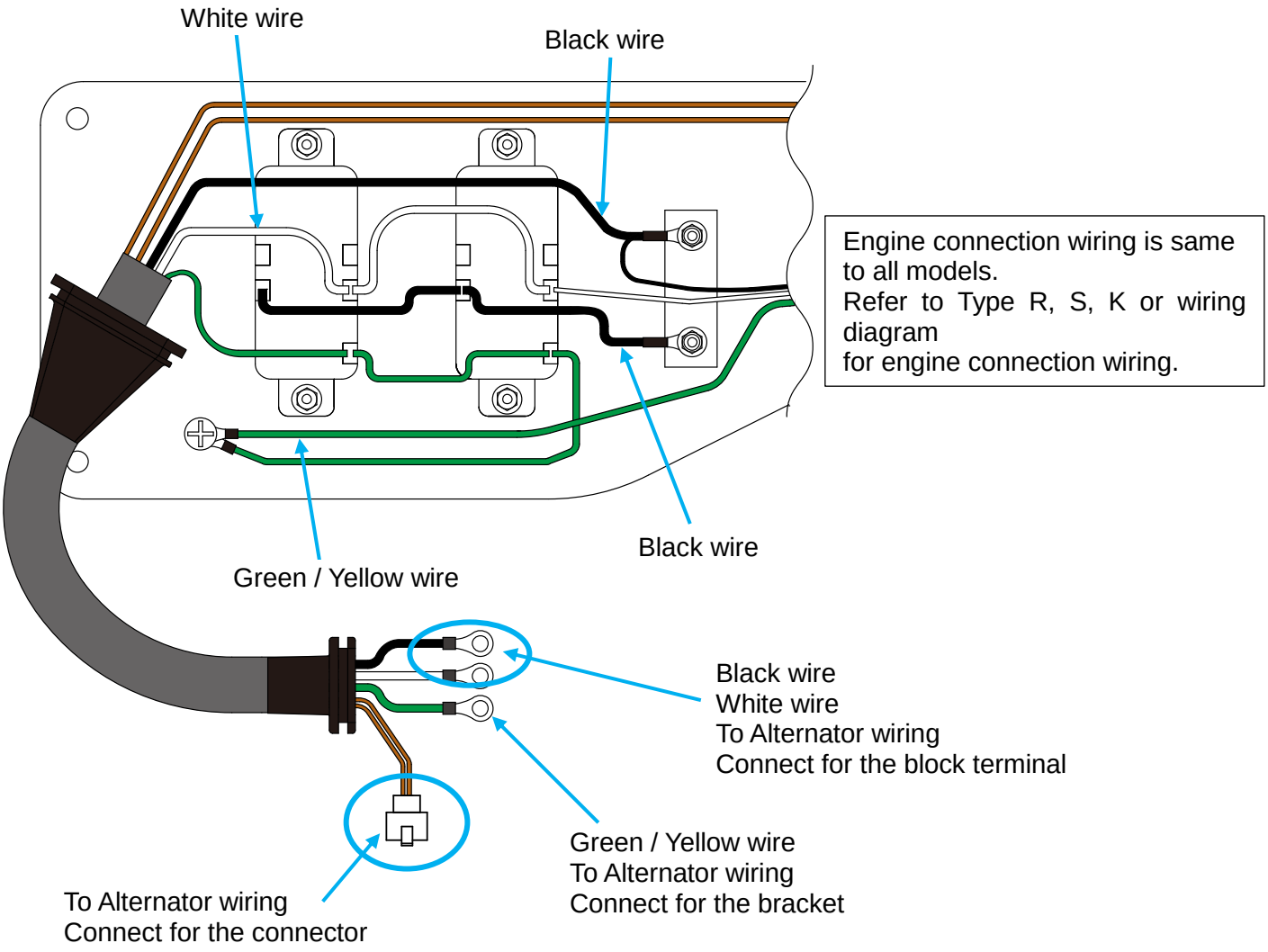
Black wire
White wire
To Alternator wiring
Connect for the block terminal

To Alternator wiring
Connect for the connector

Green / Yellow wire
To Alternator wiring
Connect for the bracket

L Type


CIRCUIT BREAKER
PILOT LAMP
VOLT METER
ENGINE SW.
ON
OFF
START
FUSE
1A
FUSE
PILOT LAMP
VOLT METER
CIRCUIT BREAKER
AC120V
ON
OFF
OIL ALERT
TOTAL 45.8A
SWITCH
FUSE
Screw (M4-16) (2)
AC OUTPUT
GROUND TERMINAL


White wire
Black wire
Engine connection wiring is same to all models.
Refer to Type R, S, K or wiring diagram
for engine connection wiring.
Green / Yellow wire
Black wire
Black wire
White wire
To Alternator wiring
Connect for the block terminal
Green / Yellow wire
To Alternator wiring
Connect for the bracket
To Alternator wiring
Connect for the connector

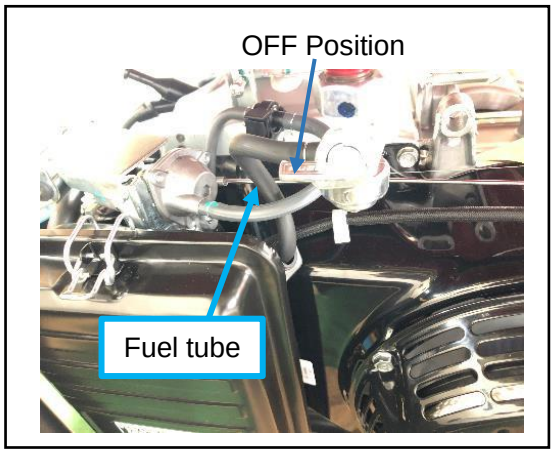
3.2.2 FUEL TANK

⚠ WARNING

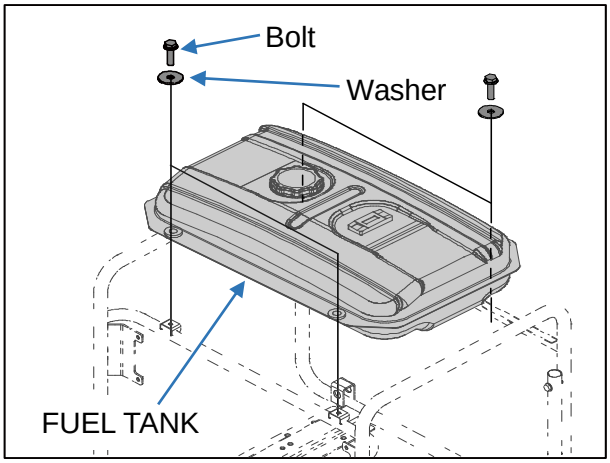
Gasoline is highly flammable explosive.You can be burned or seriously injured when handing fuel.

- Keep heat, sparks, and flame away.
- Handle fuel only outdoors.
- Wipe up spills immediately.

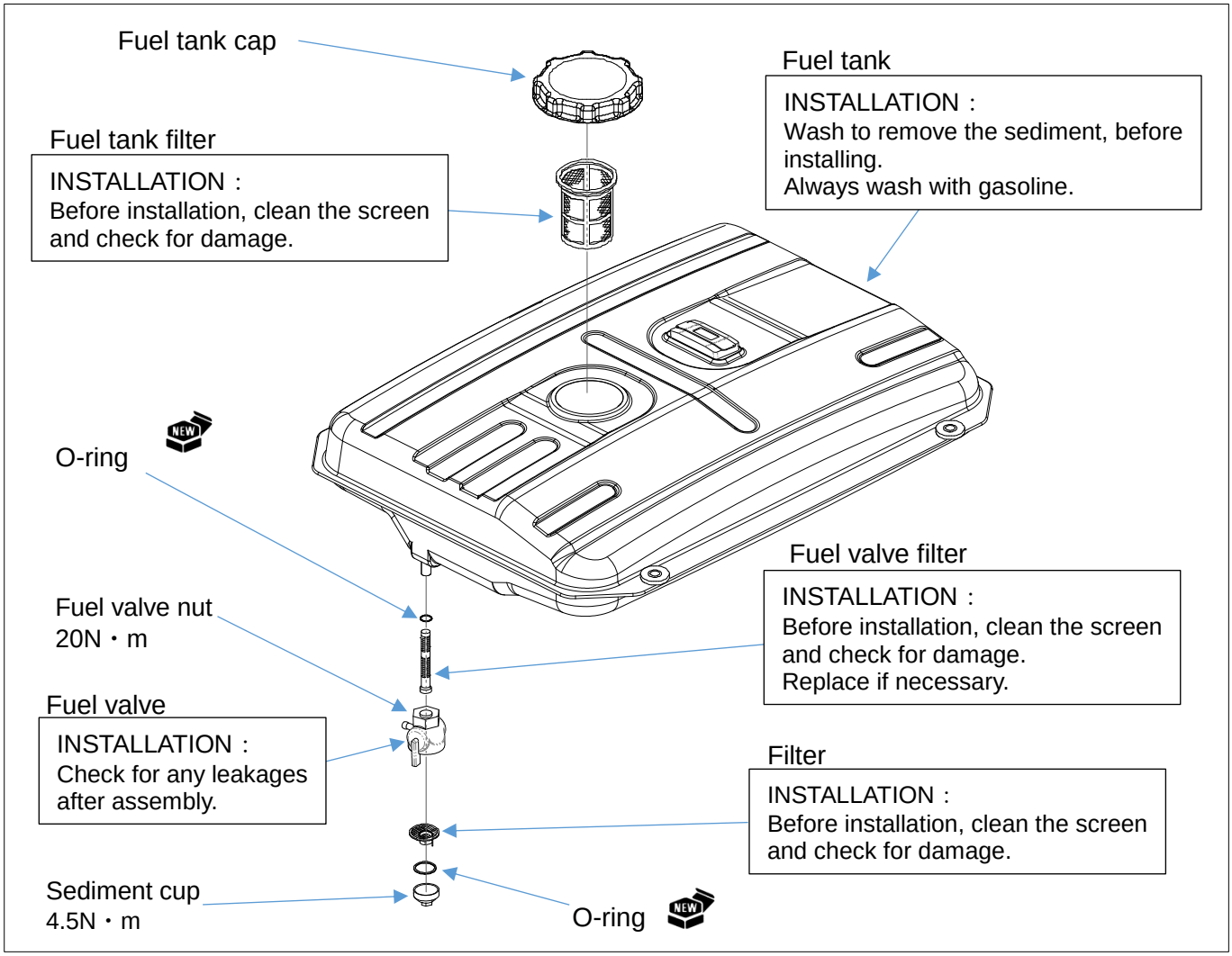
1) Shut the fuel valve and discharge fuel from carburetor.



2) Remove fuel tube from the fuel valve.



3) Remove the fuel tank.
Bolt (M6-25L) (4)
Washer (M6) (4)

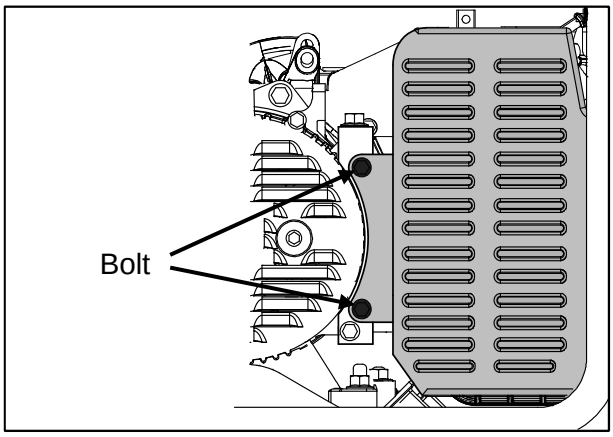


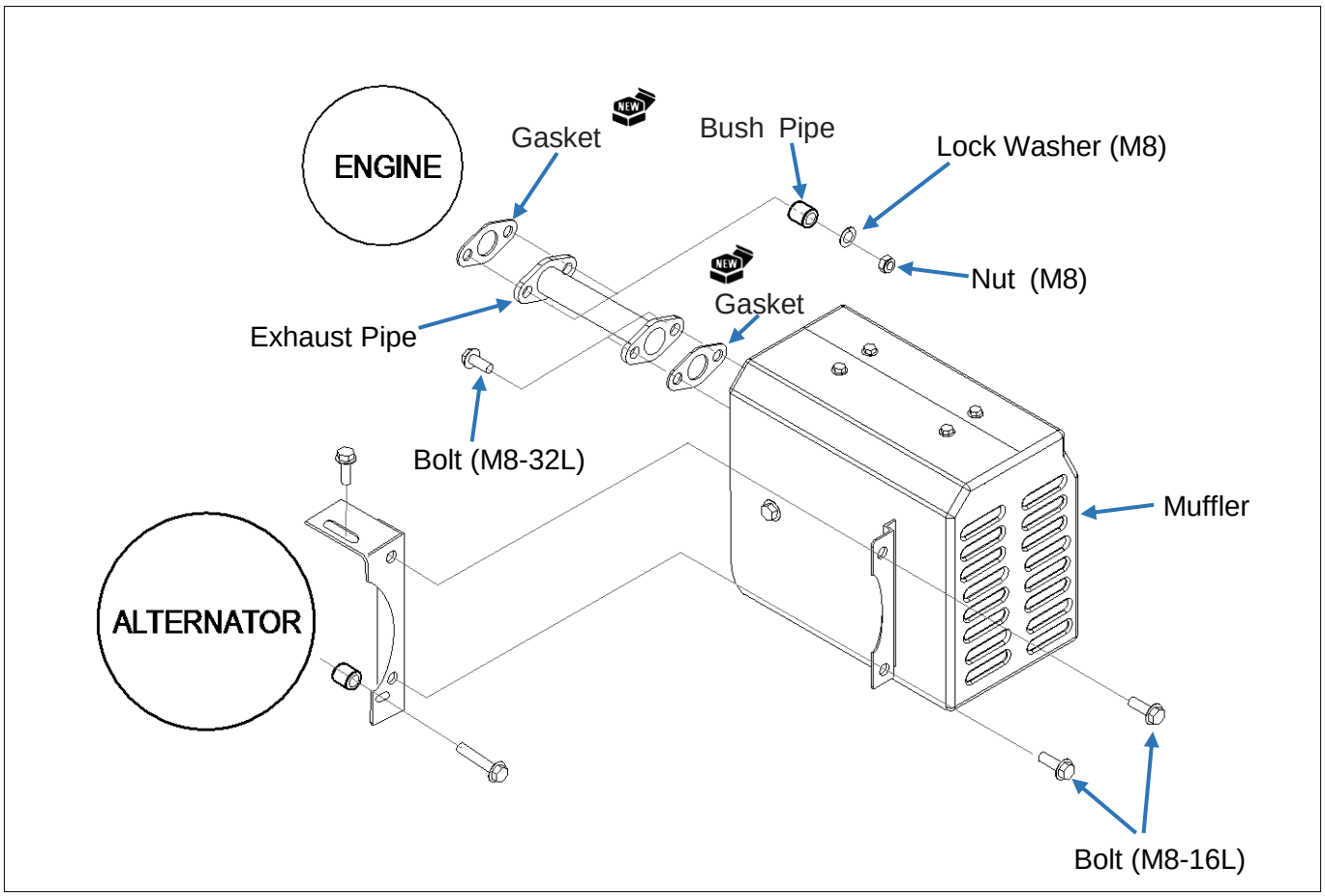
3.2.3 MUFFLER

⚠ CAUTION

The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. Allow it to cool before proceeding.

1) Remove the Muffler from the muffler bracket.
   Bolt (M8-16L) (2)



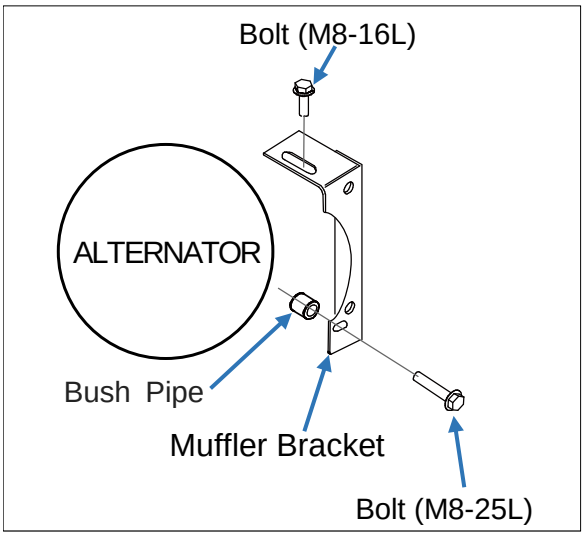


2) Remove the muffler from the exhaust pipe.
   Bolt (M8-32L) (2)

   Gasket can not be reused.
   Replace with new.

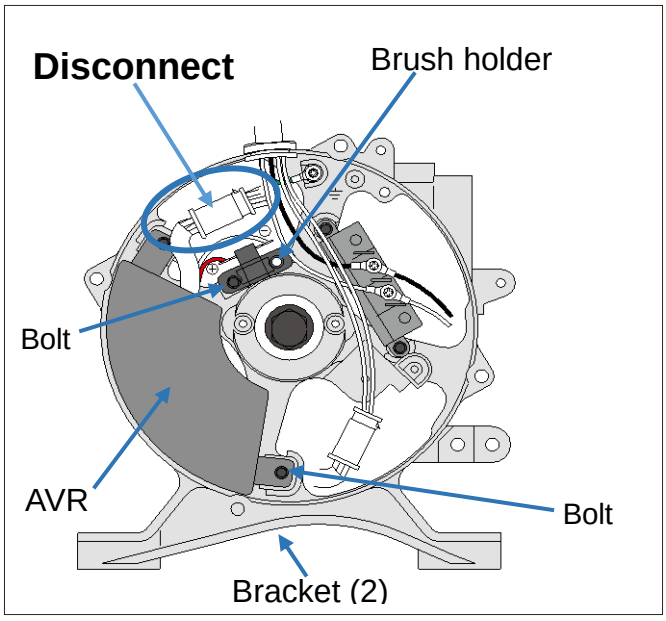
3) Remove the exhaust pipe from the engine.
   Nut (M8) (2)
   Lock Washer (M8) (2)

4) Remove the Muffler Bracket.
Bolt (M8-16L) (1)
Bolt (M8-25L) (1)
Bush pipe



3.2.4 ALTERNATOR

1) Remove the wiring from the alternator.
   Disconnect the AVR unit connector.



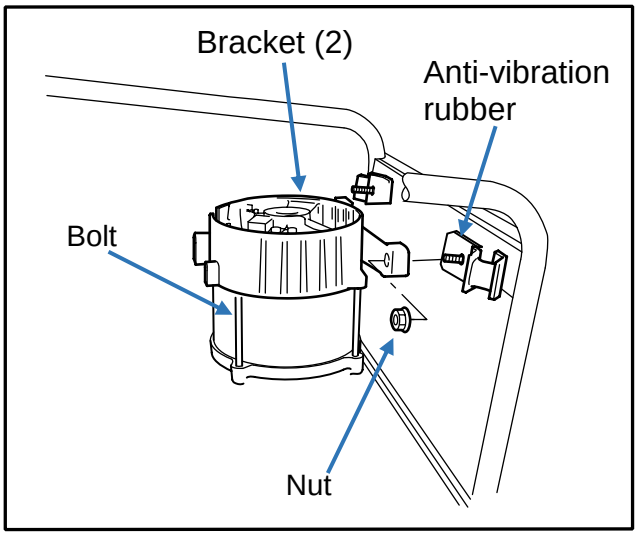
2) Remove the AVR unit from bracket (2).
   AVR unit mount bolt (M5-16L) (2)

   Remove the brush holder from bracket (2)
   Brush holder mount bolt (M5-16L) (1)

3) Set the generator set with the bracket (2) upwards.

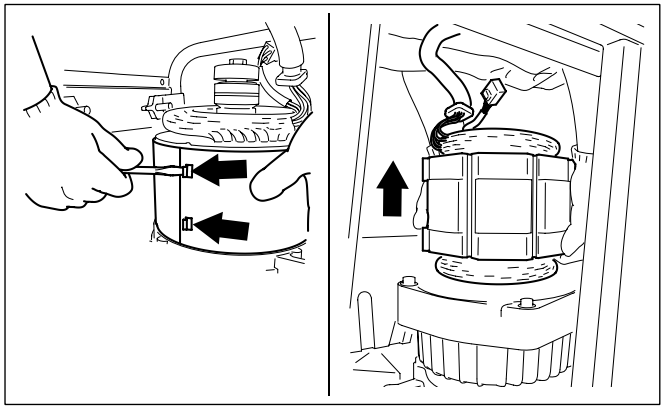
4) Remove the nut fixing bracket (2) onto the mount base with anti-vibration rubber.
   Nut (M10) (2).

5) Remove the bracket (1).
   Bolt (M6-165L) (4)



6) Take out stator cover with crows (2 pcs) raised up by using screw driver.

7) Remove the stator.

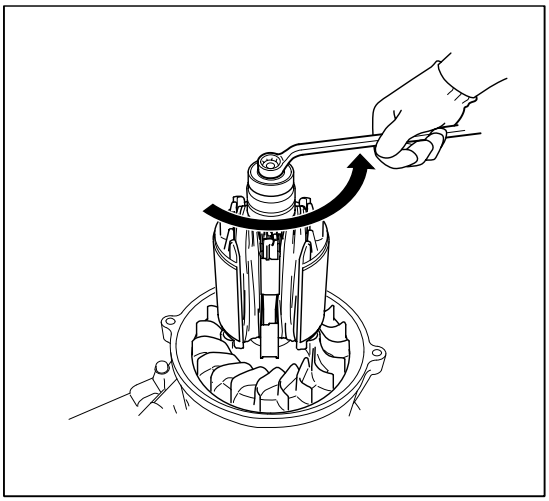


NOTICE

The stator is heavy.

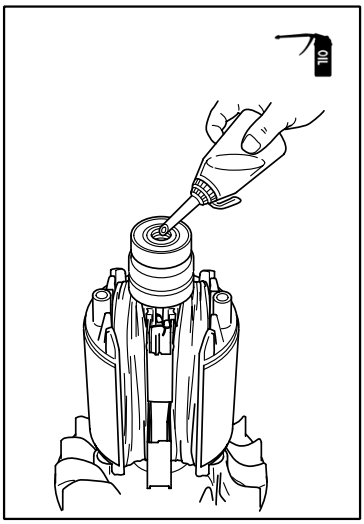
Be careful do not hit the coil of the stator to the rotor.

8) Remove the Generator rotor bolt of the rotor.
Generator rotor bolt (M10 × 275L) (1)



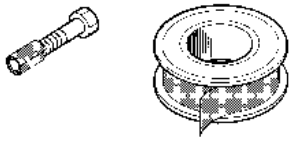
Hold the rotor using a commercially available strap wrench.
Loosen the Generator rotor bolt.

9) Use a bolt and oil as a tool for pulling out rotor in the following procedures:

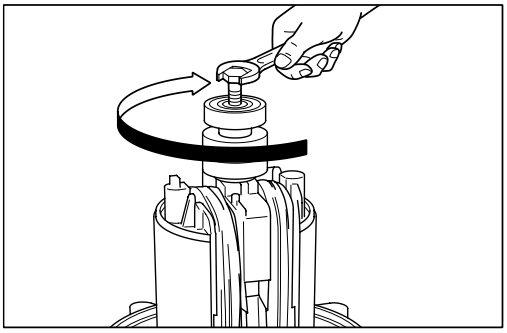


Pour engine oil into the center hole of rotor shaft. Fill with oil to the shaft end.
Size: M12 × 1.75

Apply a few turns of seal tape around the tip of the bolt.
Use commercially available 0.1mm thick and oil resistant seal tape.



Screw the bolt into the thread of the rotor shaft.



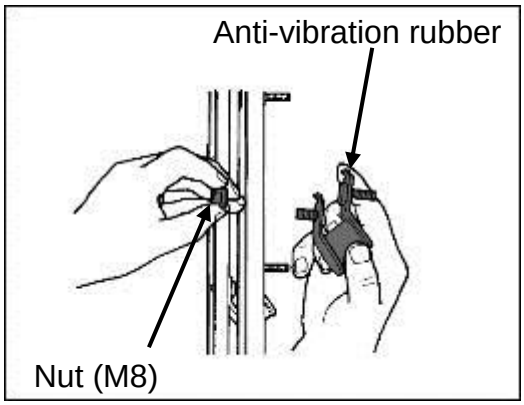
Torque the bolt using a socket wrench until the rotor comes off loose.

* The hydraulic pressure inside the rotor shaft takes apart the rotor from the engine shaft.

3-3. INSTALLATION

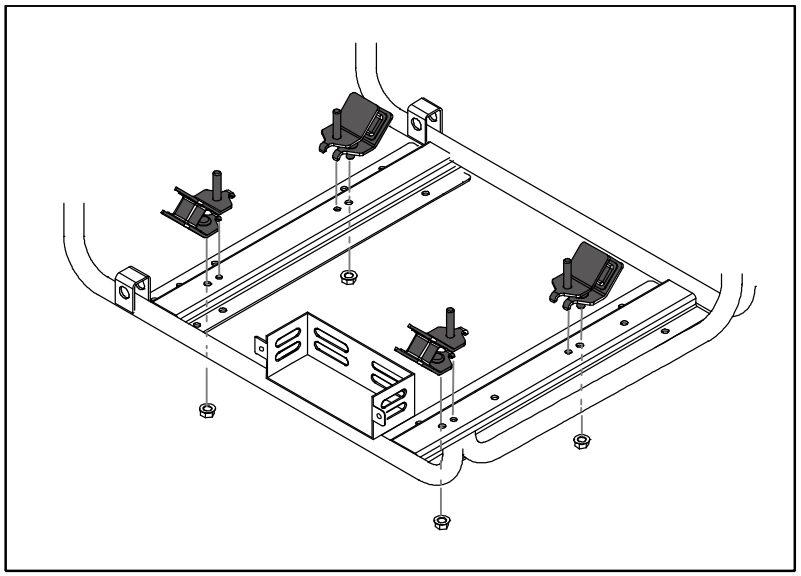
3.3.1. ENGINE AND FRAME

1) Install the anti-vibration rubbers to the frame.
Insert the setting tongue of anti-vibration rubbers into the hole on the frame and tighten the nut from the bottom of the frame.



Nut (M8) (4)

Tightening torque: 15.0 N•m



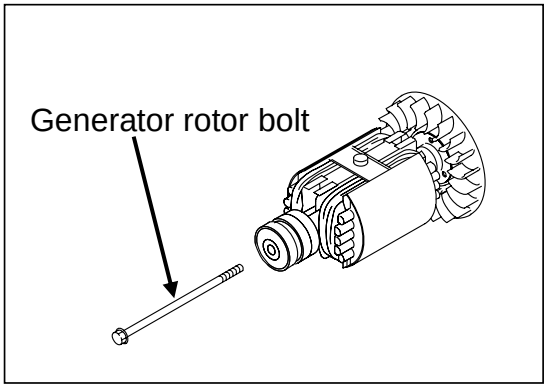
2) Install the engine into the frame from the side of it.
Tighten the nuts over the anti-vibration rubber bolts to fix.

Nut (M10) (2)

Tightening torque: 27.0 N•m

3.3.2. ROTOR

1) Wipe off oil, grease and dust from the tapered portion of engine shaft and matching tapered hole of rotor shaft.



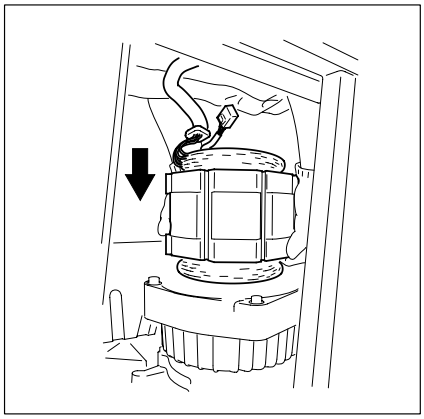
2) Mount the rotor to the engine shaft.
Tighten the Generator rotor bolt.

Generator rotor bolt (M10 × 275L) (1)

Tightening torque: 45.0 N•m

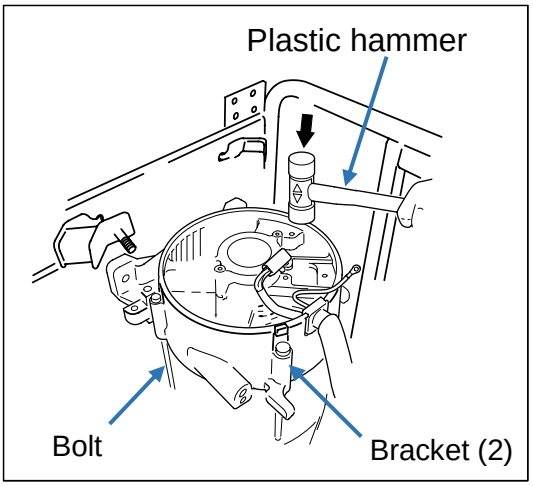
3.3.3. STATOR

1) Put the stator in the engine.



3.3.4. BRACKET (2)

1) Put the bracket (2) over the rotor.
   Pull out the stator wirings through the opening of the bracket (2).



NOTICE

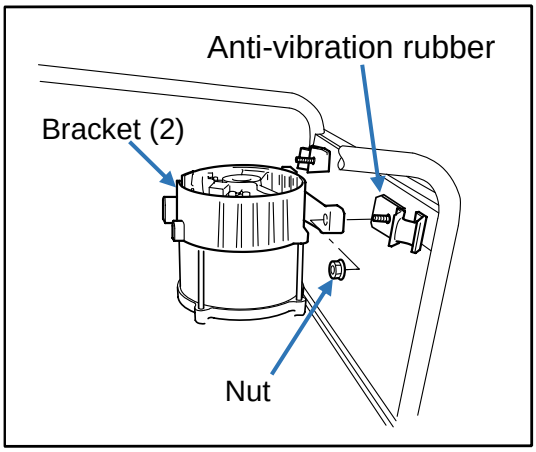
Be careful not to give cuts to wires when pulling them out from the bracket (2).

2) Tap on the rear cover evenly with a plastic hammer to press the rotor bearing into the bracket (2).

3) Fix the rear cover with bolts.

   Bolt (M6-165L) (4)

   Tightening torque: 7.0 N•m



NOTICE

Tighten the bolts evenly and in turns.

4) Install the bracket (2) into the anti-vibration rubber.

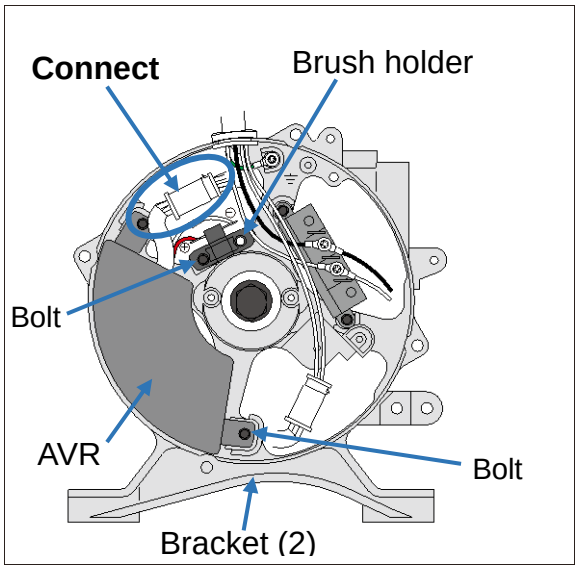
   Nut (M10) (2)

   Tightening torque: 27.0 N•m

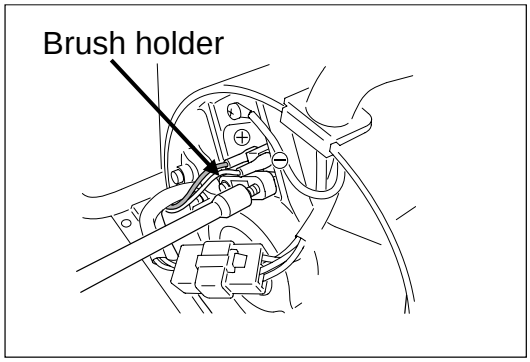
5) Install the connectors to the brush holder and AVR unit onto the bracket (2).
Connect the AVR unit connector.

AVR unit mount bolt (M5-16L) (2)
Brush holder mount bolt (M5-16L) (1)

Tightening torque: 3.0 N•m



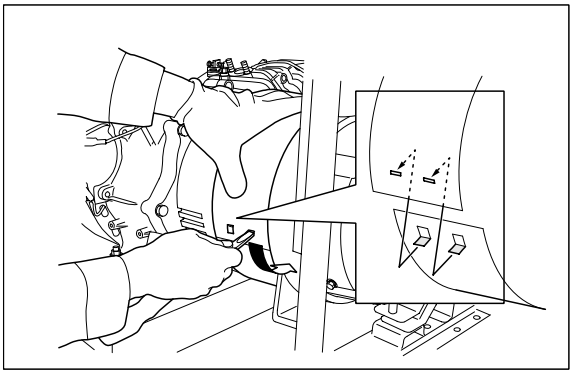
Push the brush holders so that the brushes will be perpendicular to the slip rings, and tighten the brush holder mount bolt.



NOTICE

If the brush is installed oblique to the slip ring, there is possibility that the brush holder can break when the screw is tightened: or the brush may break when generator of started.
Make this process carefully.

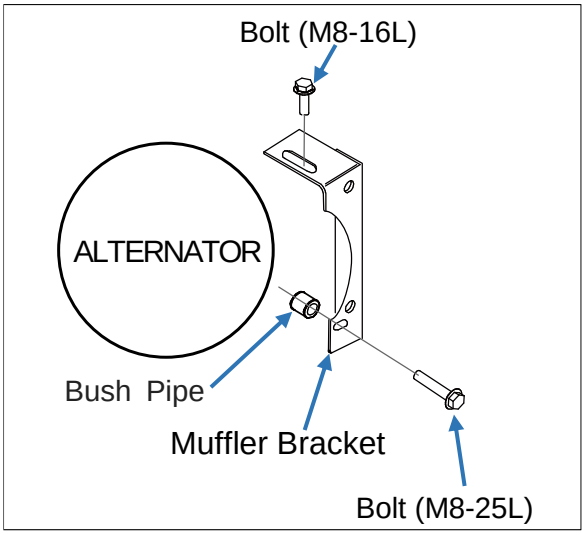
6) Set stator cover with the crow inserted into slit and bent (2 pcs).
Insert the bend into the slit and caulking with commercially available pliers.



3.3.5. MUFFLER

1) Install the Muffler Bracket.
   Bolt (M8-16L) (1)
   Bolt (M8-25L) (1)
   Bush pipe (1)

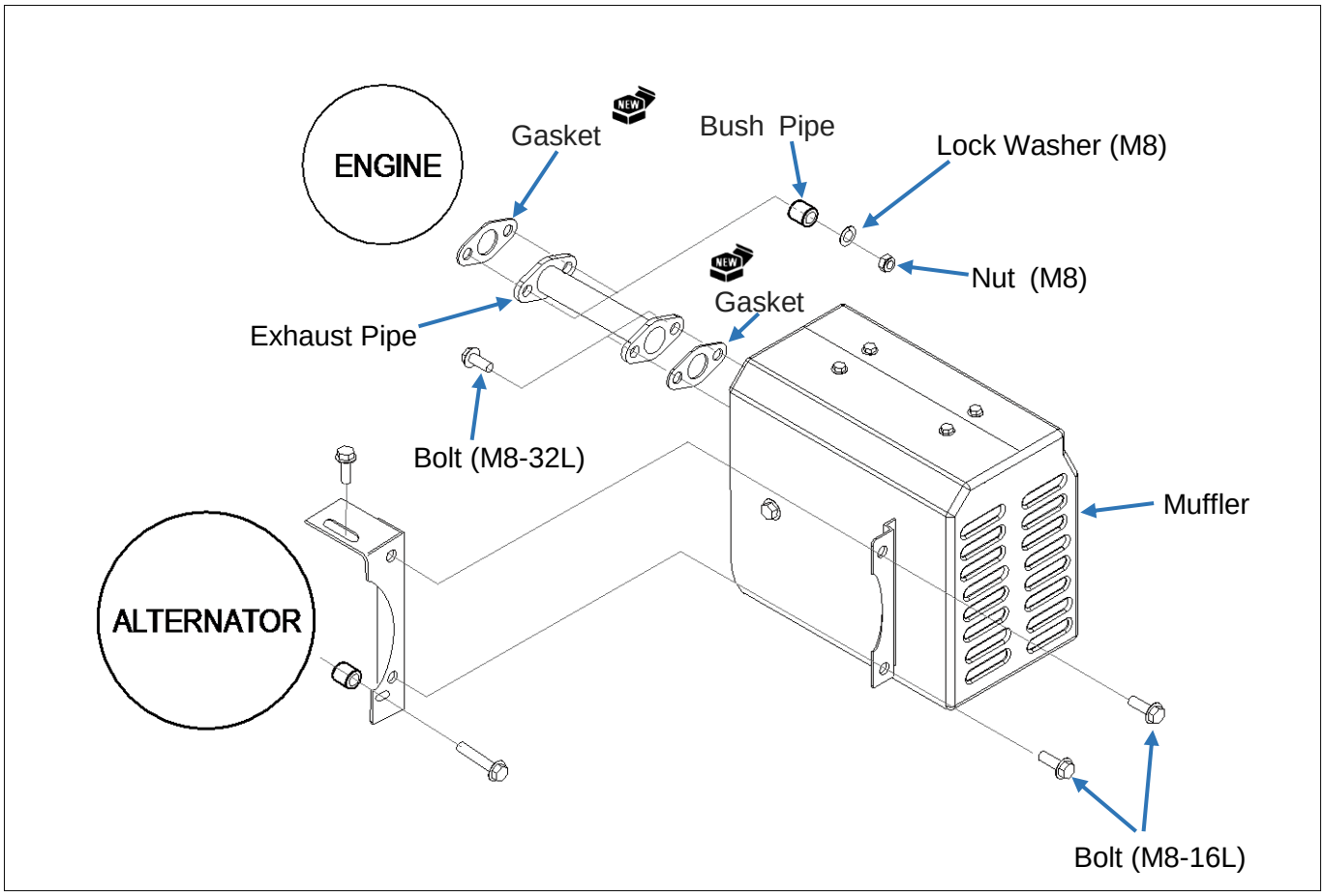
Tightening torque: 15.0 N•m



2) Install the exhaust pipe from the engine.
   Mount the Exhaust pipe and the gasket on the cylinder head.
   Nut (M8) (2)
   Lock Washer (M8) (2)
   Bush pipe (2)

   Gasket can not be reused. Replace with new.

Tightening torque: 22.0 N•m



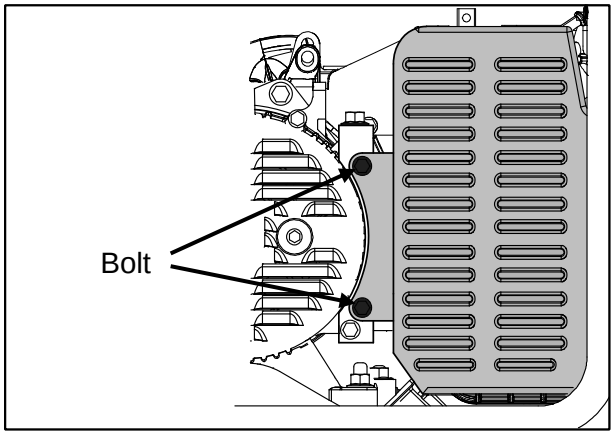
3) Install the muffler from the exhaust pipe.
Mount the Exhaust pipe and the gasket on the muffler.
Bolt (M8-32L) (2)
Lock Washer (M8) (2)

Gasket can not be reused. Replace with new.

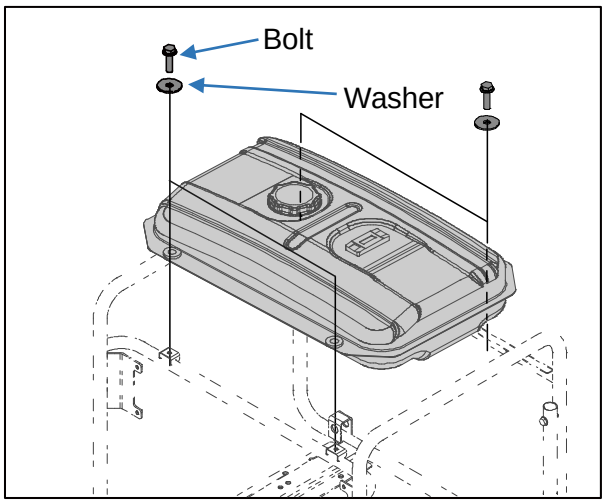
Tightening torque: 22.0 N•m

4) Install the Muffler from the muffler bracket.
Bolt (M8-16L) (2)

Tightening torque: 15.0 N•m



3.3.6 FUEL TANK



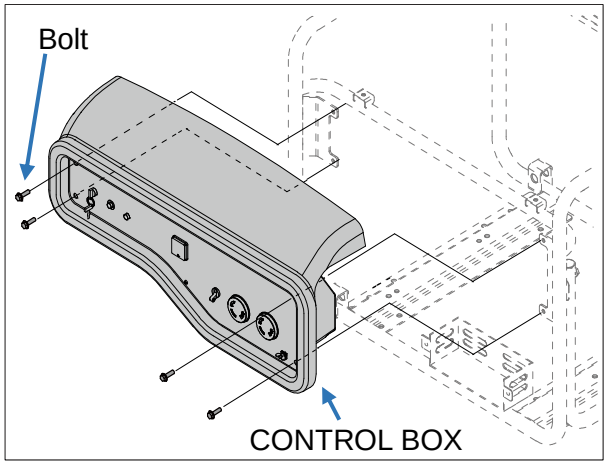
1) Install the fuel tank.

2) Install the rubber pipe from the fuel valve.

Bolt (M6-25L) (4)
Washer (M6) (4)

Tightening torque: 7.0 N•m

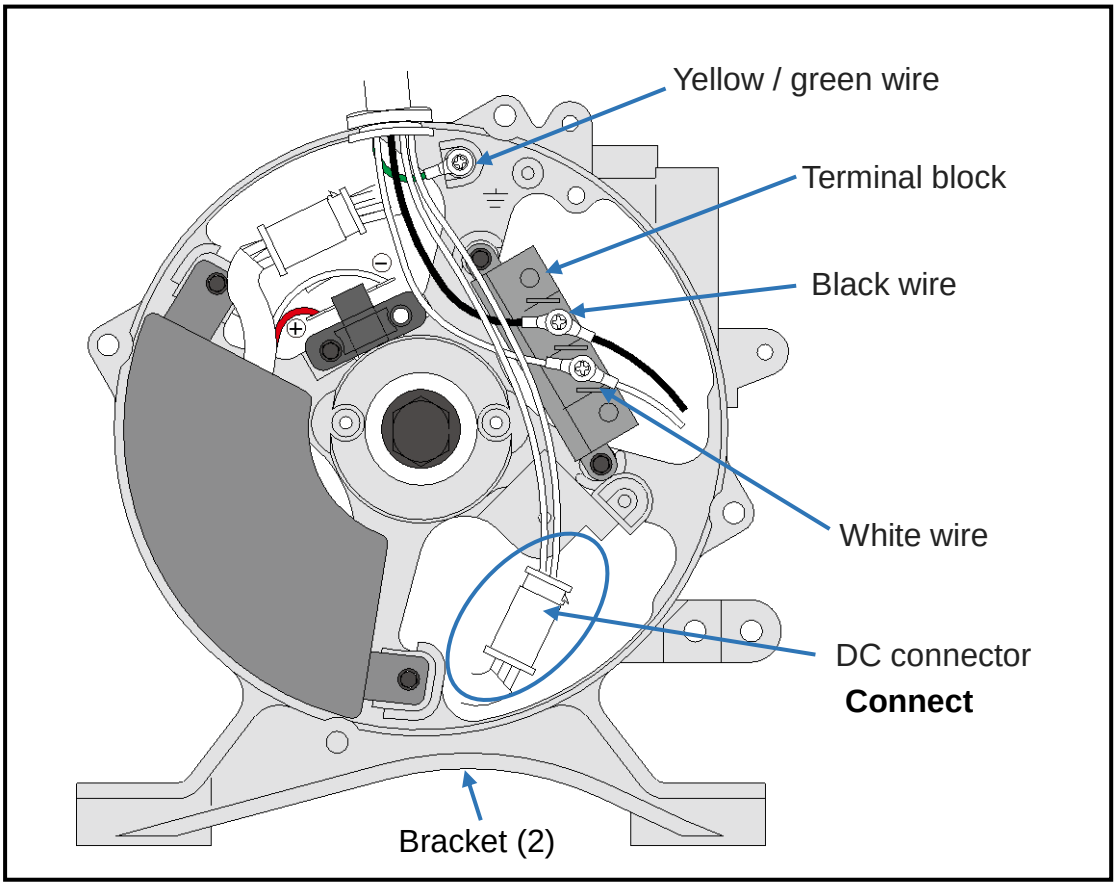
3.3.7 CONTROL PANEL AND CONTROL BOX



1) Install the control panel.
Bolt (M6-25L) (4)

Tightening torque: 7.0 N•m

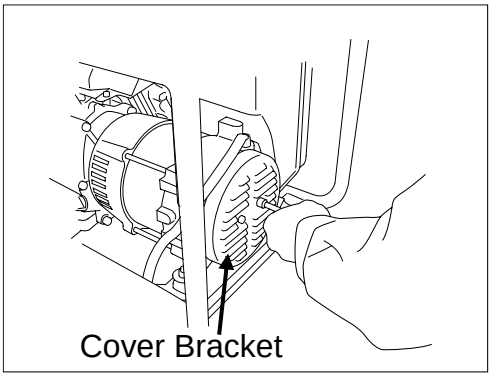
2) Install the wiring from the control panel to the alternator.
3) Install the black wire and white wire to terminal block.
4) Install the yellow/green wire to bracket (2).
5) Connect the DC connector to stator connector.



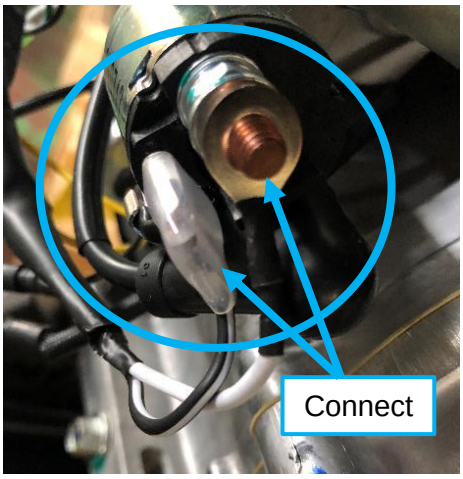
6) Install the cover bracket to the bracket (1).

Bolt (M5-12L) (2)

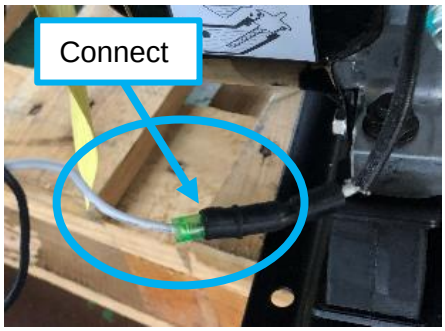
Tightening torque: 4.0 N•m

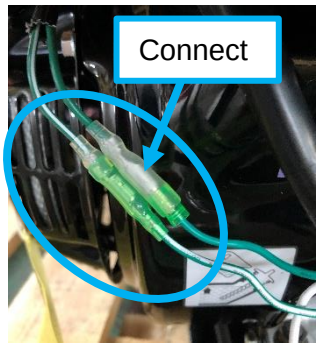


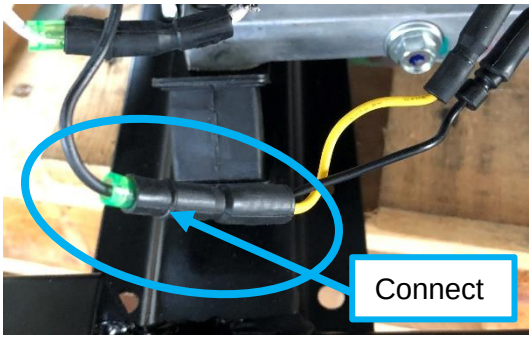
7) Connect the cell motor wiring.



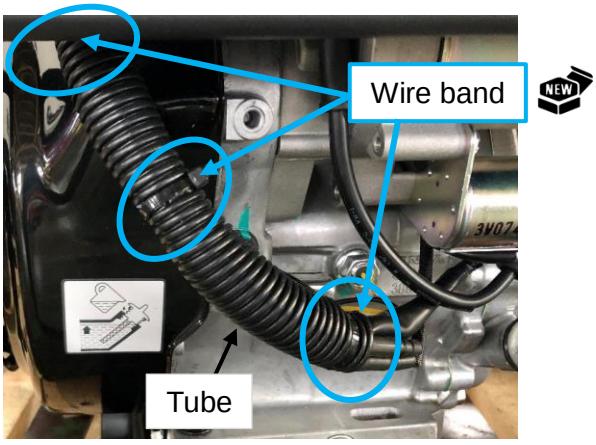
8) Connect the engine wiring.







9) Cover the tube.
Fix with wire band.
Wire band can not be reused. Replace with new.



4. TROUBLE SHOOTING

ALTERNATOR VIEW

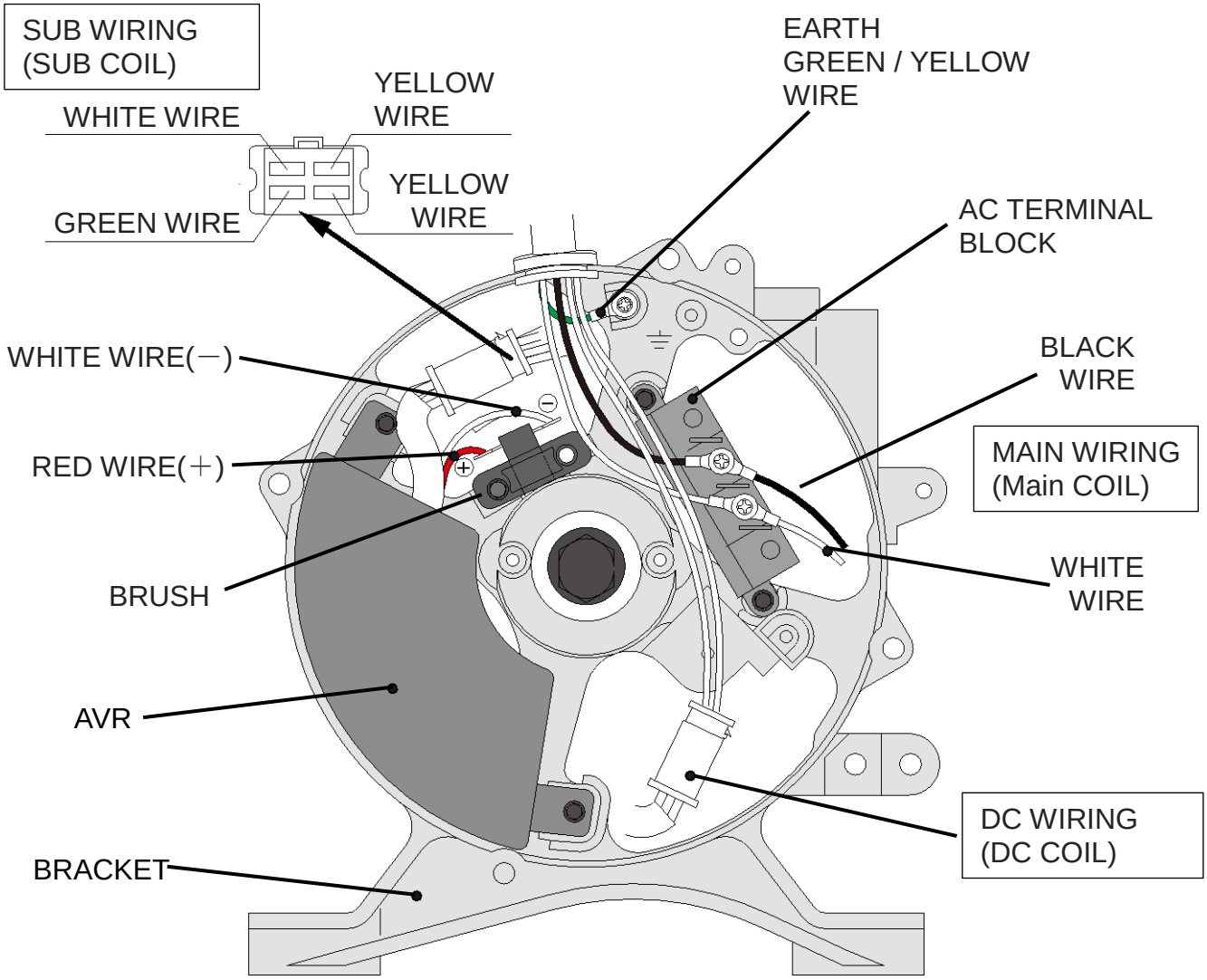
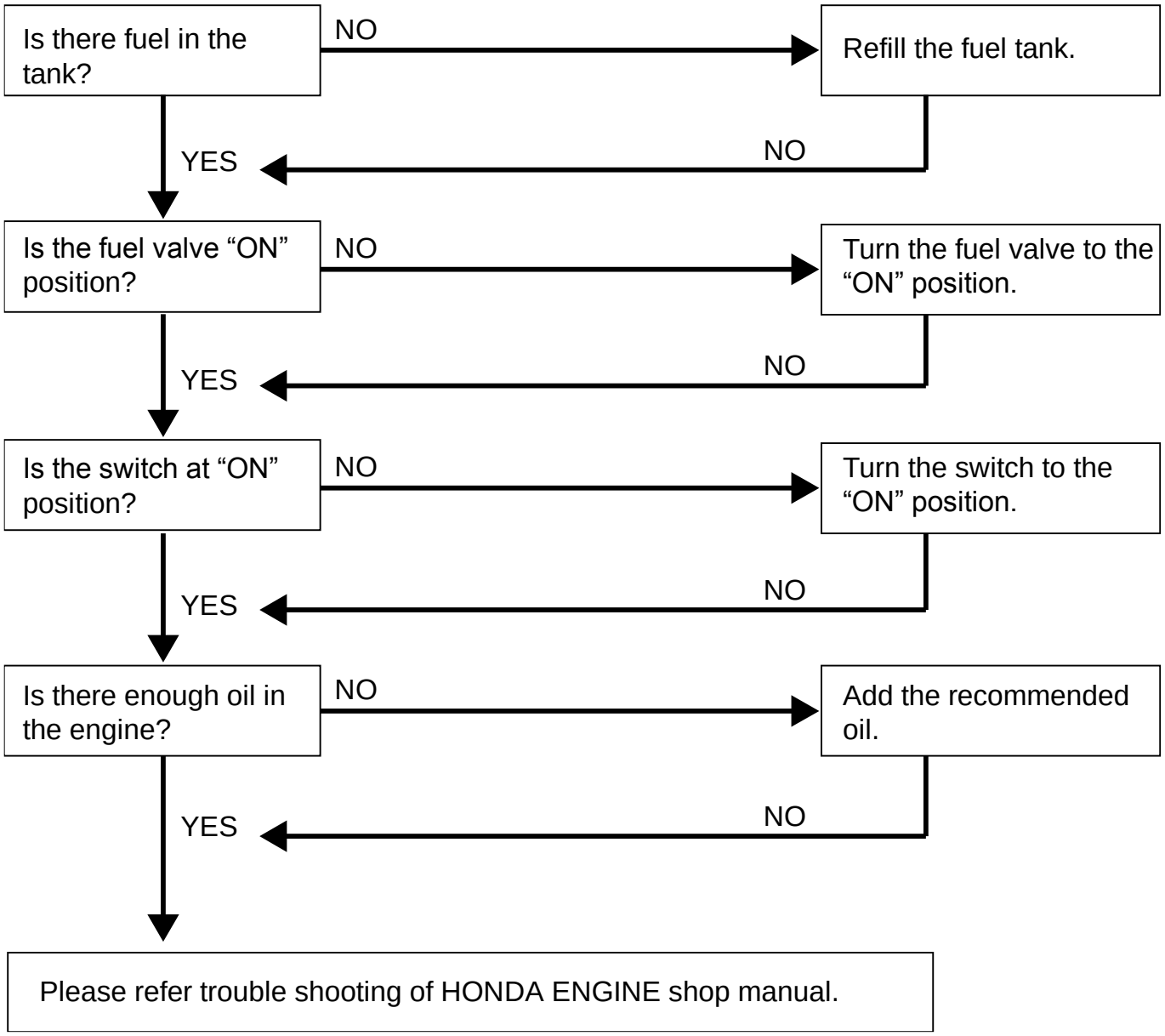


Fig 5-1 ALTERNATOR RESISTANCE TABLE

Item	EZ6500CXS					
	Standard level Resistance (Ω)					Limits
Type	R, REH, RK, RA, CL	M, K, MK	L, LB	S, SB	LS	
Rated Voltage【V】	220	230	120	220	230	
Frequency 【Hz】	50		60			
Main coil (Black - White)	0.565			0.450		±10%
Sub coil (Yellow - Yellow)	1.550			1.500		±10%
Rotor coil	43					±10%

(Ω)

4-1. ENGINE DOESN'T START.



4-2. ELECTRIC STARTER DOES NOT OPERATE.

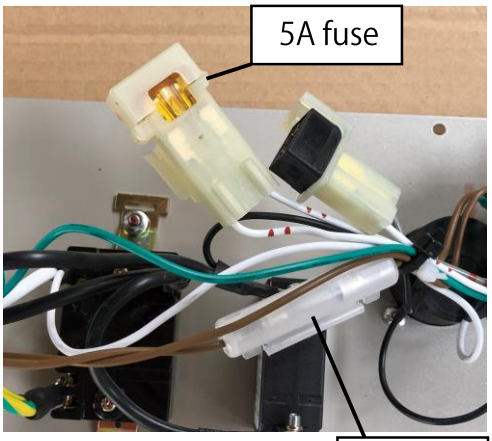
Is the battery working?
Check the connect battery.
Check the battery of voltage.

NO → Check the connect battery.
Charge the battery.
Replace the battery.

NO

YES

Check the fuse. Melted of the fuse?
Check “4-10 OTHER ELECTRICAL” .



NO → Replace the fuse.

NO

YES

Please refer trouble shooting of HONDA ENGINE shop manual.

4-3. NO ELECTRICITY AT THE A.C. RECEPTACLE.

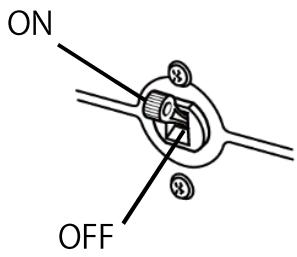
Is the generator working?

NO → Check " 4-1. Engine doesn't start " .

YES ↓

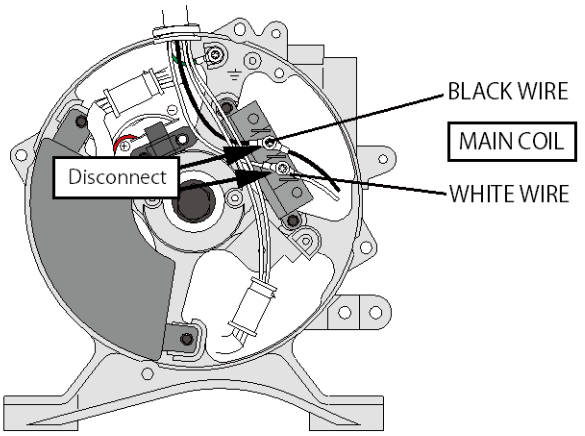
Is the AC circuit breaker, "ON"?

NO → Push to reset the AC circuit breaker is "ON".



4-4. ALTERNATING CURRENT VOLTAGE IS OV.

Remove the Panel wireing.
Start the engine, check the main coil voltage.



Type	Standard Votage	Limits
L , LB	120V	±5%
R , REH , RK , RA , CL , S , SB	220V	±5%
K , M , MK , LS	230V	±5%

YES → **Check the Panel.**
- **Check the cirecuit breaker is ON position.**
- **Check the wire for deterioration, cracks or signs of leakage.**

NO

Check the Brush ?
Check " 4-8. CHECKING BRUSH ".

NO → Replace is new.

YES / NO

Check the A.V.R ?
Check " 4-9. CHECKING A.V.R. ".

NO → Replace is new.

YES / NO

Check the Stator ?
Check " 4-6. CHECKING STATOR ".

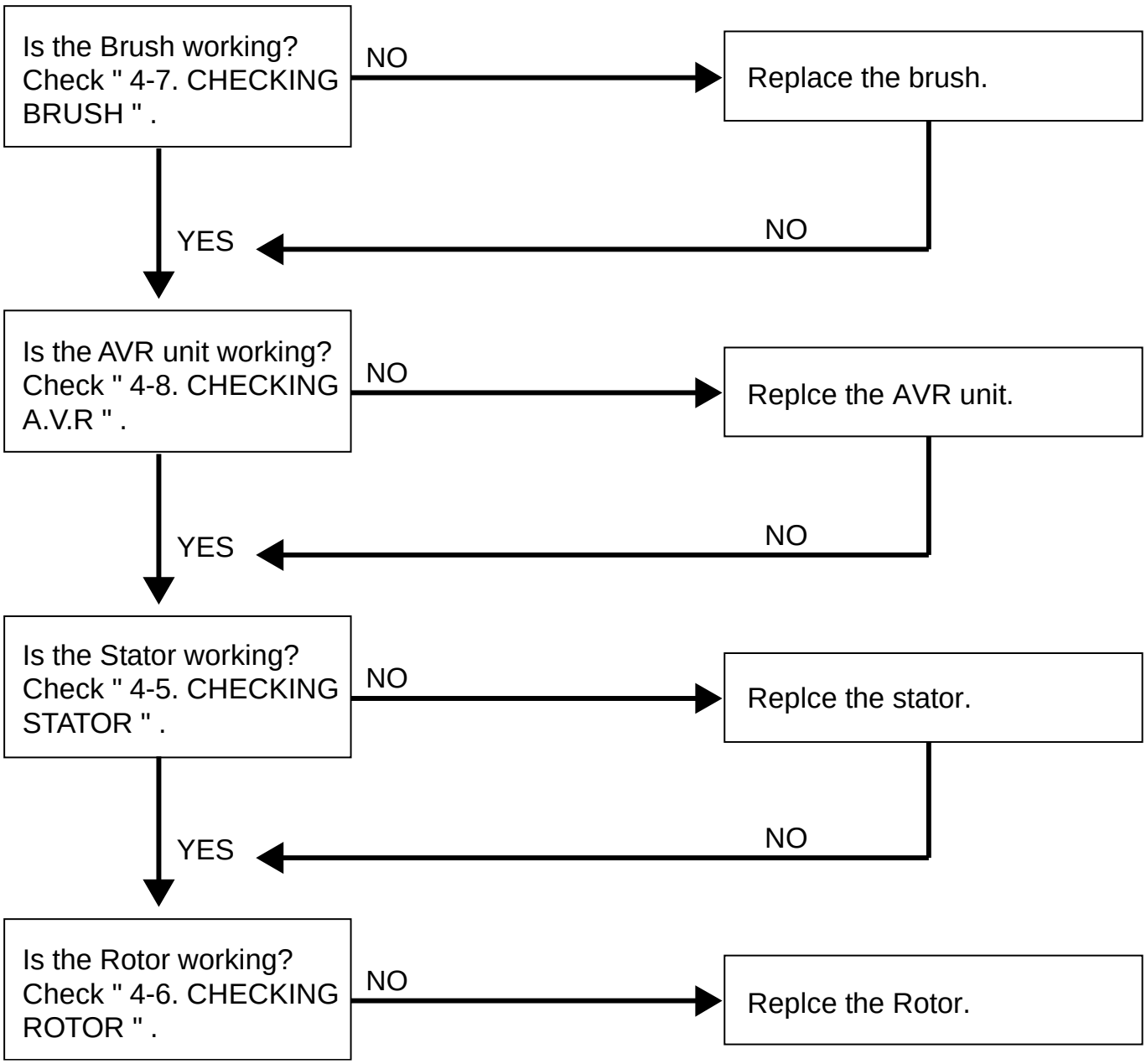
NO → Replace is new.

YES / NO

Check the Rotor ?
Check " 4-7. CHECKING ROTOR".

NO → Replace is new.

4-5. ALTERNATING CURRENT VOLTAGE IS LOW (50～80V).

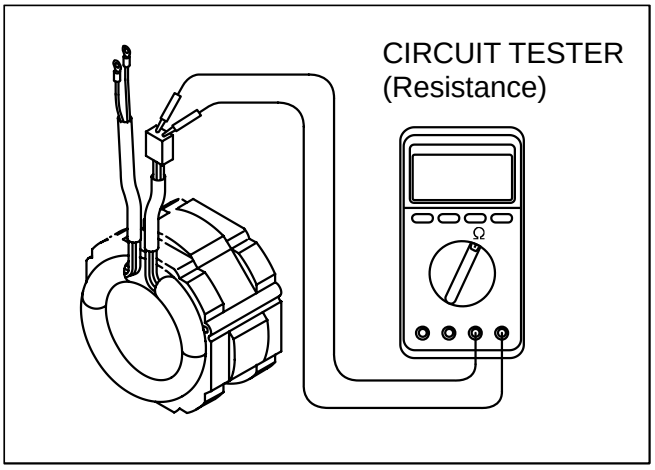


4-6. CHECKING STATOR

1) Remove control panel and disconnect stator wires at the connectors.

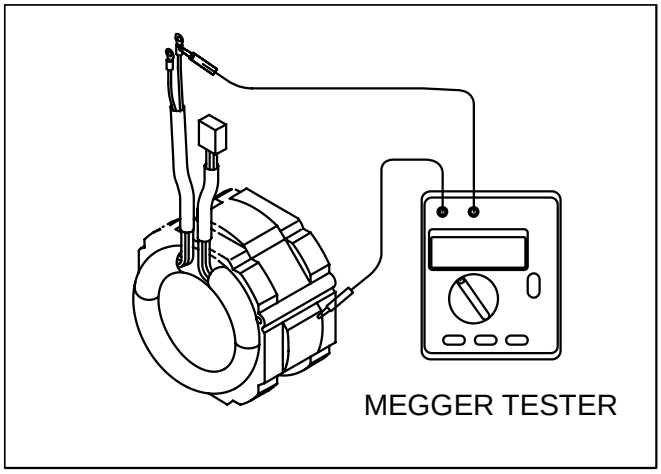
2) Measure the resistance between terminals on stator leads.
Check here the table (Fig 5-1)

If stator is faulty, replace it with a new one.



3) Check the insulation resistance between stator core and each stator lead using a megger tester.

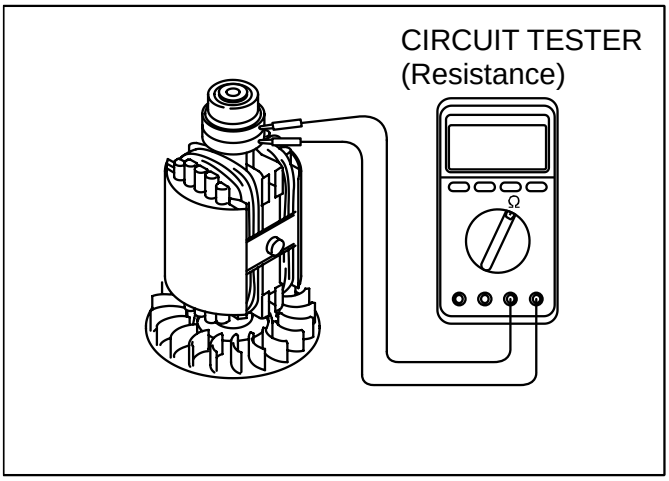
If insulation is bad, replace stator with a new one.



4-7. CHECKING ROTOR

1) Remove the brush holder and measure resistance between the slip rings.

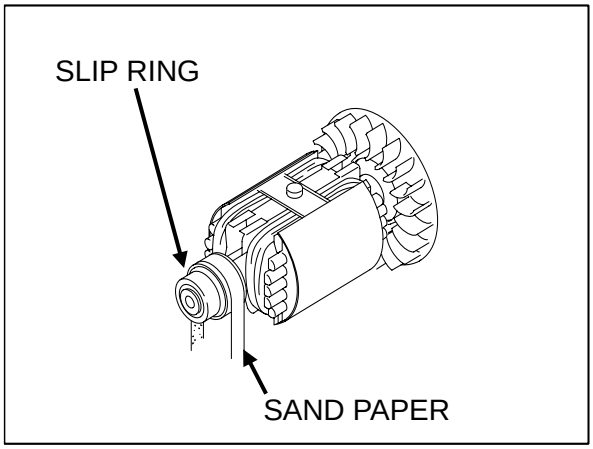
   Check here the table (Fig 5-1)



NOTICE

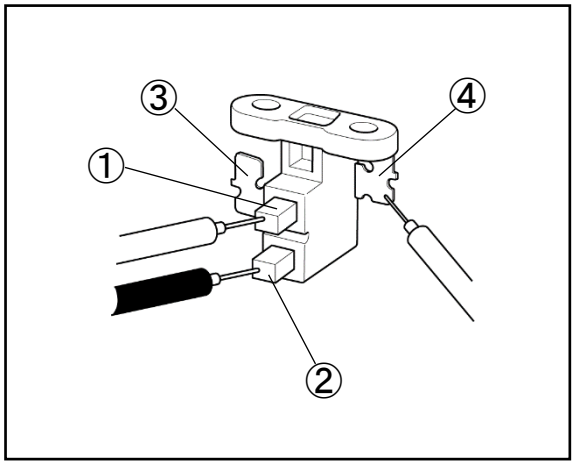
If the circuit tester is not sufficiently accurate, it may not show the values given and may give erroneous readings.
Erroneous reading will also occur when there is a wide variation of resistance among coil windings or when measurement is performed at ambient temperatures different from 20°C (68°F).

2) Cleaning Slip rings the slip ring surfaces must be uniformly bright.
   Slip rings showing black spots, excessive wear, or uneven wear must be repaired.
   A stained slip ring lowers generator efficiency and output voltage.
   Polish the slip rings with fine sandpaper while turning the rotor until rough spots disappear.
   Care should be taken not to touch the rotor coils with the sandpaper.



4-8. CHECKING BRUSH

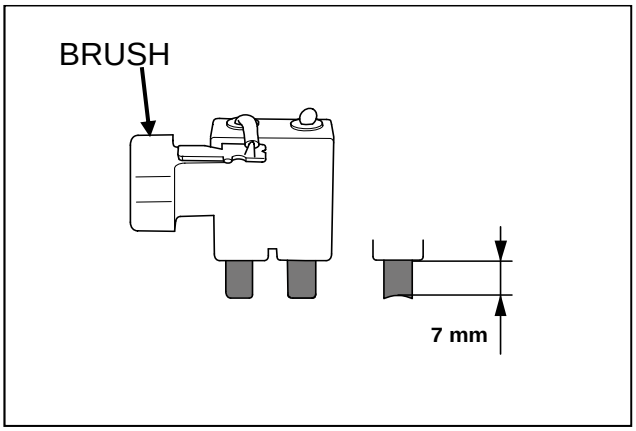
Check for continuity between the each brush tip and wire terminal as shown.



CONTINUITY :

		(+)probe			
		①	②	③	④
(-)probe	①	-	-	-	○
	②	-	-	○	-
	③	-	○	-	-
	④	○	-	-	-

The brushes must be smooth where they contact the slip rings. If not, polish smooth the brushes with sandpaper.
A brush that is not smooth produces arcs between the brush and slip ring leading to possible damage. Usable brush lengths are from 7 mm to 11 mm.
A brush shorter than 7 mm must be replaced because decreased contact pressure between the brush and slip ring lowers generator efficiency and output voltage.



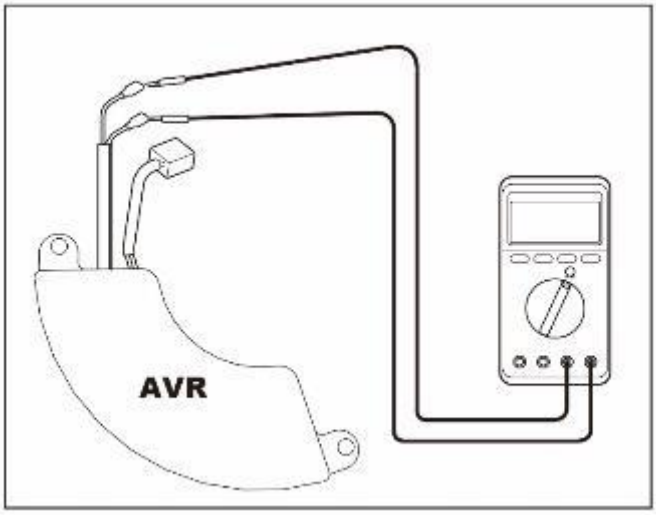
4-9. CHECKING A.V.R.

(AUTOMATIC VOLTAGE REGULATOR)

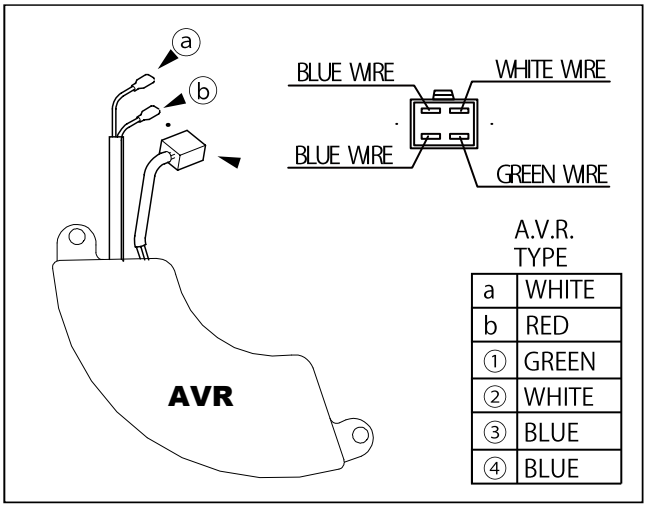
1) Features

This A.V.R. operates to control the field current in order to maintain the output voltage for the AC current, which generated by the magnetic flux by the field coil.

2) A.V.R. trouble may be identified by simply looking at the A.V.R., or by the inter-lead resistance with a tester, or actually mounting it in the generator and operating it.



Replace the case where the resistance is significantly deviated from the measured new one.



A.V.R. TYPE

a	WHITE
b	RED
①	GREEN
②	WHITE
③	BLUE
④	BLUE

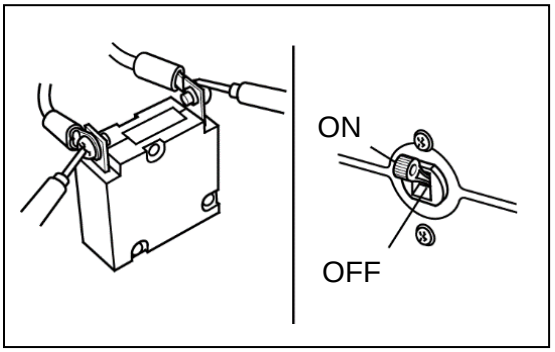
CIRCUIT TESTER		TESTER POLARITY '−' (Ω)					
		White(a)	Red(b)	Green①	White②	Blue③	Blue④
TESTER POLARITY '+' (Ω)	White(a)	-	2.1M	5.0M	5.1M	4.2M	4.2M
	Red(b)	1.8M	-	2.2M	2.2M	1.9M	1.9M
	Green①	4.6M	2.2M	-	4.9M	4.7M	4.7M
	White②	4.6M	2.2M	5.1M	-	4.6M	4.6M
	Blue③	4.0M	1.7M	4.5M	4.5M	-	4.0M
	Blue④	4.2M	1.7M	4.7M	4.7M	4.2M	-

(Ω)(R±20%)

4-10. OTHER ELECTRICAL

Circuit breaker inspection

There should be continuity between the terminals with the circuit breaker in the ON position and no continuity with the circuit breaker in the OFF position.

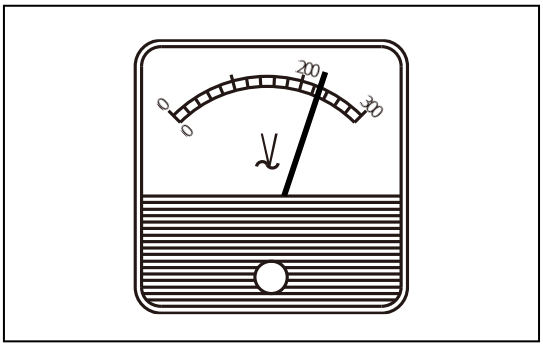


Voltmeter inspection

Check the position to the pointer of Voltmeter.

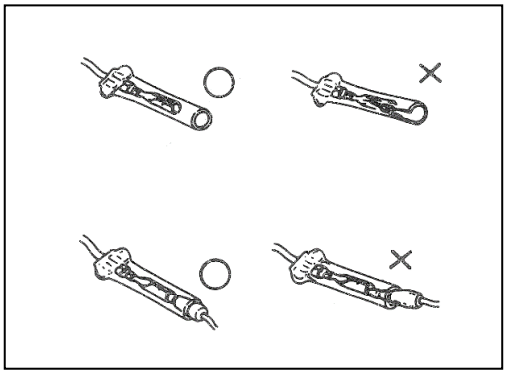
Pointer position

120V : 110V to 130V.
220V : 210V to 230V.
230V : 220V to 240V.



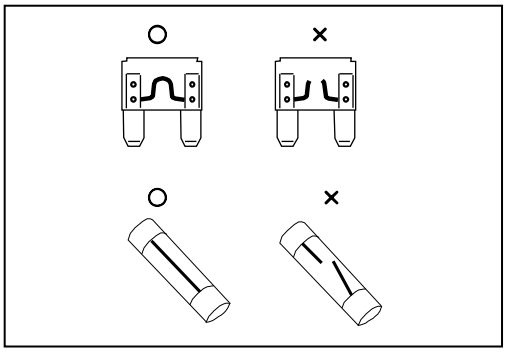
Terminal inspection

Make sure that the connector does not break the cover.
Check that the female terminal does not open too much.
If rusting occurs on the terminals, correct with sand paper before connecting.



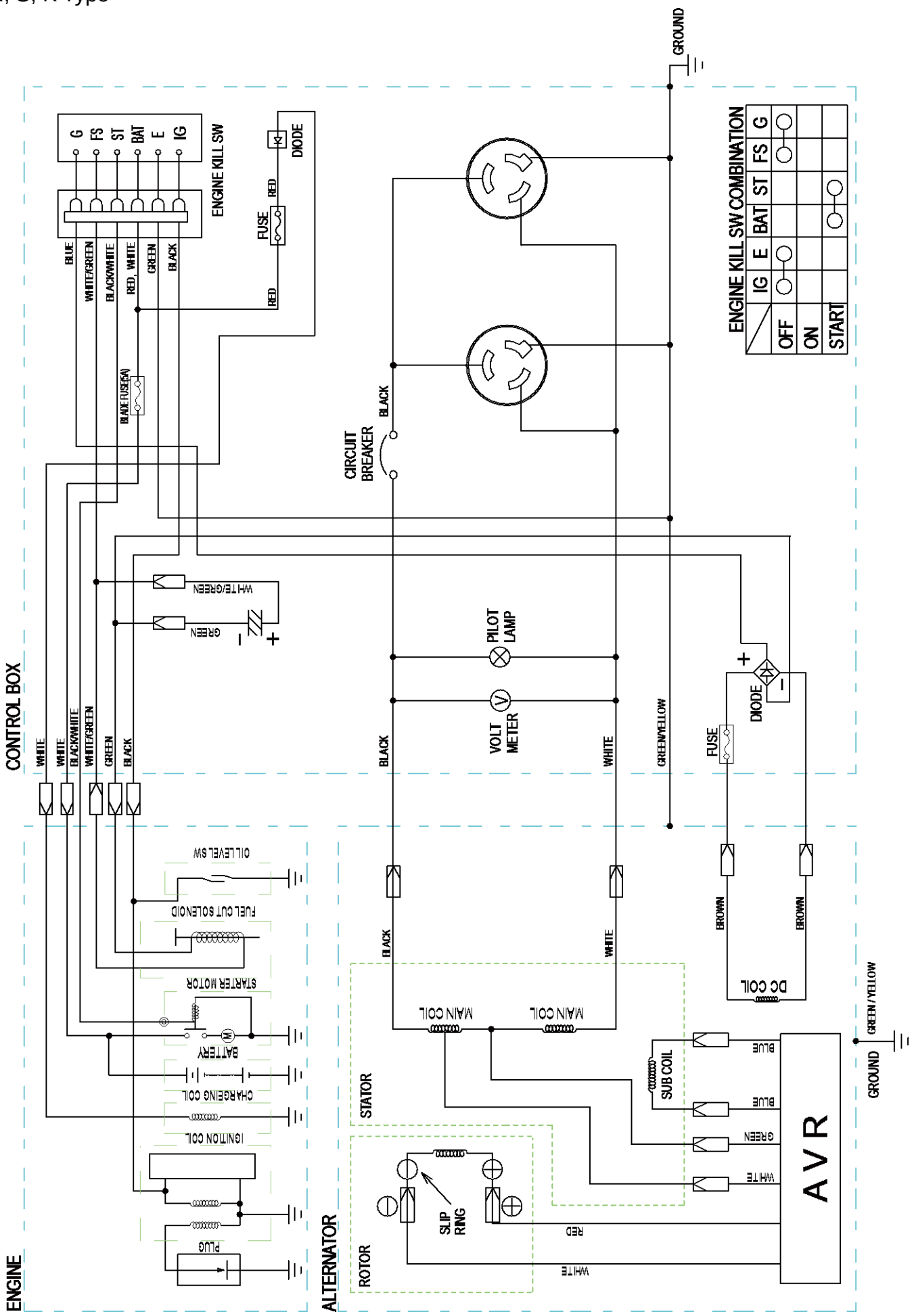
Fuse inspection

If the over current, the fuse will be damage.
Check visually for damage.

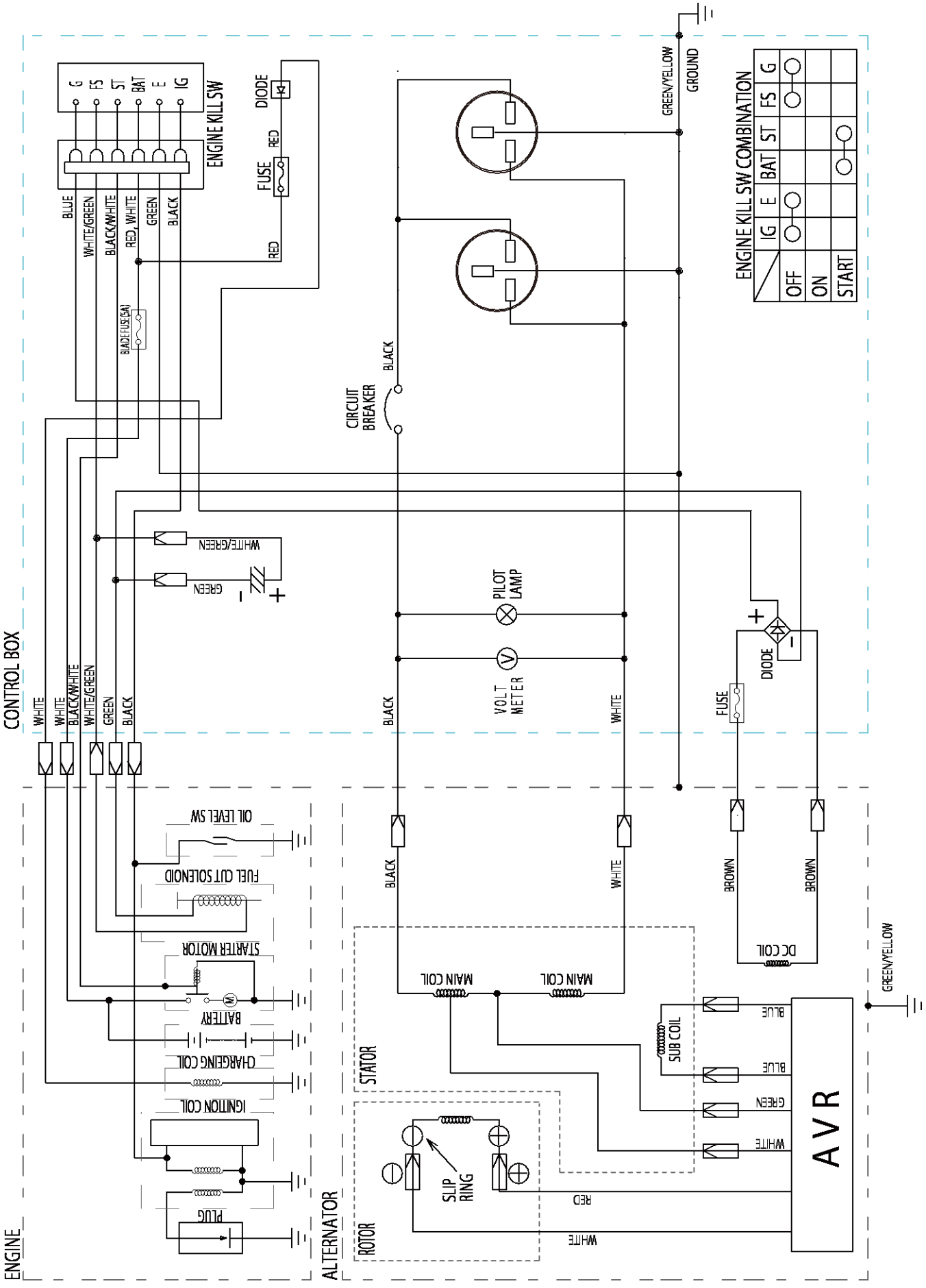


4-11. WIRING DIAGRAM

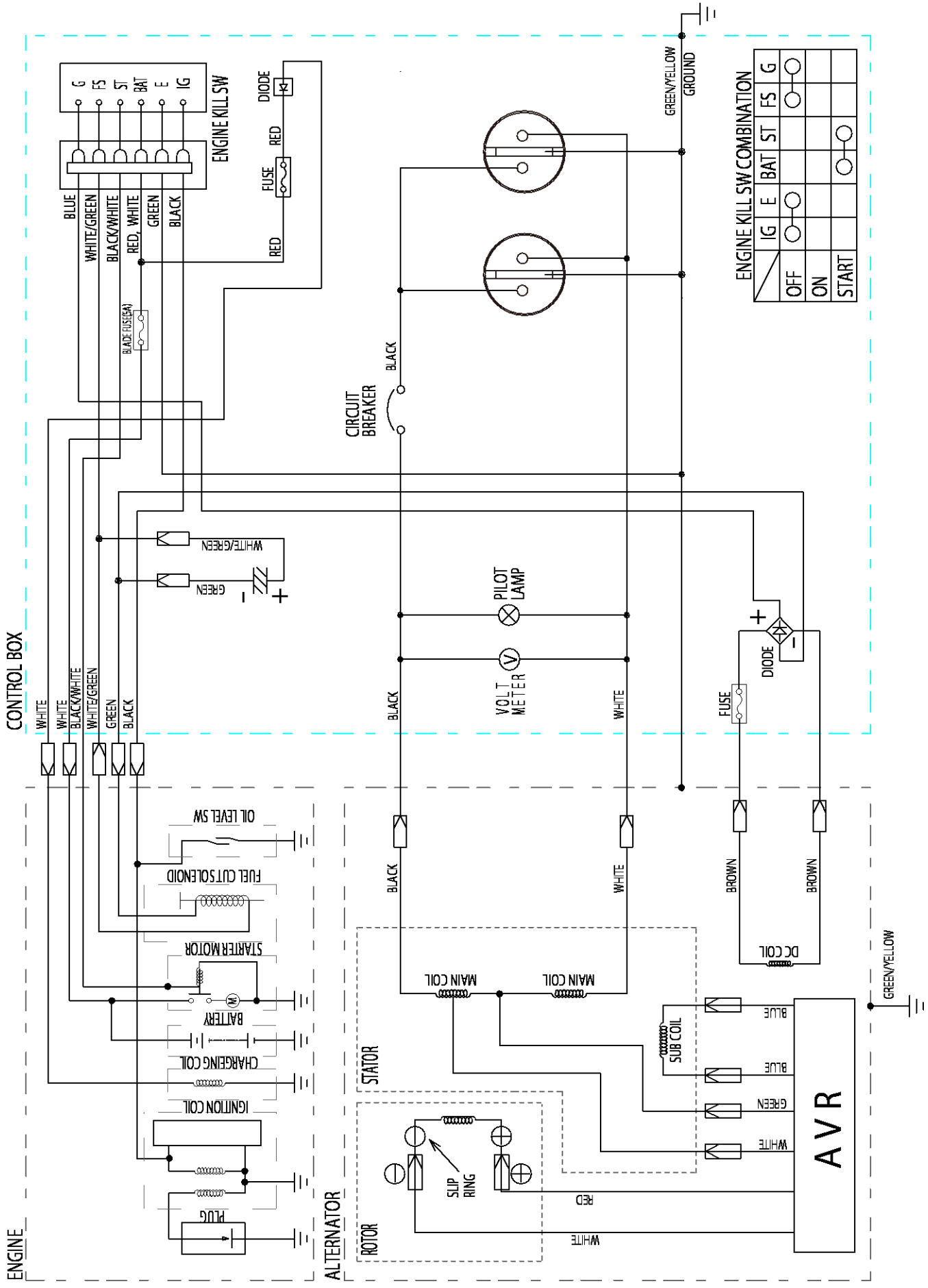
R, S, K Type



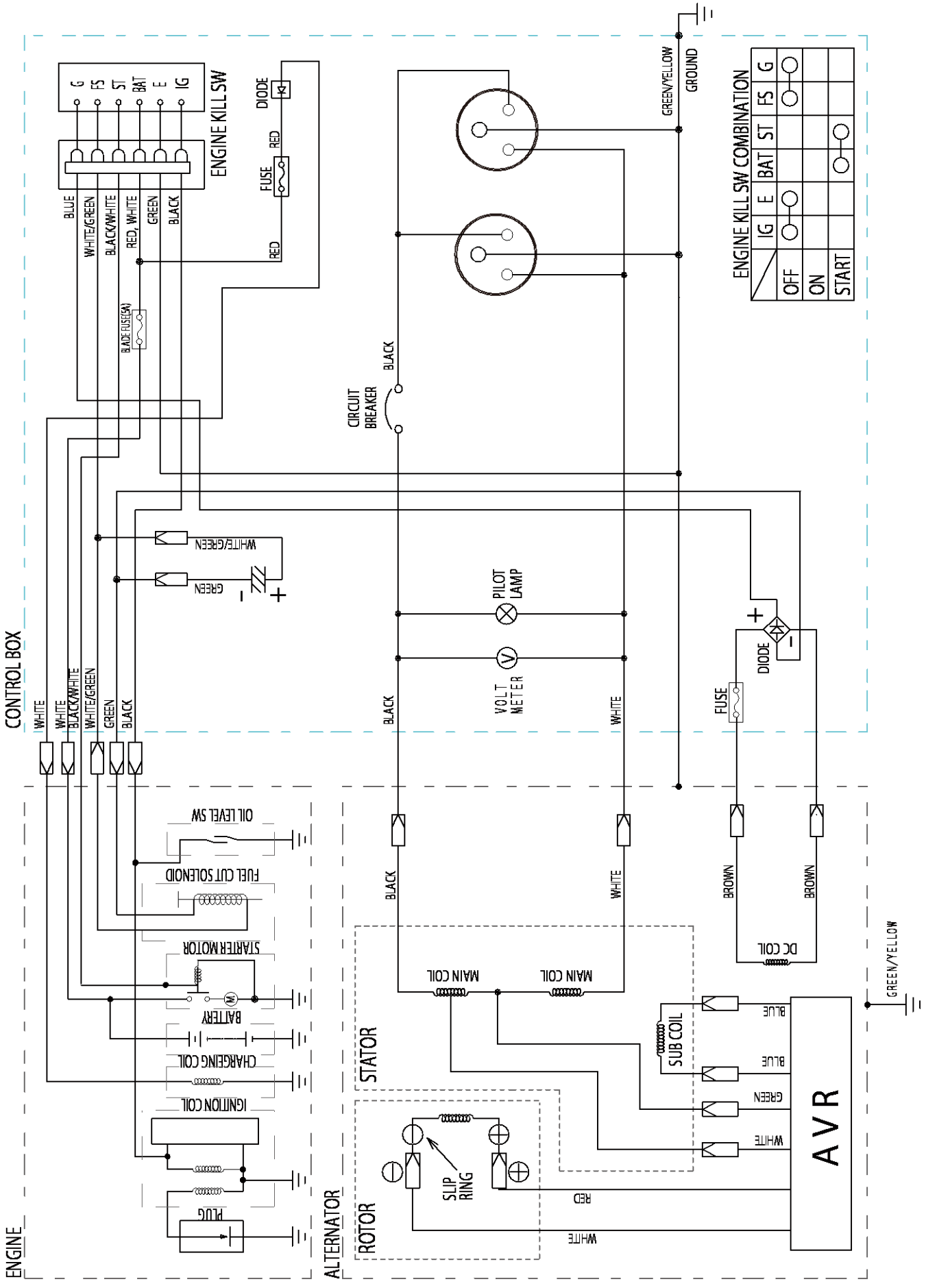
RK, LS, MK Type


CONTROL BOX
ENGINE
ALTERNATOR
ROTOR
STATOR
ENGINE KILL SW
G
FS
ST
BAT
E
IG
DIODE
FUSE
RED
BLUE
WHITE/GREEN
BLACK/WHITE
RED, WHITE
GREEN
BLACK
BLADE FUSE(5A)
GREEN/YELLOW
GROUND
ENGINE KILL SW COMBINATION
OFF
ON
START
CIRCUIT BREAKER
PILOT LAMP
VOLT METER
WHITE/GREEN
GREEN
WHITE
BLACK/WHITE
WHITE/GREEN
GREEN
BLACK
OIL LEVEL SW
FUEL CUT SOLENOID
STARTER MOTOR
BATTERY
CHARGING COIL
IGNITION COIL
PLUG
MAIN COIL
MAIN COIL
SUB COIL
SLIP RING
BROWN
BROWN
DC COIL
BLUE
BLUE
GREEN
WHITE
RED
WHITE
AVR

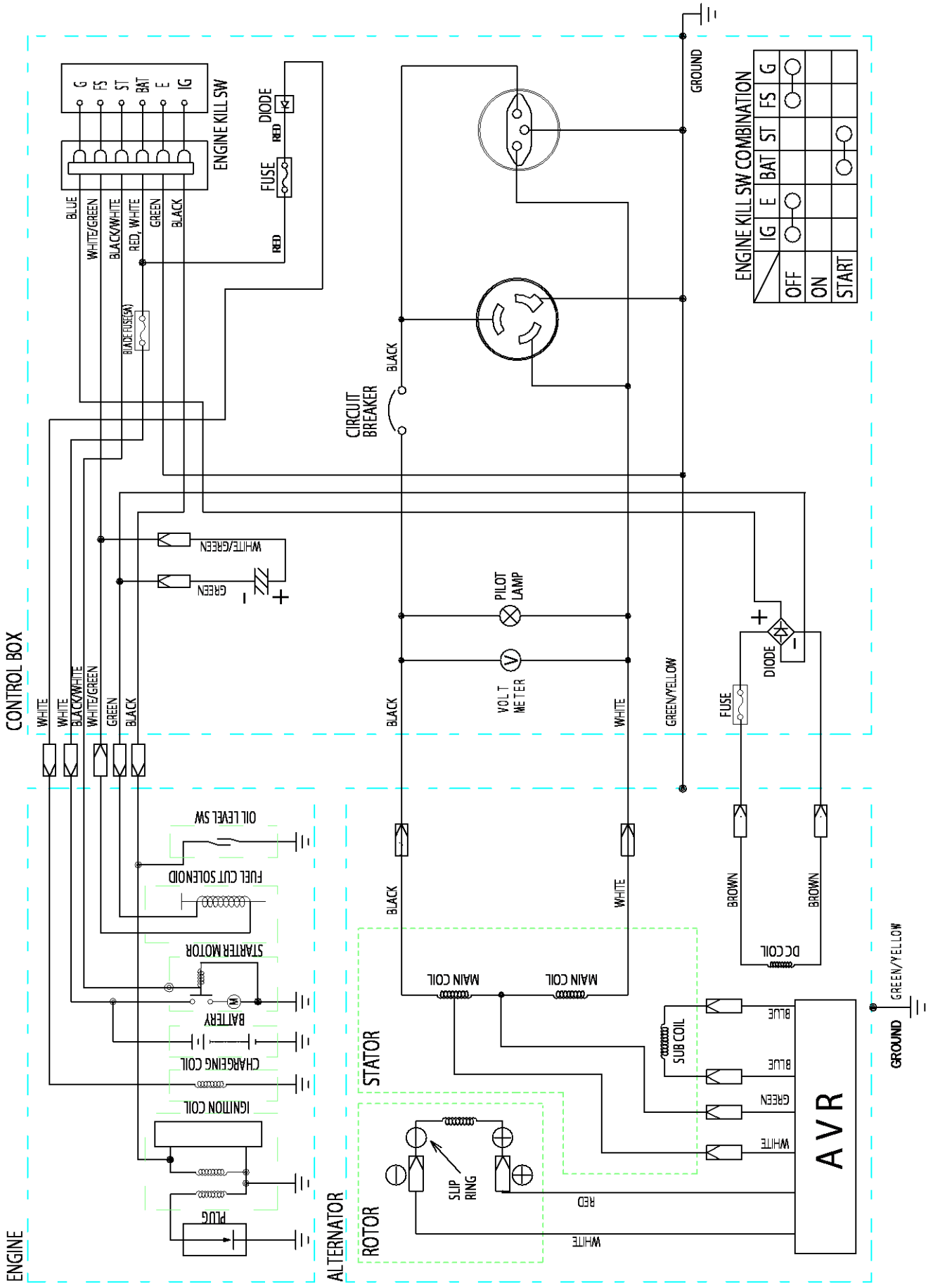
REH, CL Type


ENGINE KILL SW
G
FS
ST
BAT
E
IG
DIODE
RED
FUSE
RED
BLUE
WHITE/GREEN
BLACK/WHITE
RED, WHITE
GREEN
BLACK
BLADE FUSE(5A)
GREEN/YELLOW
GROUND
ENGINE KILL SW COMBINATION
OFF
ON
START
CIRCUIT BREAKER
BLACK
WHITE/GREEN
GREEN
PILOT LAMP
VOLT METER
DIODE
FUSE
CONTROL BOX
WHITE
BLACK/WHITE
WHITE/GREEN
GREEN
BLACK
OIL LEVEL SW
FUEL CUT SOLENOID
STARTER MOTOR
BATTERY
CHARGING COIL
IGNITION COIL
PLUG
ENGINE
ALTERNATOR
STATOR
ROTOR
MAIN COIL
MAIN COIL
SUB COIL
DC COIL
BROWN
BROWN
BLUE
BLUE
GREEN
WHITE
SLIP RING
RED
WHITE
AVR
GREEN/YELLOW

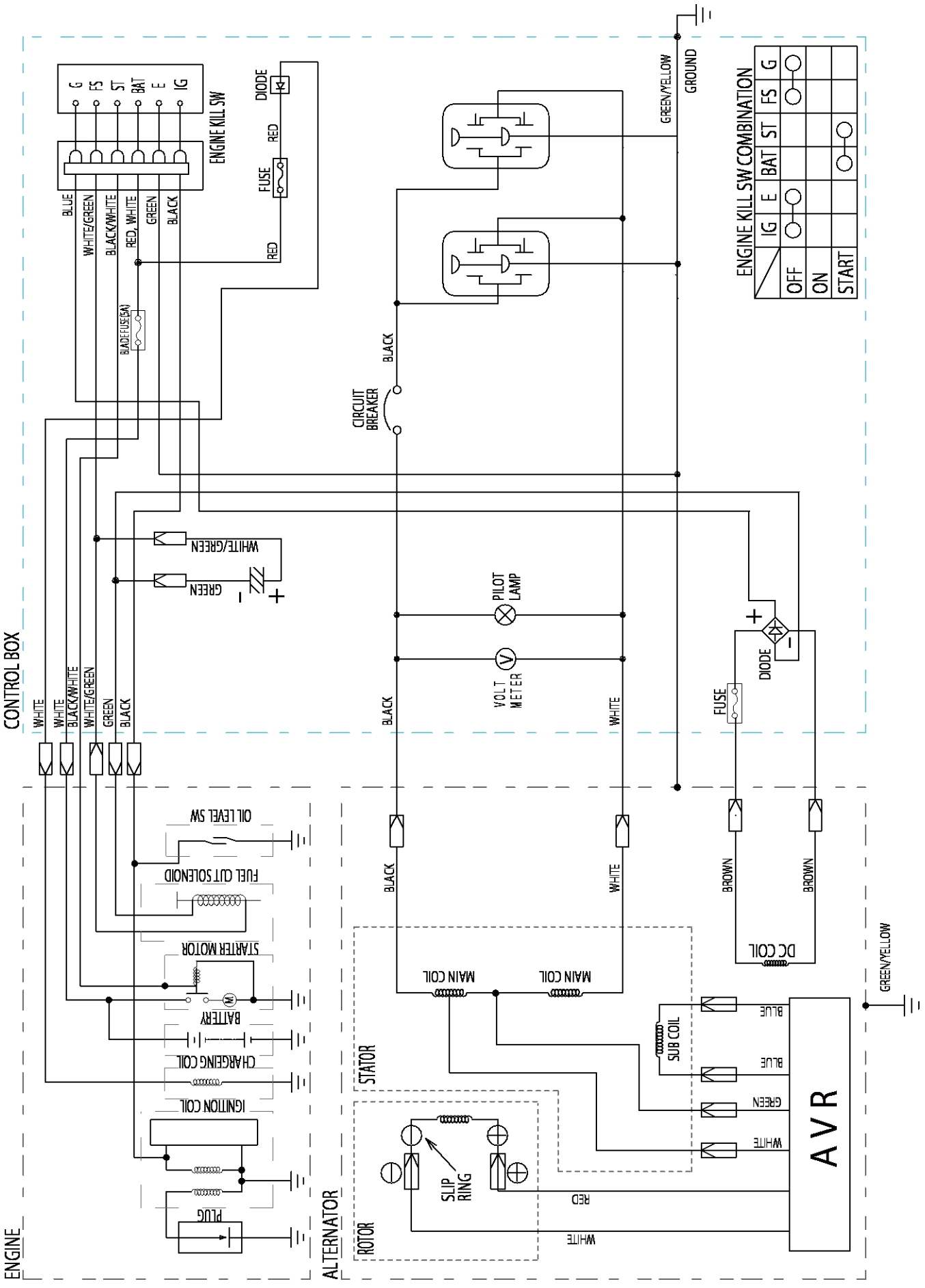
M Type


ENGINE KILL SW
G
FS
ST
BAT
E
IG
BLUE
WHITE/GREEN
BLACK/WHITE
RED, WHITE
GREEN
BLACK
DIODE
RED
FUSE
RED
BLADE FUSE(5A)
GREEN/YELLOW
GROUND
ENGINE KILL SW COMBINATION
IG
E
BAT
ST
FS
G
OFF
ON
START
CIRCUIT BREAKER
BLACK
WHITE/GREEN
GREEN
PILOT LAMP
VOLT METER
BLACK
WHITE
DIODE
FUSE
CONTROL BOX
WHITE
WHITE
BLACK/WHITE
WHITE/GREEN
GREEN
BLACK
OIL LEVEL SW
FUEL CUT SOLENOID
STARTER MOTOR
BATTERY
CHARGING COIL
IGNITION COIL
PLUG
BLACK
WHITE
BROWN
BROWN
DC COIL
MAIN COIL
MAIN COIL
STATOR
SUB COIL
BLUE
BLUE
GREEN
WHITE
AVR
GREEN/YELLOW
SLIP RING
RED
WHITE
ROTOR
ENGINE
ALTERNATOR

SB, LB Type


ENGINE KILL SW COMBINATION
OFF
ON
START
ENGINE KILL SW
DIODE
FUSE
GROUND
CIRCUIT BREAKER
PILOT LAMP
VOLT METER
CONTROL BOX
ENGINE
ALTERNATOR
STATOR
ROTOR
SUB COIL
MAIN COIL
DC COIL
SLIP RING
AVR
OIL LEVEL SW
FUEL CUT SOLENOID
STARTER MOTOR
BATTERY
CHARGING COIL
IGNITION COIL
PLUG
BLADE FUSE(5A)
WHITE/GREEN
GREEN
BLACK
WHITE
RED
BLUE
BROWN
GREEN/YELLOW

L Type


ENGINE KILL SW COMBINATION
IG E BAT ST FS G
OFF
ON
START
ENGINE KILL SW
G FS ST BAT E IG
BLUE
WHITE/GREEN
BLACK/WHITE
RED, WHITE
GREEN
BLACK
DIODE
RED
FUSE
RED
BLADE FUSE(5A)
GREEN/YELLOW
GROUND
CIRCUIT BREAKER
BLACK
WHITE/GREEN
GREEN
PILOT LAMP
VOLT METER
BLACK
WHITE
FUSE
DIODE
CONTROL BOX
WHITE
WHITE
BLACK/WHITE
WHITE/GREEN
GREEN
BLACK
OIL LEVEL SW
FUEL CUT SOLENOID
STARTER MOTOR
BATTERY
CHARGEING COIL
IGNITION COIL
PLUG
ENGINE
BLACK
WHITE
BROWN
BROWN
DC COIL
MAIN COIL
MAIN COIL
STATOR
SUB COIL
BLUE
BLUE
GREEN
WHITE
AVR
GREEN/YELLOW
SLIP RING
RED
WHITE
ROTOR
ALTERNATOR

HONDA