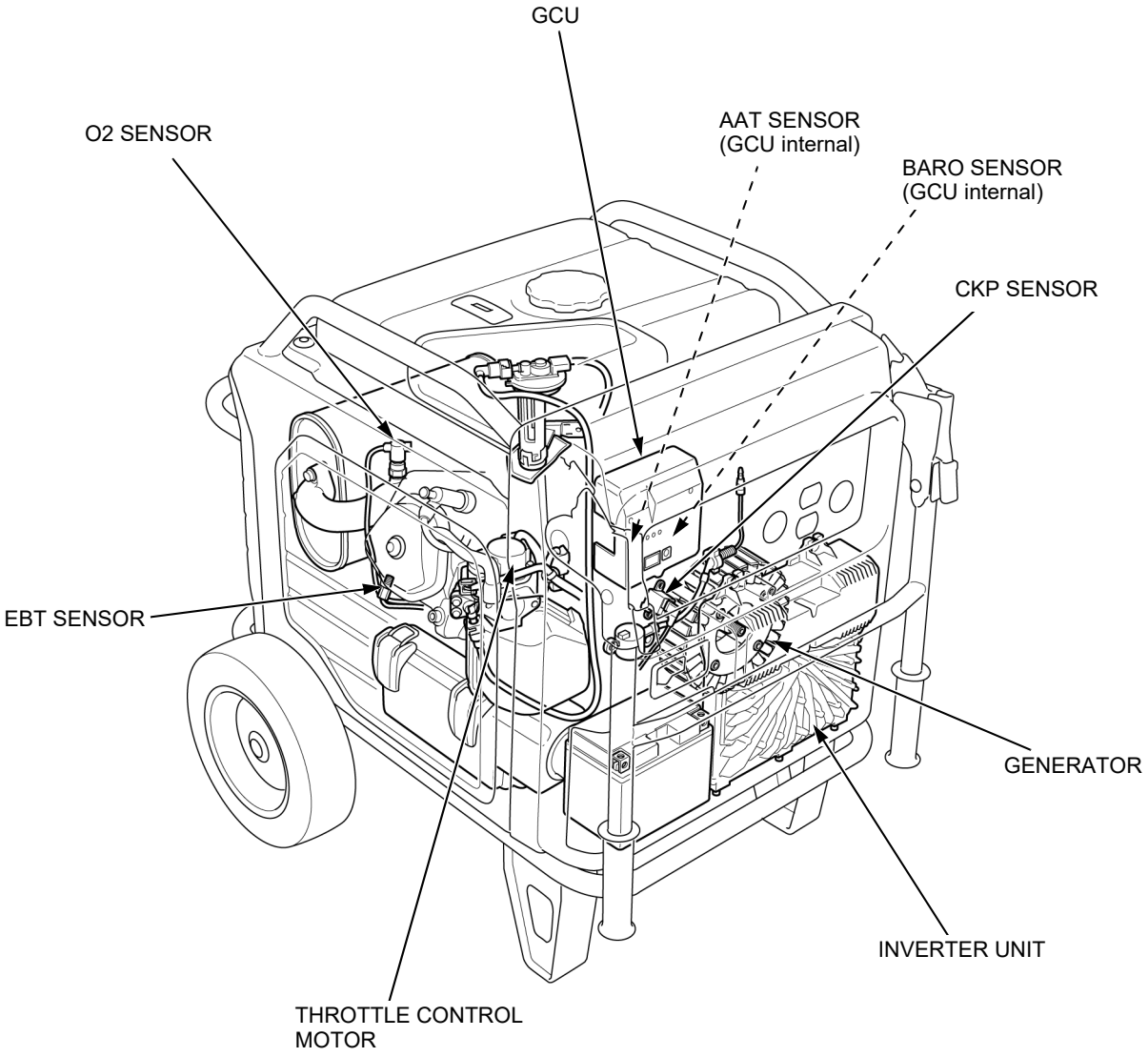
EU7000is (EEJD-1000001 ~ 1299999)
EU7000isAG (EEJD-1300001 ~ SUBSEQUENT)

Refer to the appropriate shop manual for troubleshooting techniques for the CO-MINDER™ and wireless (Bluetooth®) systems.

Date Revised: March 2021 (PSV52522-S)

SYSTEM LOCATION



MECHANICAL TROUBLESHOOTING

When presented with an EU7000is inverter generator exhibiting error codes or unusual running problems, follow the steps below BEFORE troubleshooting by the error code(s) found on page EU-93.

Remember, mechanical problems can lead to error codes and replacement of expensive electronic components that may not be faulty. Some of these steps, hints, and directions may seem irrelevant or an inefficient use of time. It has been shown that following these steps leads to easier and earlier identification of the actual problem or faulty component.

NOTE: One of the most common issues is fuel related. The maintenance interval for the high pressure fuel filter is 1000 hours. If you see the E-0A fault, this fuel filter should be replaced first and the unit re-tested.

Follow these steps and, when necessary, contact Techline or your District Service Manager (DSM) if additional assistance is necessary. Always complete sections 1 and 2 before calling.

REMINDER: All major component replacement requires prior warranty authorization from Techline or your DSM. Major components include the inverter, generator control unit (GCU), stator, rotor, and major engine components.

It may not be necessary to perform all of the following troubleshooting steps:

- Always complete sections 1 and 2.
- If the generator starts and immediately stalls or runs less than 10 seconds, refer to sections 3 to 5.
- If the generator runs for more than 10 seconds, refer to sections 6 and 7.

1. QUESTION THE CUSTOMER

When an EU7000is generator is brought in for repair, be sure to fill out the i-Monitor Detail Error Log (found in the back of this manual). This document is required before Techline or your DSM can authorize warrantable inverter generator repairs.

Important information to get from the customer:

- Description of generator usage at the time of the failure
- Receptacles used
- Loads (manufacturer, model, volts, and amps of each load)
- Extension cord length and gauge

EU7000iS i-MONITOR DETAIL ERROR LOG
FAX this page to Techline at (678) 339-2519 or email to petl@ahm.honda.com

Dealer name:_____ Dealer number:_____ State:_____

Contact:_____ Telephone number: ( ) _____

Generator Model: Frame serial number (including prefix): Date of purchase: Date of failure: Hours

1. **Describe the failure:** _____
2. **Describe how the generator was being used at the time of the failure.**

3. **Extension cord gauge _____ and length _____ (if applicable).**
4. **i-Monitor error log (see READING THE ERROR CODES and error detail code definitions on page 2)**

Error Code #1 _____		
Error Detail #	Number in display	Units
1		Hour
2		Volts
3		Volts
4		Amps
5		Amps
6		rpm
7		°C
8		°C
9		%
a		Volts
b		°C
c		°C
d		kPa

Error Code #2 _____		
Error Detail #	Number in display	Units
1		Hour
2		Volts
3		Volts
4		Amps
5		Amps
6		rpm
7		°C
8		°C
9		%
a		Volts
b		°C
c		°C
d		kPa

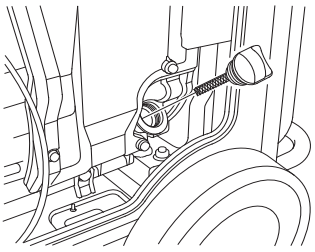
Error Code #3 _____		
Error Detail #	Number in display	Units
1		Hour
2		Volts
3		Volts
4		Amps
5		Amps
6		rpm
7		°C
8		°C
9		%
a		Volts
b		°C
c		°C
d		kPa

Stator Inspection	
Test Points	Measured Voltage
Master	
① and ②	VAC
② and ③	VAC
① and ③	VAC
Slave	
① and ②	VAC
② and ③	VAC
① and ③	VAC
Test Points	Measured Resistance
Master	
① and ②	Ω
② and ③	Ω

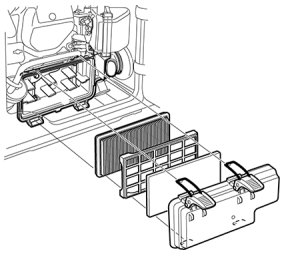
2. CHECK THE CONDITION OF THE GENERATOR

With the customer present, document the condition of the fuel, oil (level, color, odor) and air filter.

OIL



AIR FILTER



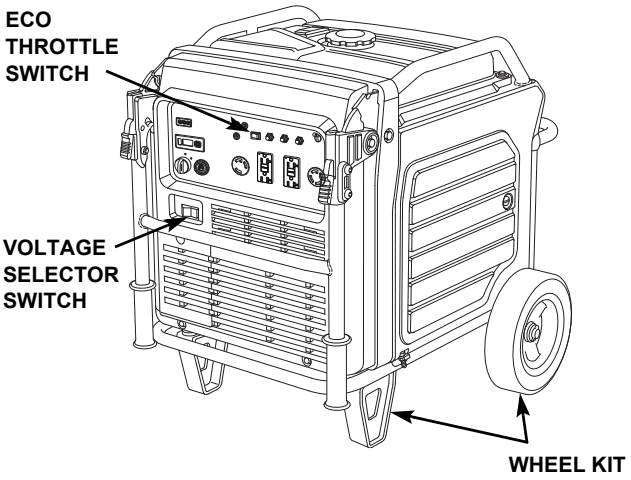
EU Models

Date Revised: November 2021 (PSV52522-T)

Note the position of the Eco Throttle® switch and the voltage selector switch at the time the unit is brought in.

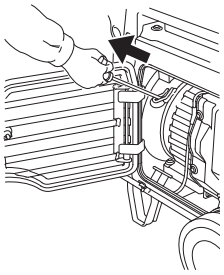
Is the wheel kit installed? The unit requires open space under and around the generator for cooling purposes.

Is there evidence of the unit being run in an enclosure or restricted area? Exhaust soot on painted surfaces is a good indicator.



3. NOTE ANY UNUSUAL RECOIL RESISTANCE

a. Use the recoil starter to determine the presence of an electronic brake load on the generator. If such a load is present, the unit will be difficult to pull over by hand.

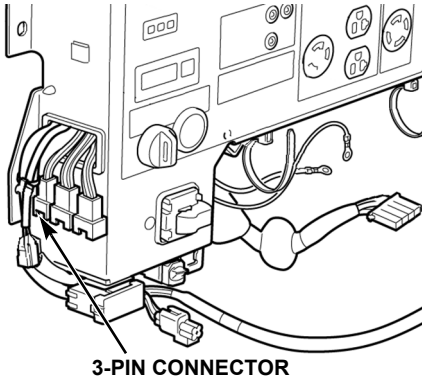


b. If the recoil starter is difficult to pull, disconnect the GCU from the stator by disconnecting the 3-pin connector (red, white, blue wires) on the left side of the control panel. In most cases, this should relieve the excessive recoil resistance. A faulty GCU could cause the problem, and may not force error codes from the i-Monitor.

c. If disconnecting the GCU did not change the recoil resistance, disconnect the inverter and retest the recoil resistance.

d. If disconnecting the inverter did not change the recoil resistance, visually inspect the stator (see page EU-88).

e. If the engine is still hard to turn over, remove the spark plug and retest recoil resistance. If removing the spark plug relieves recoil resistance, inspect for carbon deposits or engine mechanical issues.

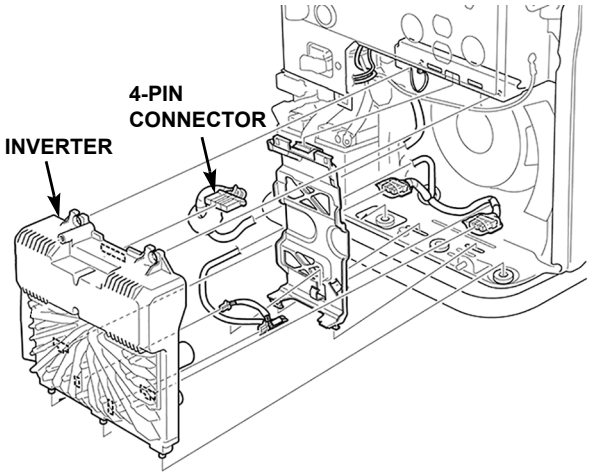


4. CHECK THE VOLTAGE SELECTOR SWITCH

If the engine starts and the green output indicator light illuminates for several seconds, followed by the green light going out and the red overload indicator light illuminating while the engine defaults to a low idle speed, there may be a problem with the voltage selector switch. There may also be a buzzing noise coming from the switch when it is in either position.

Turn the unit off and disconnect the 4-pin connector from the inverter as shown. Restart the unit. If the green output indicator stays illuminated and the Eco Throttle switch functions properly, the voltage selector switch may be faulty.

Test the voltage selector switch according to the shop manual procedure.

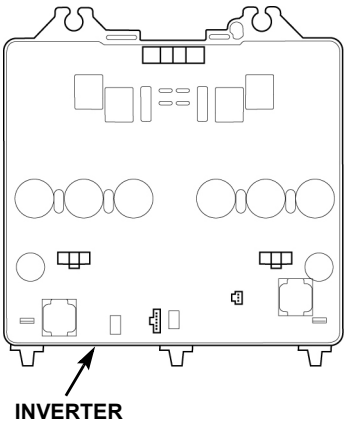


5. INSPECTION

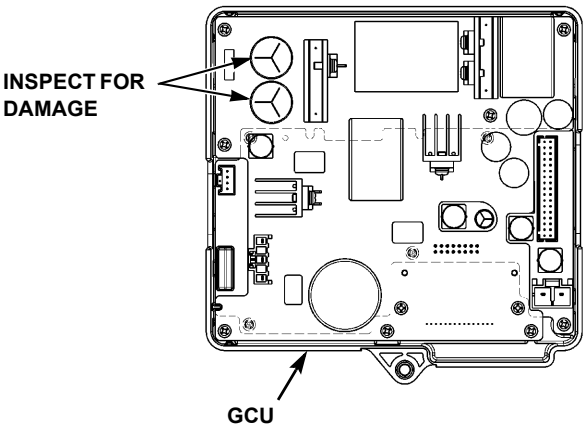
Perform a visual inspection of the GCU and inverter. Component inspection is listed in the order in which they need to be removed to access the next component.

Inverter: To visually inspect the inverter, remove the front cover and the control panel. Visually inspect the back of the inverter for any discolored or damaged wiring, capacitors, or connectors, and note any bubbling, corrosion, or other unusual conditions. If any of these issues are present, the inverter is likely faulty.

While the inverter may be faulty, it may not be the cause for the overall generator failure. Some other circumstance, or other component failure, may have caused the inverter to fail. Test the stator (see page EU-88) before contacting Techline or your DSM for further instruction.

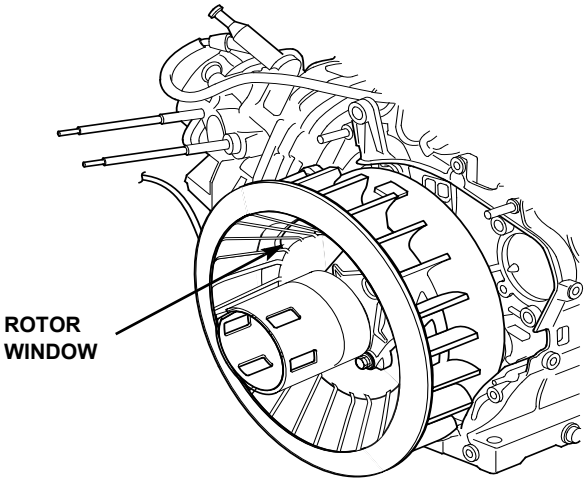


GCU: With the front cover and the control panel removed, visually inspect the circuit board on the back side of the GCU for any discolored spots, deterioration, contamination, or deformed capacitors.



Stator: The output and resistance tests performed in the Generator Troubleshooting Guide or the appropriate shop manual should be enough to determine if the stator is good or not. The stator resistance readings should be consistent. If there is more than 0.2 Ω of difference between readings, the stator has failed.

To visually inspect the stator, remove the spark plug, inverter, and recoil starter, and then rotate the cooling fan until you can look through the rotor windows at the stator windings. Rotate the rotor by hand and slowly look for any signs of overheated or discolored stator windings.



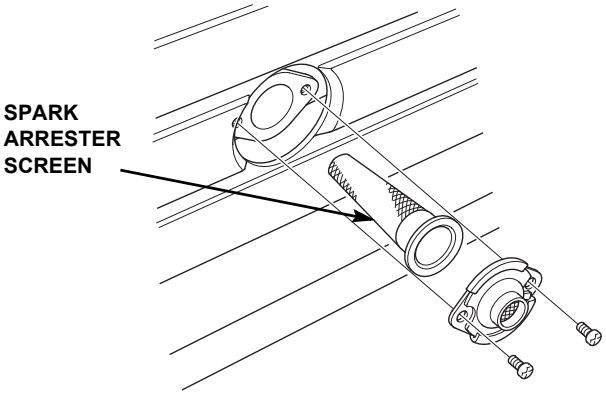
Date Revised: November 2021 (PSV52522-T)

6. CHECK THE SPARK ARRESTER SCREEN

Clean or replace as necessary. A badly clogged screen could also be an indicator that the muffler passages are clogged or reduced due to carbon buildup. Excess carbon buildup may indicate high engine hours, operation with a restricted air cleaner, or operating the generator in an enclosure.

If the spark arrester was heavily clogged, run the generator outdoors on the load bank for 30 minutes at 50 ~ 60% load to dynamically decarbon the combustion chamber. Let the generator cool down, and then reinstall the spark arrester.

The spark arrester screen should be cleaned every 6 months or 100 hours.



7. FUEL PRESSURE TEST

If the generator displays an E-0A code, surges under load, or surges and stalls, the fuel system needs to be inspected.

One of the most common repairs comes from fuel related problems. The maintenance interval for the high pressure fuel filter is 1000 hours. If the E-0A code appears, replace the fuel filter and recheck the unit before continuing.

Test the fuel pressure:

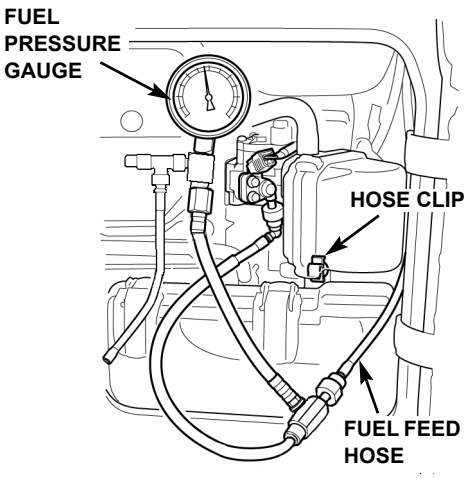
- Remove the fuel feed hose from the hose clip.
- Relieve the fuel pressure by disconnecting the injector-side, quick-connect fitting.
- Attach the fuel pressure gauge.

  TOOL: Fuel pressure gauge
  P/N 074APJ-Z37A101

- Start the engine using the electrical starter and read the fuel pressure.

  STANDARD: 43 psi (294 kPa, 3.0 kgf/cm^2)

- If the fuel pressure is lower than specified, inspect the fuel filter. If the fuel filter is clean, contact Technline. The fuel filter should be changed every 2 years or 1,000 hours.
- If the pressure is still low, replace the fuel pump. If the pressure is normal, replace the fuel injector.



Refer to page EU-117 for additional information.

8. START AND LOAD TEST THE GENERATOR

Note any changes in the way the engine runs.

- If the problem is now resolved, be sure to note the hours and any stored error codes on the repair order.
- If a problem remains after the above steps have been taken, refer to page EU-90 to troubleshoot the generator. Perform the visual inspection (step 5) when removing the control panel and inverter.
- If the generator starts and runs but does not carry the rated load during the load bank test, check the engine compression. Repair as necessary and repeat load bank test.

AC OUTPUT

⚠ WARNING

High voltage and electrical current present. Touching the non-insulated portions of the meter leads or generator wiring can cause shock or electrocution. Wear insulated gloves and avoid handling non-insulated wiring.

Use a load bank (available through the Honda Tool and Equipment Program or the Parts Division) to verify the customer's initial complaint and the generator's performance after the repairs (see page 3-2).

COMPLAINT: Abnormal output (none, low, or high) at receptacle. **Normal: 120 VAC ± 10.**

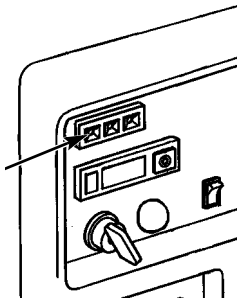
The circuit protectors must be in the ON position.

1. Does the engine start and run, or stop shortly after it is started?

STOPS → Go to step 3.

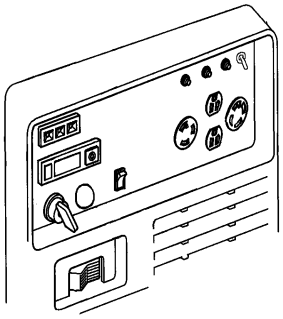
RUNS ↓

2. Start the engine and verify that the output indicator is ON.



ON →

- Check the receptacles.
- Check the circuit protectors.
- Check the voltage selector switch.
- Check the wiring from the inverter to the control panel.

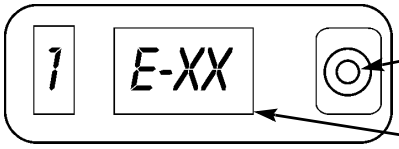


OFF ↓

OK ↓

3. With a fully charged battery installed, turn the engine switch to the ON position.

4. Push and hold the i-Monitor button for 3 seconds. If an error code (E-XX) is displayed, record the code. Push the i-Monitor button again and record additional codes until END appears.



CODE(S) → Troubleshoot the most recent error code(s) according to the itemized list starting on page EU-93.

Use the *EU7000is i-Monitor Detail Error Log* located in the TEST WORKSHEETS chapter of this manual to record error codes and the detail error log information for each error code.

NO CODE ↓

5. Start the engine and verify the engine speed.
Specified engine speed:
Eco Throttle® OFF: 3,300 ± 100 rpm
Eco Throttle ON: 2,400 ± 100 rpm

NG → Refer to *Hard Starting* in the shop manual Troubleshooting Section.

OK ↓

Proceed to step 6 on the next page.

EU Models

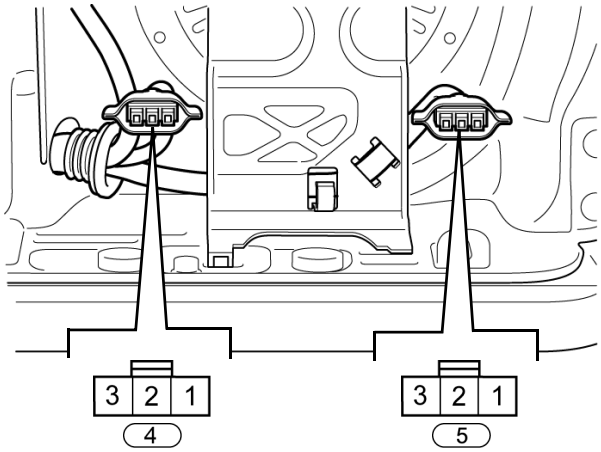
Date Revised: March 2021 (PSV52522-S)

6. Stop the engine.
Remove the inverter from the generator.
Remove the spark plug.

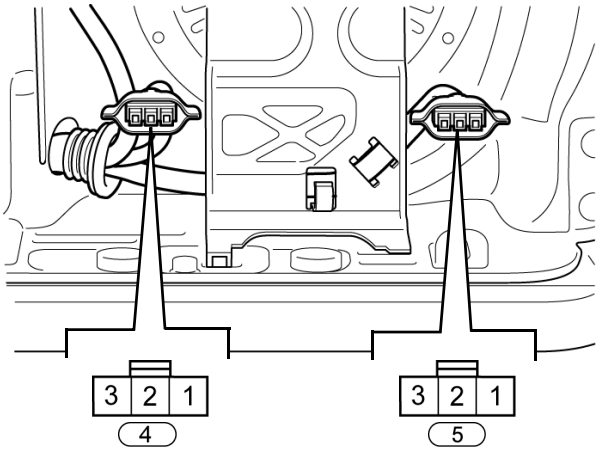
↓

7. Operate the recoil starter (600 rpm min.) or electric starter and check the specified voltages at the locations shown.

8.

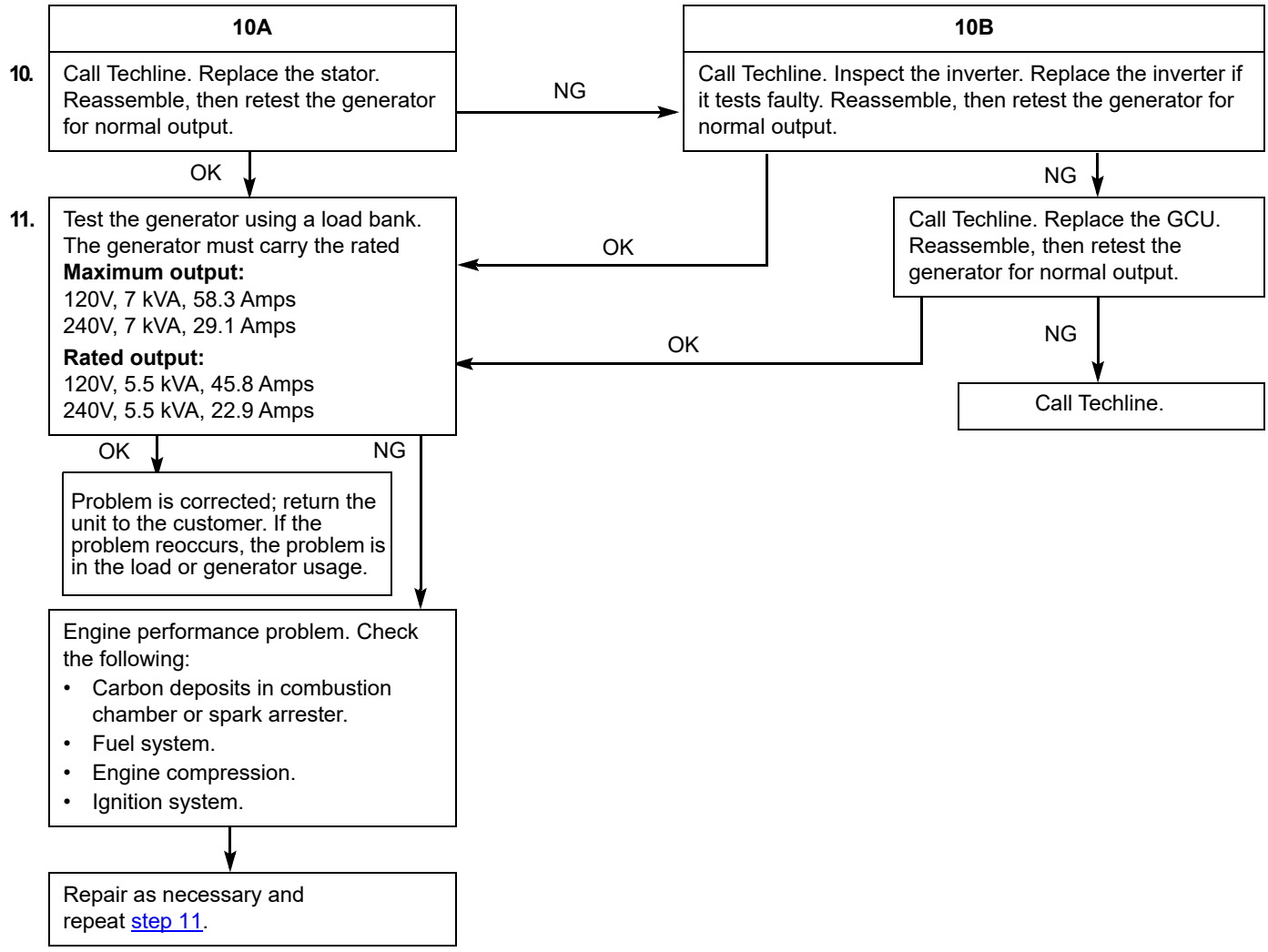
Terminals (#)	Specified Voltage	Generator Test Points
CONNECTOR (4) 1 and 2 1 and 3 2 and 3 **CONNECTOR** (5) 1 and 2 1 and 3 2 and 3	15 VAC or more	

9. Measure the resistance between the terminals at the locations shown.

Terminals (#)	Specified Resistance	Generator Test Points
CONNECTOR (4) 1 and 2 1 and 3 2 and 3 **CONNECTOR** (5) 1 and 2 1 and 3 2 and 3	0.44 - 0.62 Ω	

NG ↓ Proceed to step 10A on the next page.

OK ↓ Proceed to step 10B on the next page.



Date Revised: March 2021 (PSV52522-S)

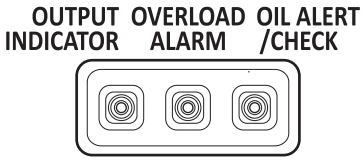
TROUBLESHOOTING BY ERROR CODE

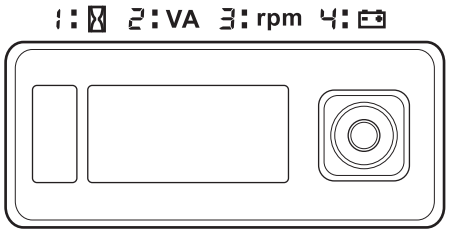
SELF-DIAGNOSTIC FUNCTION

The generator control unit (GCU) has a self-diagnosis function.

When it detects a fault, it notifies the operator by flashing an error code and turning on or flashing the overload indicator.

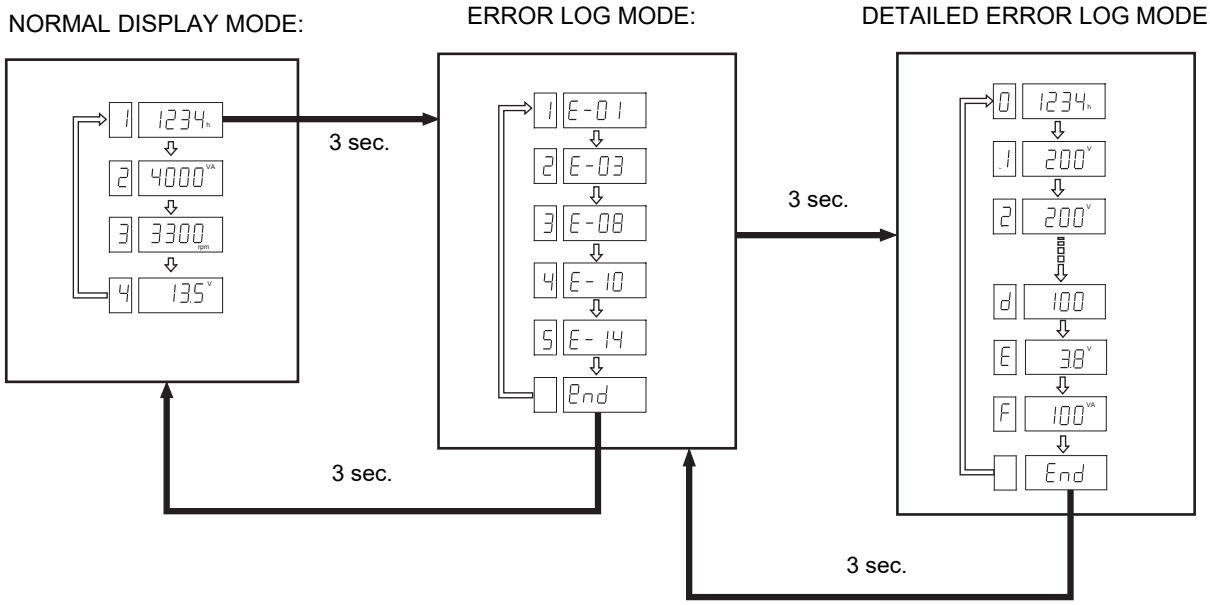
When an error code appears on the i-Monitor, troubleshoot using the error code index.



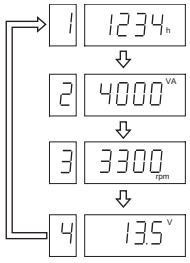


LAMP	COLOR	Content/Signal
Output indicator	Green	Turns on when there is AC voltage output from the receptacle
Overload indicator	Red	Turns on when an external abnormality such as excessive current is detected
Check/Oil Alert indicator	Red	Turns on when the oil level is low, or blinks when a GCU malfunction is detected

HOW TO DISPLAY THE ERROR LOG



NORMAL DISPLAY MODE:



Engine run time (hour)

Generator output (VA)

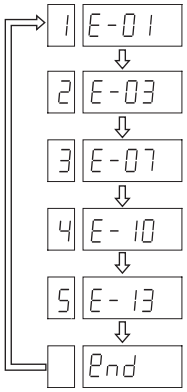
Engine speed (rpm)

Battery voltage (V)

When you turn the main switch to the ON position, the i-Monitor displays the engine run-time.

Every time you press the display button, the display will show the generator output, the engine speed, and the battery voltage in this sequence.

ERROR LOG MODE:



Error log 1 Error code

Error log 2 Error code

Error log 3 Error code

Error log 4 Error code

Error log 5 Error code

End

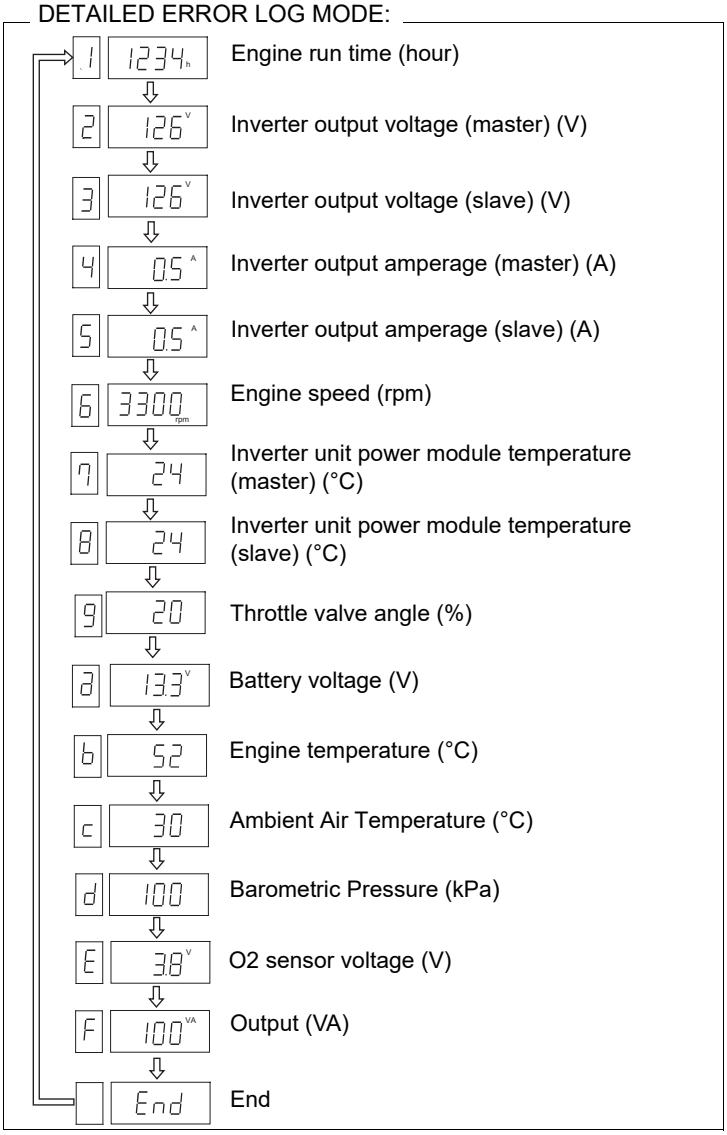
When you press the display button longer than 3 seconds, while in the Engine run time (hour) mode, the i-Monitor goes into the error log mode, displaying error codes for previous incidents.

Every time you press the display button, the display will show the five latest error codes in the order from the newest to the oldest. When END appears in this mode, press the display button longer than 3 seconds to change the display back to the normal display mode.

EU Models

Date Revised: March 2021 (PSV52522-S)

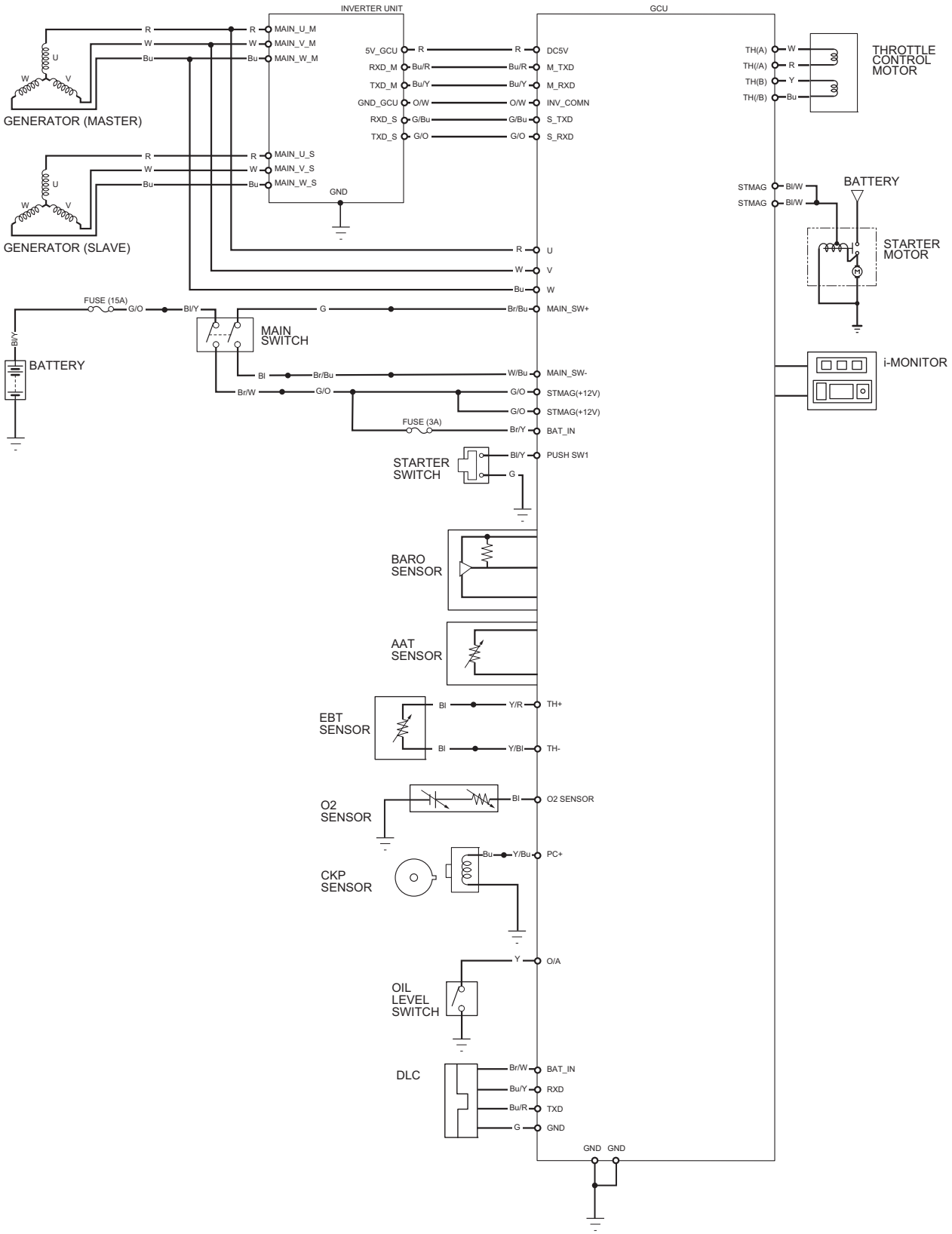
DETAILED ERROR LOG MODE:



When you press the display button longer than 3 seconds on an error code, the display goes into a detailed error log mode, and it shows the engine run-time, generator output, engine speed, inverter temperature, throttle angle, battery voltage, engine temperature, outside air temperature, barometric pressure, O2 sensor voltage, and generator output in volt-amperes (VA) for the incident in this sequence.

When END appears in this mode, press the display button longer than 3 seconds to change the display back to the error log mode.

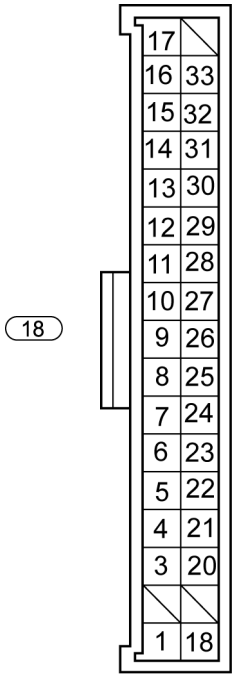
SYSTEM DIAGRAM



EU Models

TERMINAL ARRANGEMENT

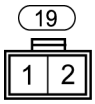
GCU 34P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	R	FFP (+)	Fuel pump	Fuel pump power
3	G	GND	(GND2)	GCU ground
4	Bu	FFP (-)	Fuel pump	Fuel pump output
5	W/G	PUSH_SW2	Remote control box	Remote control starter switch input
6	G/Bu	PL (REM)	Remote control box	Remote control indicator light output
7	Bl/W	STMAG	Starter magnetic switch	Stater motor output
8	Bl/W	STMAG	Starter magnetic switch	Stater motor output
9	G/O	STMAG (+12)	Main switch	Starter magnetic switch power
10	G/O	STMAG (+12)	Main switch	Starter magnetic switch power
11	W/Bu	MAIN_SW-	Main switch	Main switch minus side
12	Br/Bu	MAIN_SW+	Main switch	Main switch plus side
13	Br/Y	BAT_IN	Main switch	Battery 12V input voltage
14	W	TH (A)	Throttle control motor	Throttle control motor phase (A) output
15	R	TH (/A)	Throttle control motor	Throttle control motor phase (/A) output
16	Bu	TH (/B)	Throttle control motor	Throttle control motor phase (/B) output
17	Y	TH (B)	Throttle control motor	Throttle control motor phase (B) output
18	W	INJ (+)	Fuel injector	Fuel injector power
20	G	GND	(GND2)	GCU ground
21	Y	INJ (-)	Fuel injector	Fuel injector output
22	O/W	INV_COMN	Inverter unit	Inverter unit ground
23	G/O	S_RXD	Inverter unit	Inverter communication (Slave receive)
24	G/Bu	S_TXD	Inverter unit	Inverter communication (Slave transmit)
25	Bu/R	M_TXD	Inverter unit	Inverter communication (Master transmit)
26	Bu/Y	M_RXD	Inverter unit	Inverter communication (Master receive)
27	Y/Bl	TH-	EBT sensor	EBT sensor ground
28	Y	O/A	Oil level switch	Oil level switch input
29	Bl/Y	PUSH_SW1	Starter switch	Starter switch input
30	R	DC5V	Inverter unit	5V supply to Inverter
31	Bl	O2 SENSOR	O2 sensor	O2 sensor input
32	Y/R	TH+	EBT sensor	EBT sensor input
33	Y/Bu	PC+	CKP sensor	CKP sensor input

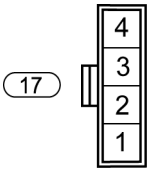
GCU 2P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	Bl/G	IGN-	Ignition coil	Ignition coil output
2	Bl	IGN+	Ignition coil	Ignition coil power

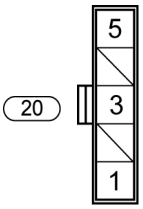
GCU 4P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	G	GND	DLC	Dr. H communication ground
2	Bu/R	TXD	DLC	Dr. H communication transmit
3	Bu/Y	RXD	DLC	Dr. H communication receive
4	Br/W	BAT_IN	DLC	Dr. H communication power

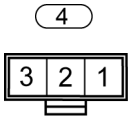
GCU 5P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	Bu	W	Generator (Master)	Generator (W-phase input)
3	W	V	Generator (Master)	Generator (V-phase input)
5	R	U	Generator (Master)	Generator (U-phase input)

INVERTER UNIT 3P CONNECTOR

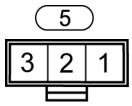


Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	R	MAIN_U_M	Generator (Master)	Generator Master (U-phase input)
2	W	MAIN_V_M	Generator (Master)	Generator Master (V-phase input)
3	Bu	MAIN_W_M	Generator (Master)	Generator Master (W-phase input)

Date Revised: March 2021 (PSV52522-S)

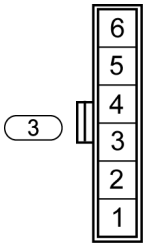
INVERTER UNIT 3P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	R	MAIN_U_S	Generator (Slave)	Generator Slave (U-phase input)
2	W	MAIN_V_S	Generator (Slave)	Generator Slave (V-phase input)
3	Bu	MAIN_W_S	Generator (Slave)	Generator Slave (W-phase input)

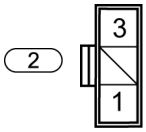
INVERTER UNIT 6P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	G/O	TXD_S	GCU	Generator (Slave) signal transmit
2	G/Bu	RXD_S	GCU	Generator (Slave) signal receive
3	O/W	GND_GCU	GCU	Communication ground
4	Bu/Y	TXD_M	GCU	Generator (Master) signal transmit
5	Bu/R	RXD_M	GCU	Generator (Master) signal receive
6	R	5V_GCU	GCU	5 V input voltage

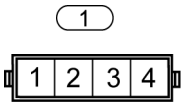
INVERTER UNIT 3P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	R/W	GND	Eco Throttle switch	Eco Throttle switch ground
3	R	ECO_SW	Eco Throttle switch	Eco Throttle switch output signal

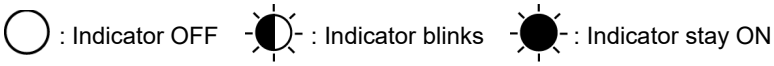
INVERTER UNIT 4P CONNECTOR



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Terminal number	Wire color	Terminal mark	Connection	Signal (function)
1	Gr	AC2_S	Voltage selector switch	Sine wave output (–)
2	Bu	AC1_S	Voltage selector switch	Sine wave output (+)
3	R	AC1_M	Receptacle	Sine wave output (+)
4	W	AC2_M	Receptacle	Sine wave output (–)

ERROR CODE INDEX



Error code	Overload indicator	Check/ Oil Alert indicator	Error name	Detection condition	Error recognition number of times	Fail-safe
batt	○	○	Battery under charged	Battery voltage is less than specification; cannot crank the engine.	1	When pushing the starter switch with main switch turned ON, the starter motor is stopped
OIL	○	☀	Insufficient oil	Engine oil level is lower than specification, or there is a short circuit in oil level switch circuit.	1	Engine is stopped
E-00	○	◐	Starting system failure	Engine speed pulse cannot be detected when the engine is cranked with starter motor.	1	When pushing the starter switch with main switch turned ON, the starter motor is stopped
E-01	○	◐	Starter switch input failure	Starter switch remains ON for more than specified period.	1	Display only
E-02	○	◐	Abnormal battery voltage	Battery voltage is high.	1	Engine is stopped
E-03	○	◐	EBT sensor failure	Engine temperature is higher than specification, or an open or short circuit in sensor circuit is detected.	1	Engine is stopped
E-04	○	◐	Engine speed failure	Engine speed is higher than specification.	2	Engine is stopped
E-05	○	◐	GCU internal failure (SW power output error)	Voltage at GCU internal power switch is higher or lower than specification.	2	Engine is stopped
E-06	○	◐	Generator pulse failure	Difference between the speed at generator and CKP sensor is detected.	2	Engine is stopped
E-07	○	◐	GCU internal failure (RAM error)	GCU internal memory registry error is detected.	1	Engine is stopped
E-0A	○	◐	Air/fuel ratio failure	Programmed air/ fuel ratio is not obtained.	3	Engine is stopped

EU Models

Date Revised: March 2021 (PSV52522-S)

*: No error code displayed. Can be displayed in Error log mode (page EU-94).

Error code	Overload indicator	Check/ Oil Alert indicator	Error name	Detection condition	Error recognition number of times	Fail-safe
E-10 E-20	○	◐	Inverter unit and GCU communication error	Communication error between the inverter and GCU is detected.	2	Engine is stopped
E-11 E-21	○	◐	Inverter unit internal communication error	Communication error between the master inverter and slave inverter is detected.	1	Engine is stopped
* E-12 E-22	●	○	Inverter unit excessive current protection activated	Excessive current caused by overload is detected.	1	After shutting down the AC output, the engine is left running at 2,400 rpm.
* E-13 E-23	●	○	Inverter unit excessive voltage protection activated	Excessive voltage caused by internal failure is detected.	1	After shutting down the AC output, the engine is left running at 2,400 rpm.
* E-15 E-25	●	○	Inverter unit overheated protection activated	FET device/power module temperature in the inverter exceeds the specified value.	1	After shutting down the AC output, the engine is left running at 2,400 rpm.
E-16 E-26	○	◐	Inverter unit internal failure (A/D input error)	There is abnormality in the figure monitored by the inverter.	2	Engine is stopped
E-17 E-27	○	◐	Inverter unit internal failure (FET open)	There is abnormality in the FET device in the inverter.	2	Engine is stopped
E-19 E-29	○	◐	Inverter unit internal failure (FET short)	There is abnormality in the FET device in the inverter.	1	Engine is stopped
E-1A E-2A	○	◐	Inverter unit internal failure (Diode line short)	There is abnormality in the diode in the inverter.	1	Engine is stopped
E-1b E-2b	○	◐	Inverter unit internal failure (SCR short)	There is abnormality in the SCR in the inverter.	1	Engine is stopped
E-1c E-2c	○	◐	RAM/ROM failure	Inverter internal memory registry error is detected.	1	Engine is stopped
* E-1E E-2E	●	○	Inverter unit short protection activated	Excessive current caused by a short circuit is detected.	1	After shutting down the AC output, the engine is left running at 2,400 rpm.
E-50	○	◐	AAT sensor (GCU internal) failure	AAT sensor in the GCU abnormality is detected.	1	Display only

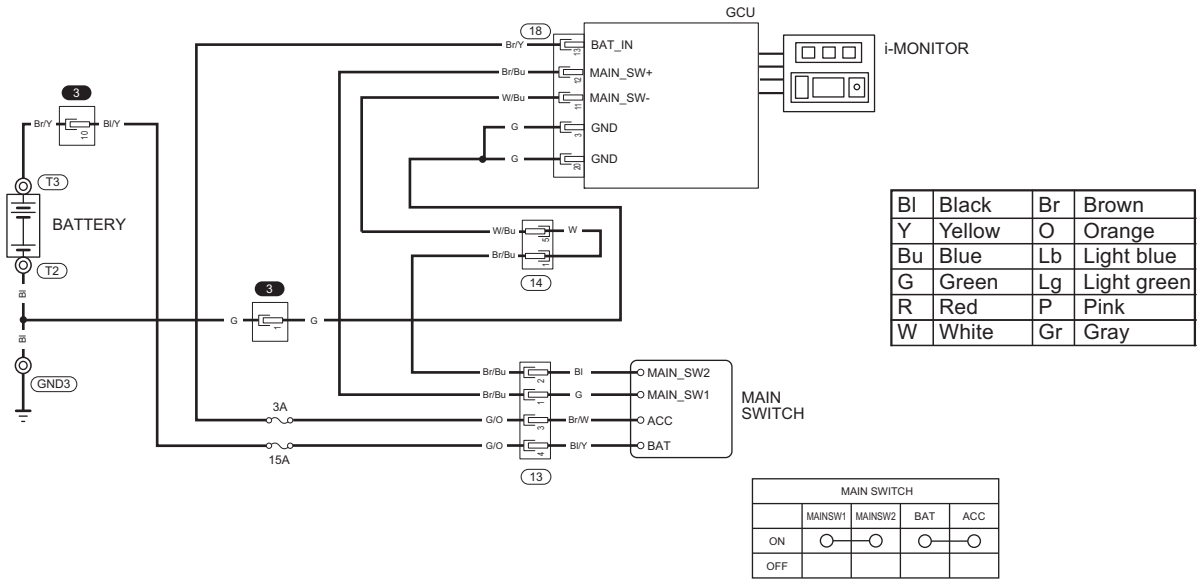
EU Models

Error code	Overload indicator	Check/ Oil Alert indicator	Error name	Detection condition	Error recognition number of times	Fail-safe
E-51	◯	☀	BARO sensor (GCU internal) failure	BARO sensor in the GCU abnormality is detected.	1	Display only
E-53	◯	☀	O2 sensor failure	An open or short circuit in O2 sensor circuit is detected.	3	Engine is stopped
E-56	◯	☀	Fuel level sensor failure	An open or short circuit in fuel level sensor circuit is detected.	1	Display only

Date Revised: November 2021 (PSV52522-T)

i-MONITOR DOES NOT DISPLAY WITH MAIN SWITCH TURNED ON

When turning the main switch to ON, the i-Monitor is on if a known-good battery is used.



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

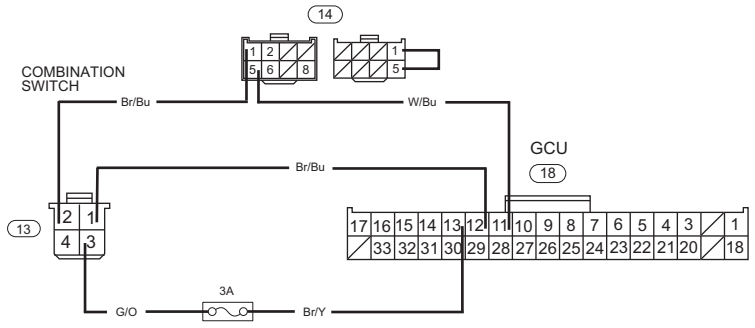
MAIN SWITCH				
	MAINSW1	MAINSW2	BAT	ACC
ON	○	○	○	○
OFF				

Check the fuses.
- Blown → Replace the fuse.
- Good ↓

Check the " i-MONITOR DOES NOT DISPLAY" of the GCU inspection (page EU-126).
- Abnormal → Replace the GCU.
- Normal ↓

Check the main switch.
- Abnormal → Replace the main switch.
- Normal ↓

Check the wire harness between the main switch and GCU for an open or short circuit.
- Abnormal → Replace or repair the wire harness.



- Normal ↓

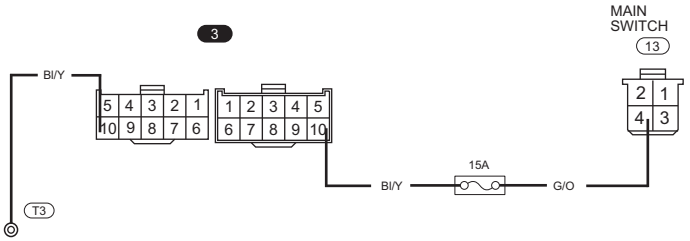
Go to the next page.

EU Models

From the previous page.

Check the wire harness between the battery and main switch for an open or short circuit.

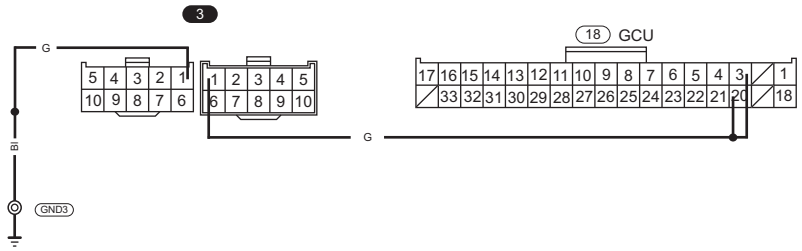
Abnormal → Replace or repair the wire harness.



Normal

Check the wire harness between the GCU and ground for an open circuit.

Abnormal → Replace or repair the wire harness.



Normal

Replace the GCU and recheck.

bAtt (Battery under charged)

Check the battery condition, using a battery tester.

Abnormal → Replace or recharge the battery.

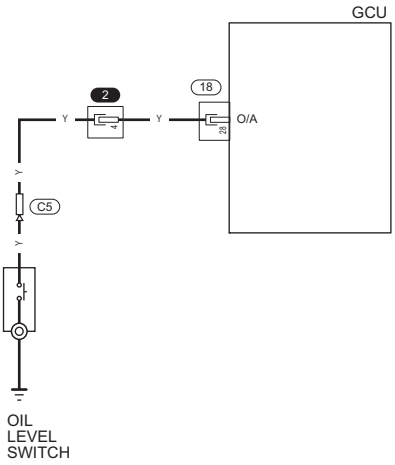
Normal

Perform the engine start procedure and check to see if an error code is displayed. If the same condition exists, replace the GCU and recheck.

EU Models

Date Revised: March 2021 (PSV52522-S)

OIL (Insufficient oil)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the oil level.

Abnormal → Add the recommended oil to the proper level.

Normal

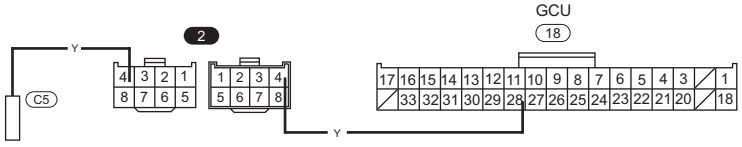
Check the oil level switch.

Abnormal → Replace the oil level switch.

Normal

Check the wire harness between the battery and GCU for an open or short circuit.

Abnormal → Replace or repair the wire harness.

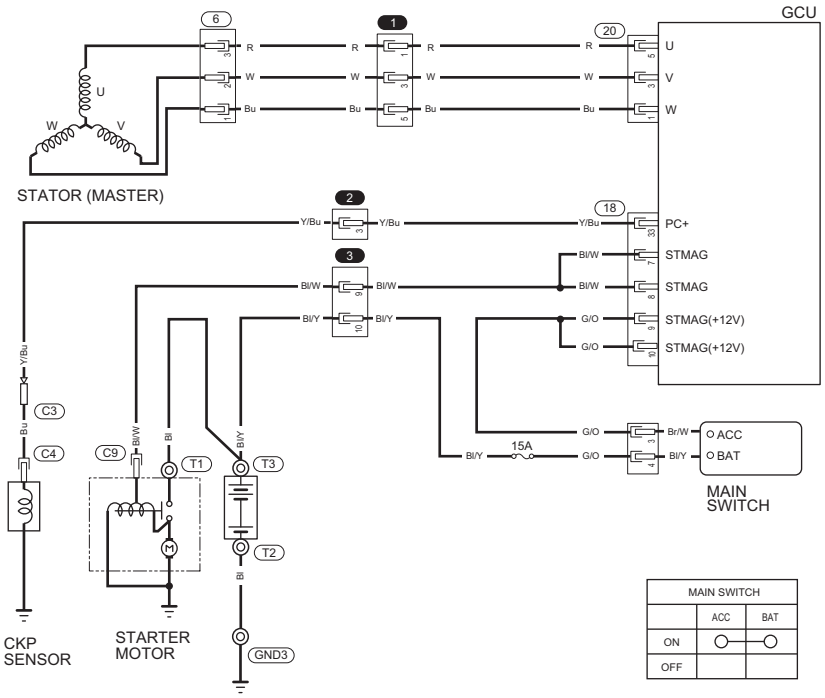


Normal

Perform the engine start procedure and check to see if an error code is displayed. If the same condition exists, replace the GCU and recheck.

EU Models

E-00 (Starting system failure)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the battery condition, using a battery tester.

Abnormal → Replace or recharge the battery.

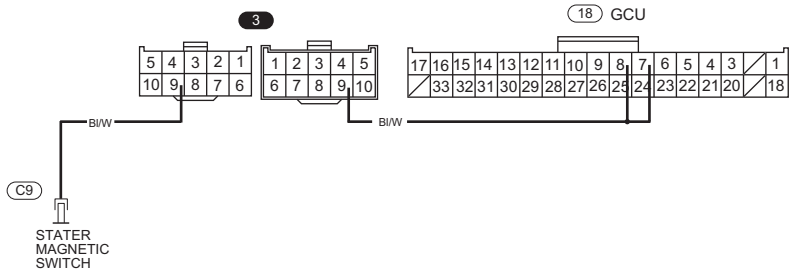
Normal ↓

Check the "PUSH THE STARTER SWITCH BUT STARTER MOTOR DOES NOT TURN" of the GCU inspection (page EU-126).

Abnormal → Replace the GCU.

Normal ↓

Check the wire harness between the starter motor and GCU for an open or short circuit.



Abnormal → Replace or repair the wire harness.

Normal ↓

Check the CKP sensor.

Abnormal → Replace the CKP sensor.

Normal ↓

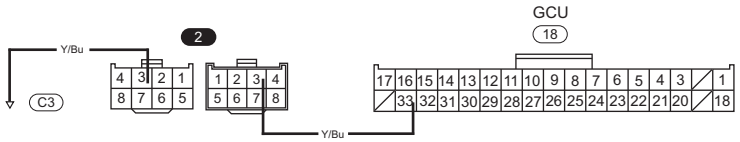
Go to the next page.

EU Models

Date Revised: March 2021 (PSV52522-S)

From the previous page.

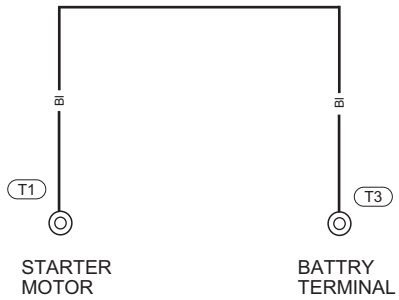
Check the wire harness between the CKP sensor and GCU for an open or short circuit.



Abnormal → Replace or repair the wire harness.

Normal

Check the motor cable between the battery and starter motor for an open circuit.



Abnormal → Replace or repair the wire harness.

Normal

Check the starter motor.

Abnormal → Replace or repair the starter motor.

Normal

Check the CKP sensor air gap.

Abnormal → Adjust the CKP sensor air gap.

Normal

Go to the next page.

EU Models

From the previous page.

Check the flywheel ring gear.

Abnormal → Replace the flywheel.

Normal

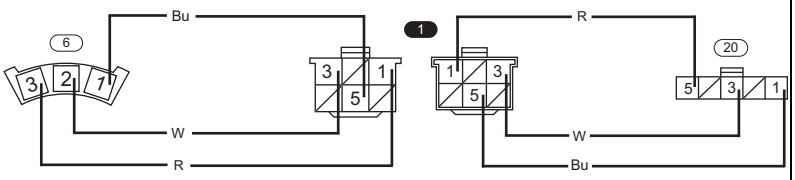
Check the stator coil resistance (page EU-127).

Abnormal → Call Techline before replacing the stator.

Normal

Check the wire harness between the generator and GCU for an open or short circuit.

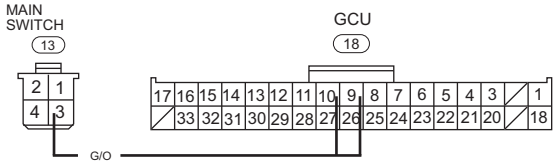
Abnormal → Replace or repair the wire harness.



Normal

Check the wire harness between the main switch and GCU for an open circuit.

Abnormal → Replace or repair the wire harness.



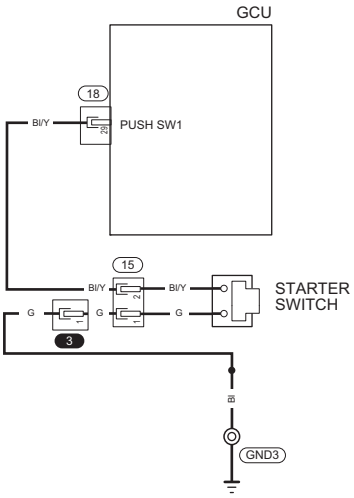
Normal

Turn the main switch ON and push the starter switch. Check to see if an error code is displayed. If the same error code occurs, replace the GCU and recheck.

EU Models

Date Revised: March 2021 (PSV52522-S)

E-01 (Starter switch input failure)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the starter switch.

Abnormal → Replace the starter switch.

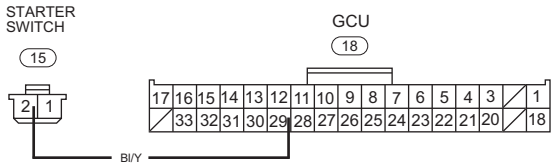
Normal

Check the "STARTER MOTOR TURNS AT THE MAIN SWITCH TURNED ON" of the GCU inspection (page EU-126).

Abnormal → Replace the GCU.

Normal

Check the wire harness between the starter switch and GCU for a short circuit.



Abnormal → Replace or repair the wire harness.

Normal

Turn the main switch ON and push the starter switch. Check to see if an error code is displayed. If the same error code occurs, replace the GCU and recheck.

EU Models

E-02 (Abnormal battery voltage)

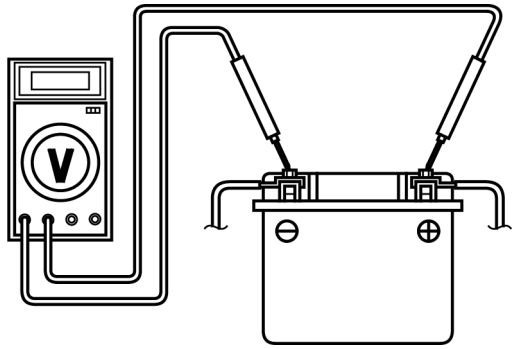
Check the battery voltage. Normal battery voltage should be 12.3 V to 13.2 V with the engine OFF.

Abnormal → Replace the battery.

Normal ↓

With the engine running at normal operating temperature, measure the battery voltage.

The battery voltage should not exceed 14.5 V while the engine is running.



Abnormal → Replace the GCU and recheck.

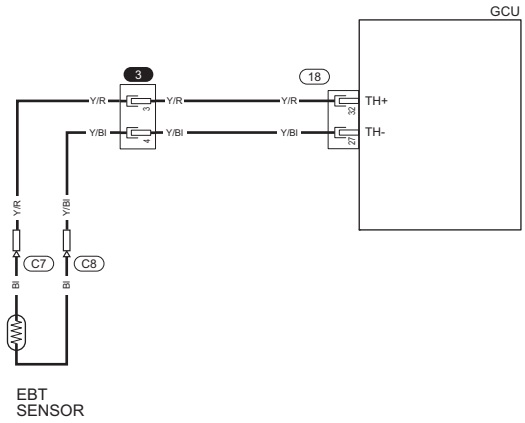
Normal ↓

Perform the engine start procedure and check to see if an error code is displayed. If the same error code occurs, replace the GCU and recheck.

Date Revised: March 2021 (PSV52522-S)

E-03 (EBT sensor failure)

Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray



Check the front cover for blockages in the cooling air passage.

Is blocked → Remove the blockage.

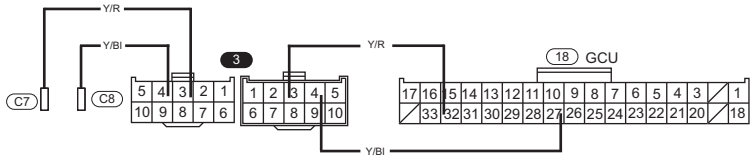
Is not blocked

Check the EBT sensor.

Abnormal → Replace the EBT sensor.

Normal

Check the wire harness between the EBT sensor and GCU for an open or short circuit.



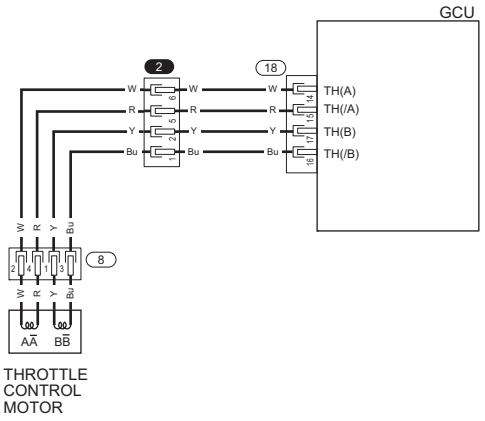
Abnormal → Replace or repair the wire harness.

Normal

Perform the engine start procedure and check to see if an error code is displayed. If the same error code occurs, replace the GCU and recheck.

EU Models

E-04 (Engine speed failure)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Measure the resistance at the throttle control motor.

Abnormal → Replace the throttle control motor.

Normal ↓

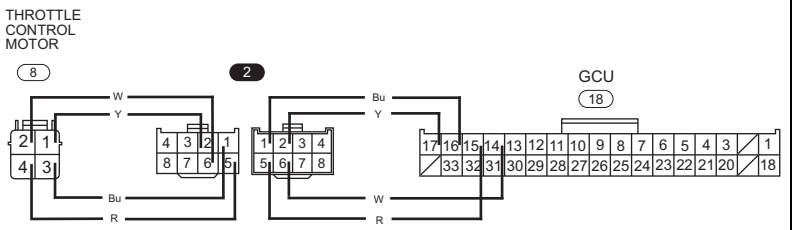
Check the "THROTTLE CONTROL MOTOR DOES NOT MOVE" of the GCU inspection (page EU-126).

Abnormal → Replace the GCU.

Normal ↓

Check the wire harness between the throttle control motor and GCU for an open or short circuit.

Abnormal → Replace or repair the wire harness.



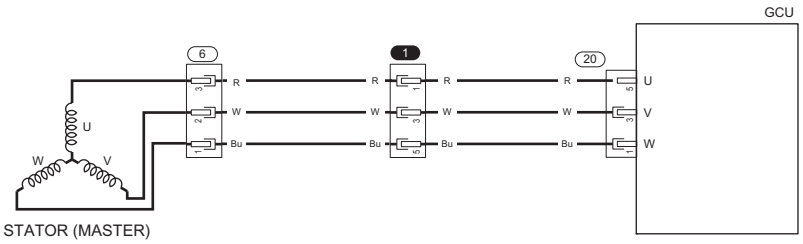
Normal ↓

Perform the engine start procedure twice and check to see if an error code is displayed. If the same error code occurs, replace the GCU and recheck.

EU Models

Date Revised: March 2021 (PSV52522-S)

E-05 (GCU internal failure: SW power output error)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the stator coil resistance (master) (page EU-127).

Abnormal → Call Techline before replacing the stator.

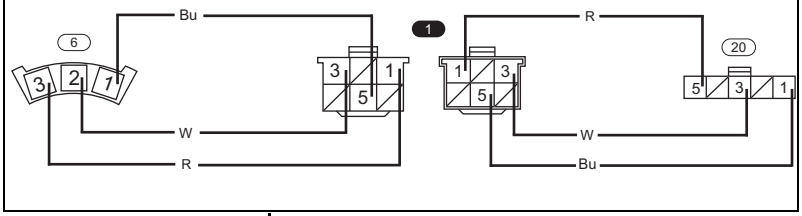
Normal ↓

Check the inverter unit.

Abnormal → Call Techline before replacing the inverter unit.

Normal ↓

Check the wire harness between the generator and GCU for an open or short circuit.

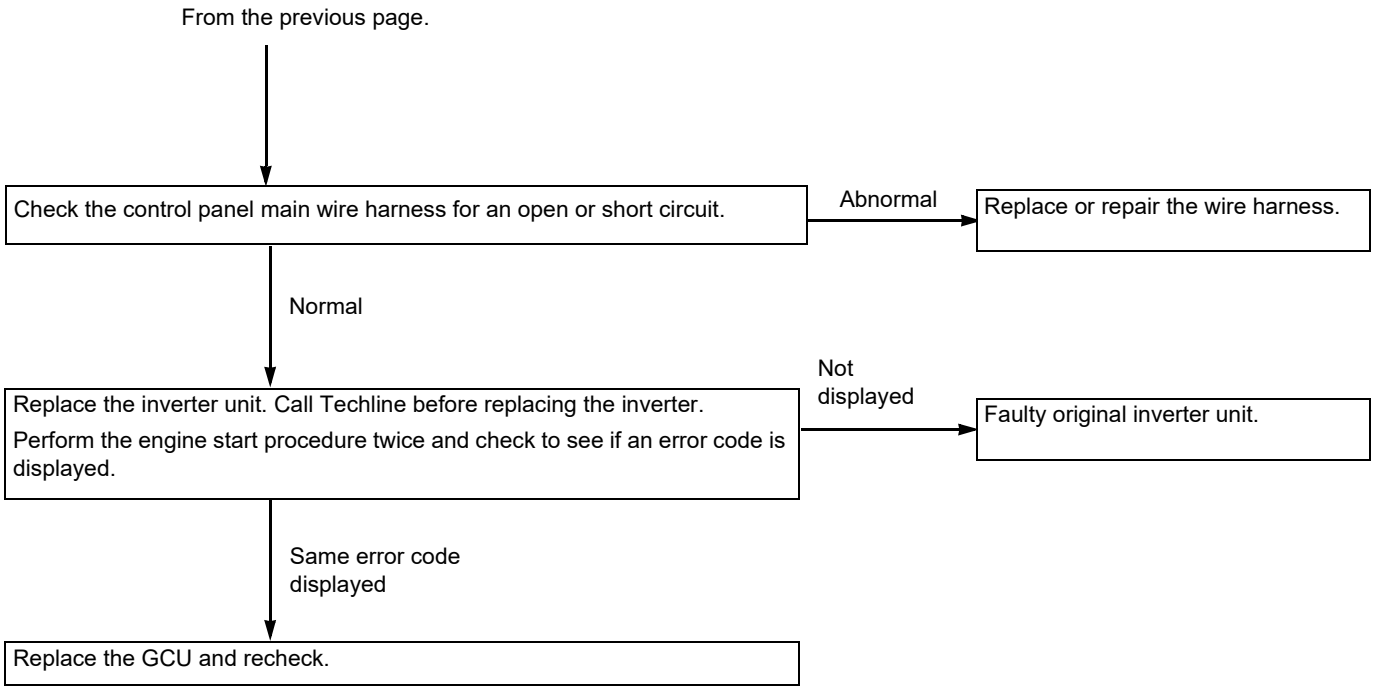


Abnormal → Replace or repair the wire harness.

Normal ↓

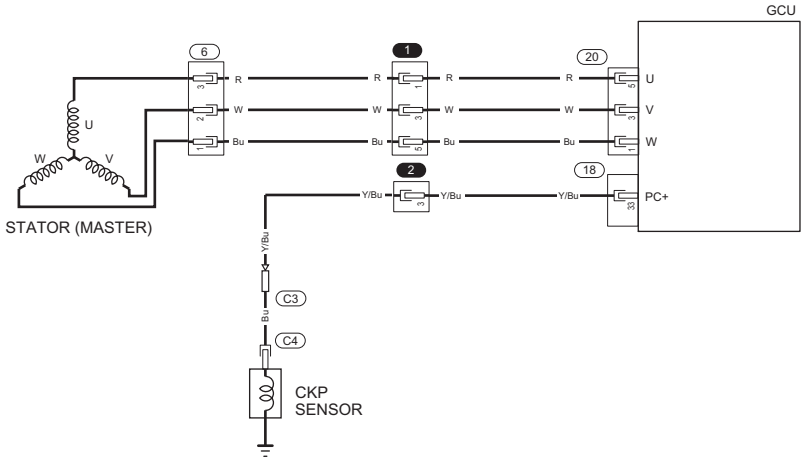
Go to the next page.

EU Models



Date Revised: March 2021 (PSV52522-S)

E-06 (Generator pulse failure)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the stator coil resistance (page EU-127).

Abnormal → Call Techline before replacing the stator.

Normal ↓

Check the "E-06 IS DISPLAYED BY ENGINE STARTS" of the GCU inspection (page EU-126).

Abnormal → Replace the GCU.

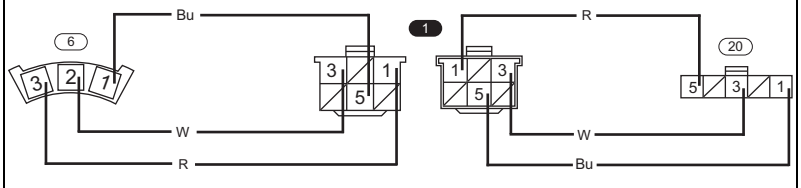
Normal ↓

Check the inverter unit.

Abnormal → Call Techline before replacing the inverter.

Normal ↓

Check the wire harness between the generator and GCU for an open or short circuit.



Abnormal → Replace or repair the wire harness.

Normal ↓

Go to the next page.

EU Models

From the previous page.

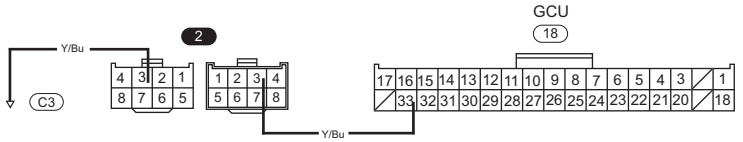
Check the CKP sensor.

Abnormal → Replace the CKP sensor.

Normal

Check the wire harness between the CKP sensor and GCU for an open or short circuit.

Abnormal → Replace or repair the wire harness.



Normal

Check the control panel main wire harness for an open or short circuit.

Abnormal → Replace or repair the wire harness.

Normal

Replace the inverter unit.
Perform the engine start procedure twice and check to see if an error code is displayed.

Not displayed → Faulty original inverter unit.

Same error code displayed

Replace the GCU and recheck.

E-07 (GCU internal failure: RAM error)

1. Perform the engine start procedure.
2. Check to see if an error code is displayed.
   If the same error code occurs, replace the GCU and recheck.

EU Models

E-0A (Air/fuel ratio failure)

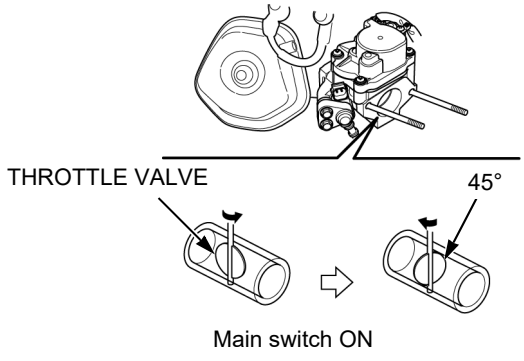
Check the fuel quality.
- No good → Replace the fuel.
- Good ↓

Check the air cleaner element.
- Dirty → Replace the air cleaner element.
- Clean ↓

Check the fuel flow.
- Abnormal →
  - Check whether the fuel feed hose is leaking.
  - Check whether the fuel feed hose is pinched or clogged.
  - Check whether the fuel tank cap breather is pinched or clogged.
  - Check whether the fuel pump filter is clogged.
  - Replace the fuel pump.
- Normal ↓

Check the fuel pump pressure.
- Abnormal →
  - Check whether the fuel pump filter is clogged.
  - Check whether the fuel feed hose is pinched or clogged.
  - Replace the fuel pump.
- Normal ↓

Disconnect the fuel injector 2P connector and spark plug cap.
Check whether the throttle valve is fully open when the main switch is ON and the starter switch is pressed.
- Abnormal → Check the throttle control motor.



- Normal ↓

Check the O2 sensor (E-53).
- Abnormal →
  - Replace or repair the O2 sensor circuit.
  - Replace the O2 sensor
- Normal ↓

Go to the next page.

From the previous page.

Replace the fuel injector.

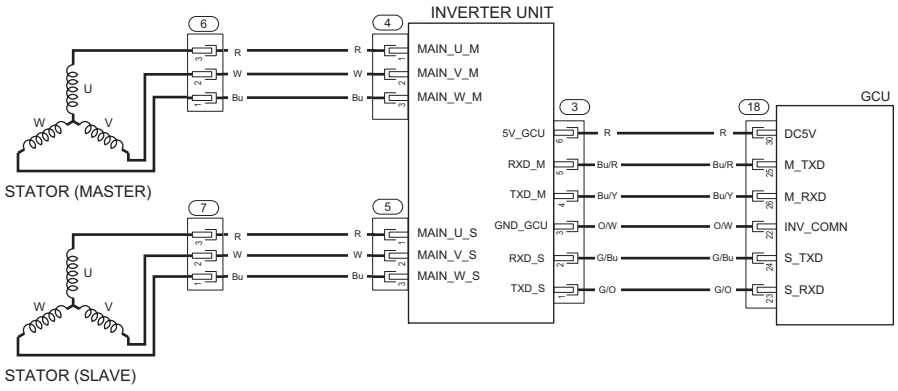
Perform the engine start procedure three times and check to see if an error code is displayed.

Not displayed → Faulty original fuel injector.

Same error code displayed

Replace the GCU and recheck.

E-10, E-20 (Inverter unit and GCU communication error)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the stator (page EU-127). → Abnormal → Call Techline before replacing the stator.

Normal

Check the inverter unit. → Abnormal → Call Techline before replacing the inverter unit.

Normal

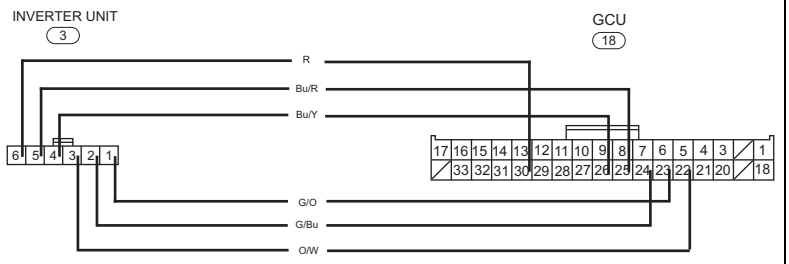
Go to the next page.

EU Models

From the previous page.

Check the wire harness between the inverter unit and GCU for an open or short circuit.

Abnormal → Replace or repair the wire harness.



Normal

Replace the inverter unit.

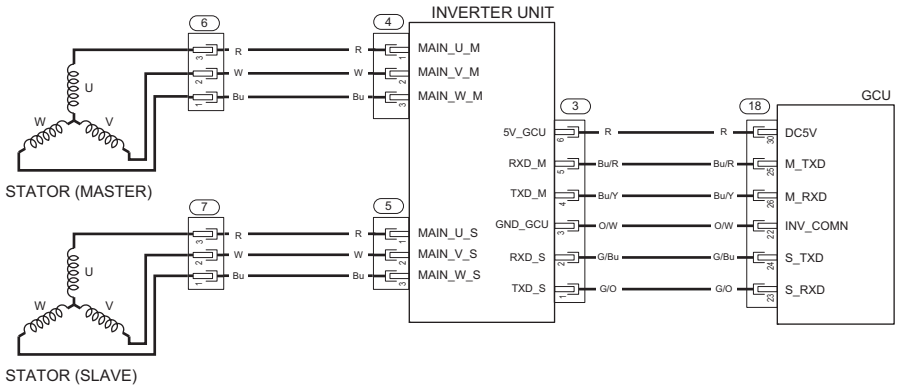
Perform the engine start procedure twice and check to see if an error code is displayed.

Not displayed → Faulty original inverter unit.

Same error code displayed

Replace the GCU and recheck.

E-11, E-21 (Inverter unit internal communication error)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the stator (page EU-127).

Abnormal → Call Techline before replacing the stator.

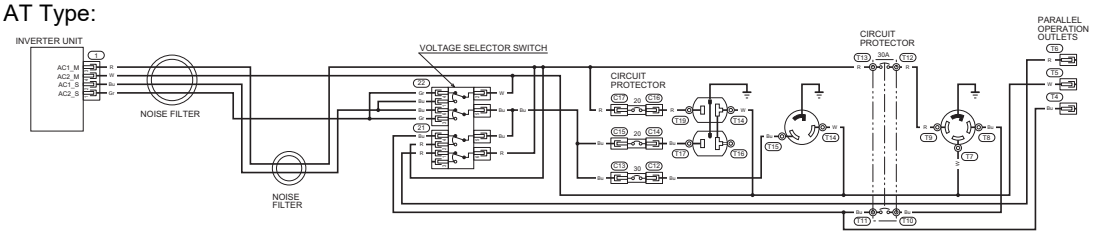
Normal

Perform the engine start procedure and check to see if an error code is displayed. If the same error code occurs, replace the inverter unit and recheck. Call Techline before replacing the inverter.

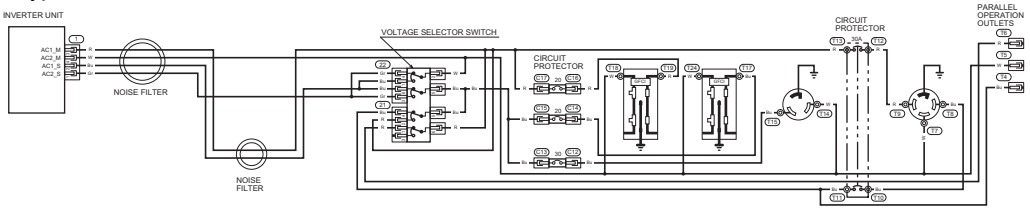
EU Models

E-12, E-13, E-22, E-23
(Inverter unit excessive current protection activated/ Inverter unit excessive voltage protection activated)

AT Type:



AT1 Type:



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Disconnect the AC appliance and stop the engine. Restart the engine and check to see if an error code is displayed in the error log mode.

Not displayed → System is OK (error is cleared).

Same error code displayed ↓

Check the stator (page EU-127).

Abnormal → Call Techline before replacing the stator.

Normal ↓

Check the inverter unit inspection.

Abnormal → Call Techline before replacing the inverter unit.

Normal ↓

Check the control panel main wire harness for an open or short circuit.

Abnormal → Replace or repair the wire harness.

Normal ↓

Restart the engine and check to see if an error code is displayed in the error log mode. If the same error code occurs, replace the inverter unit and recheck. Call Techline before replacing the inverter.

EU Models

Date Revised: March 2021 (PSV52522-S)

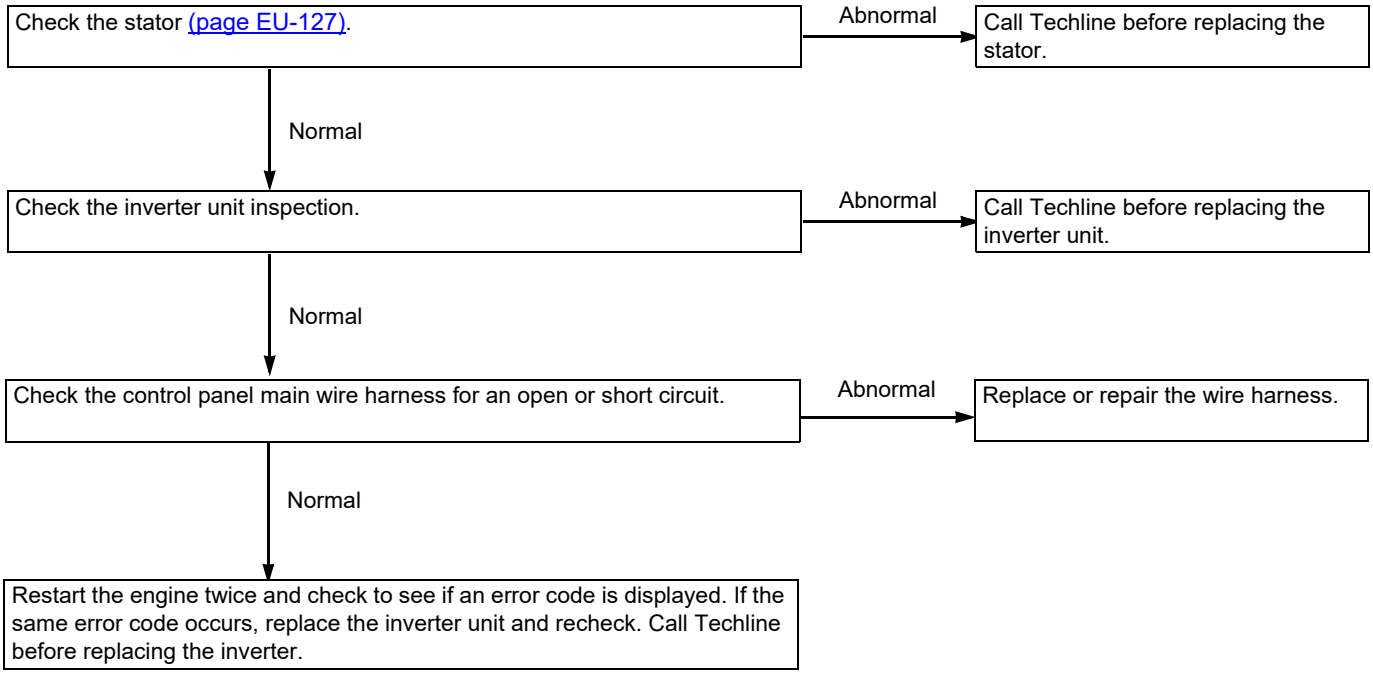
E-15, E-25 (Inverter unit overheated protection activated)

1. Disconnect the AC appliance and stop the engine.
2. Reset the error log (page EU-94) and turn the main switch OFF.
3. Check the front cover cooling air passage for blockages. Remove any blockages.
4. Wait for several minutes.
   With the engine running at normal operating temperature, check to see if an error code is displayed in the error log mode (page EU-94). If the same error code occurs, replace the inverter unit and recheck.

E-16, E-26 (Inverter unit internal failure: A/D input error)

1. Perform the engine start procedure twice.
2. Check to see if an error code is displayed.
   If the same error code occurs, replace the inverter unit and recheck.

E-17, E-19, E-1A, E-1b, E-27, E-29, E-2A, E-2b, (Inverter unit internal failure: FET open/FET short/Diode line short/SCR short)

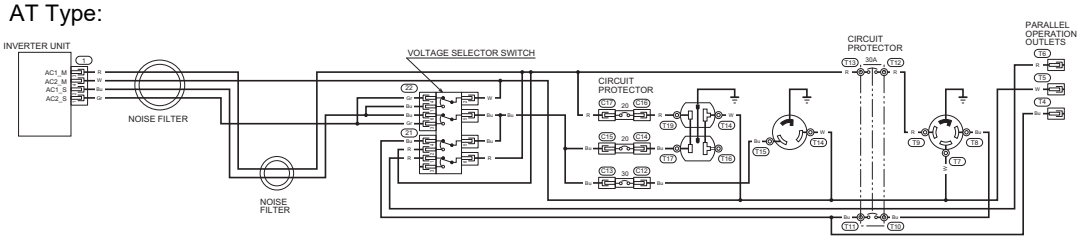


E-1c, E-2c (Inverter unit internal failure: RAM/ROM failure)

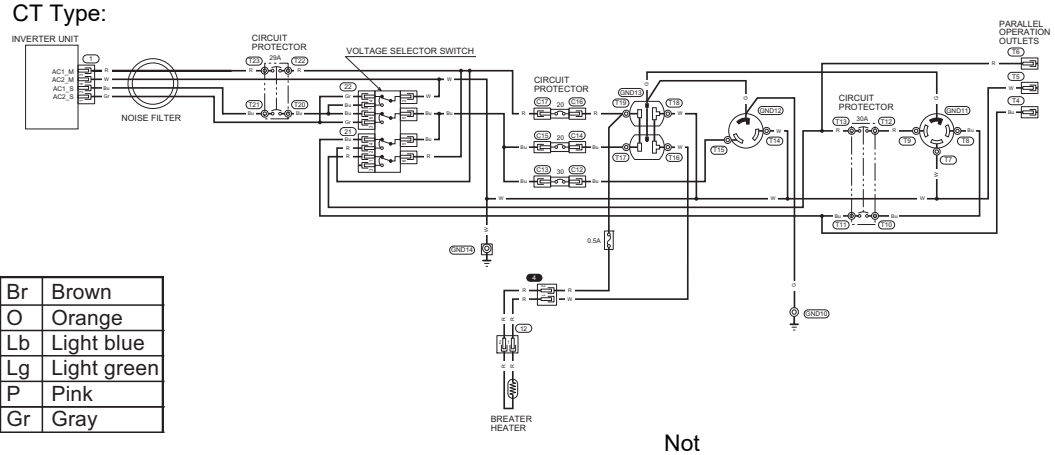
1. Perform the engine start procedure.
2. Check to see if an error code is displayed.
   If the same error code occurs, replace the inverter unit.
3. Perform the engine start procedure.

E-1E , E-2E (Inverter unit short protection activated)

AT Type:



CT Type:



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Disconnect the AC appliance and stop the engine. Restart the engine and check to see if an error code is displayed in the error log mode (page EU-94).

Not displayed → System is OK (error is cleared).

Same error code displayed

Check the stator (page EU-127).

Abnormal → Call Techline before replacing the stator.

Normal

Inspect the inverter unit.

Abnormal → Call Techline before replacing the inverter unit.

Normal

Check the control panel main wire harness for an open or short circuit.

Abnormal → Replace or repair the wire harness.

Normal

Restart the engine and check to see if an error code is displayed in the error log mode. If the same error code occurs, replace the inverter unit and recheck. Call Techline before replacing the inverter.

EU Models

Date Revised: March 2021 (PSV52522-S)

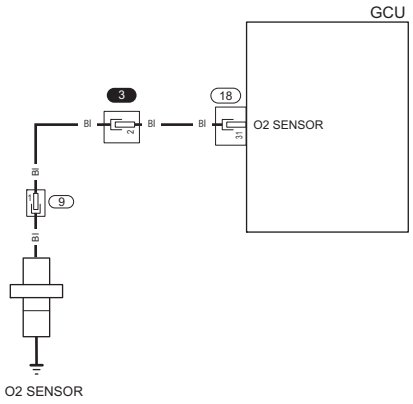
E-50 (AAT sensor failure)

1. Turn the main switch OFF, and then restart the generator.
2. With the engine running at normal operating temperature, check to see if an error code is displayed.
   If the same error code occurs, replace the GCU and recheck.

E-51 (BARO sensor failure)

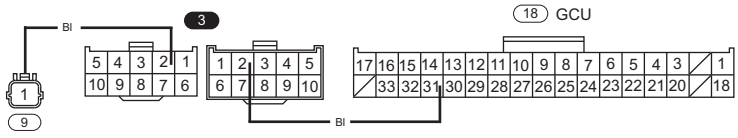
1. Turn the main switch OFF, and then restart the generator.
2. With the engine running at normal operating temperature, check to see if an error code is displayed.
   If the same error code occurs, replace the GCU and recheck.

E-53 (O2 sensor failure)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Check the wire harness between the O2 sensor and GCU for an open or short circuit.

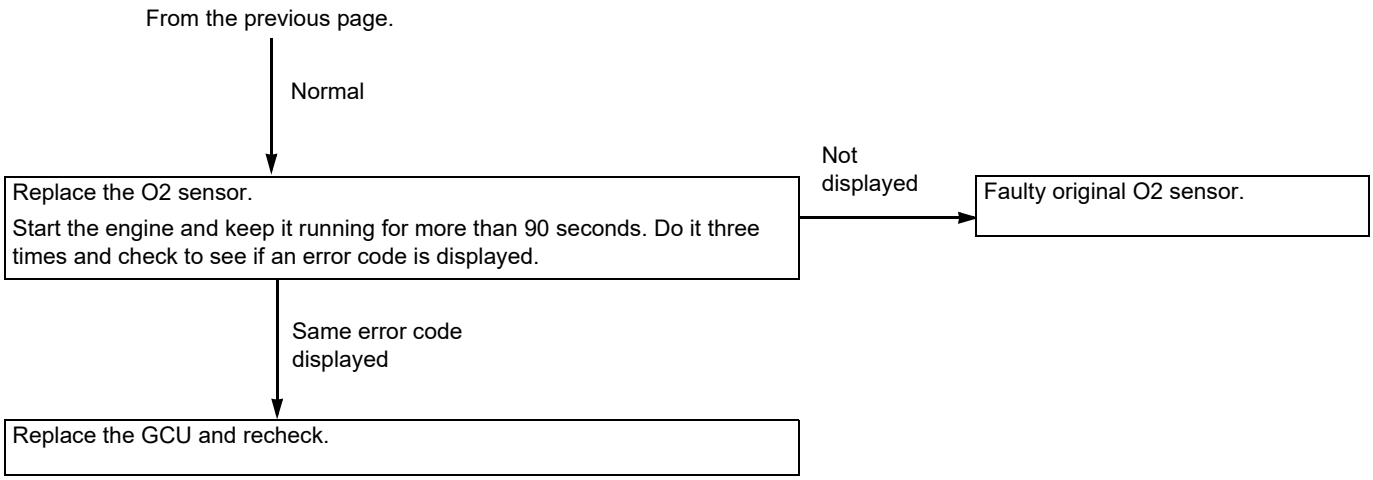


Abnormal → Replace or repair the wire harness.

Normal

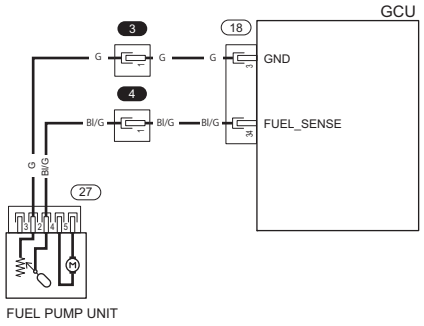
Go to the next page.

EU Models



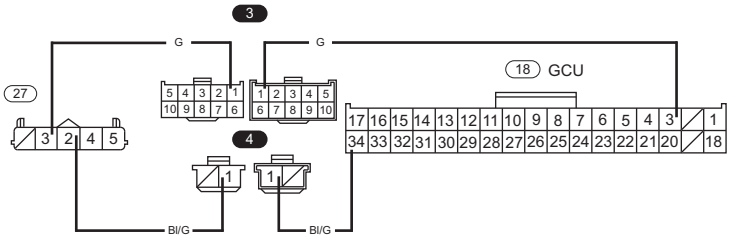
Date Revised: March 2021 (PSV52522-S)

E-56 (Fuel level sensor failure)



Bl	Black	Br	Brown
Y	Yellow	O	Orange
Bu	Blue	Lb	Light blue
G	Green	Lg	Light green
R	Red	P	Pink
W	White	Gr	Gray

Turn the main switch OFF. Check the wire harness between the fuel level sensor and GCU for an open or short circuit.



Abnormal → Replace or repair the wire harness.

Normal

Check the fuel level sensor.

Normal → Replace the GCU and recheck.

Abnormal

Replace the fuel level sensor.
Turn the main switch OFF.
Start the engine. Check to see if an error code is displayed.

Not displayed → Faulty original fuel level sensor.

Same error code displayed

Turn the main switch OFF. Replace the GCU and recheck.

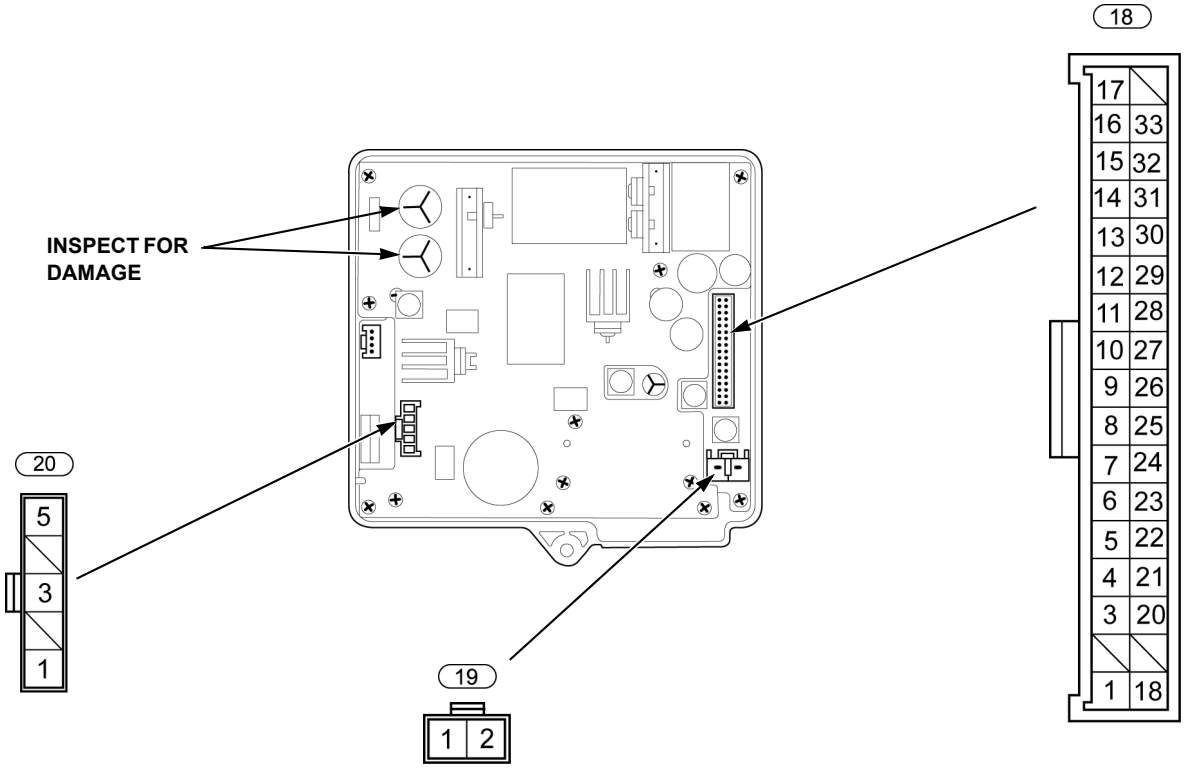
EU Models

GCU INSPECTION

Remove the GCU.

Visually inspect the circuit board on the back side of the GCU for any discolored spots, deterioration, contamination, or deformed capacitors.

Check for continuity between the terminals.



Symptom	Inspection terminals	Standard
i-Monitor does not display	Between the connector (20) No.1, No.3 and No.5	No continuity
No spark at spark plug	Between the connector (18) No.3 and connector (19) No.1	No continuity
	Between the connector (20) No.1, No.3 and No.5	No continuity
Push the starter switch but starter motor does not turn	Between the connector (18) No.3 and No.29	720 – 880 Ω
Throttle control motor does not move	Between the connector (18) No.14, No.15, No.16 and No.17	No continuity
Starter motor turns at the main switch turned ON	Between the connector (18) No.7 and No.9	No continuity
E-06 is displayed by engine starts	Between the connector (20) No.1, No.3 and No.5	No continuity

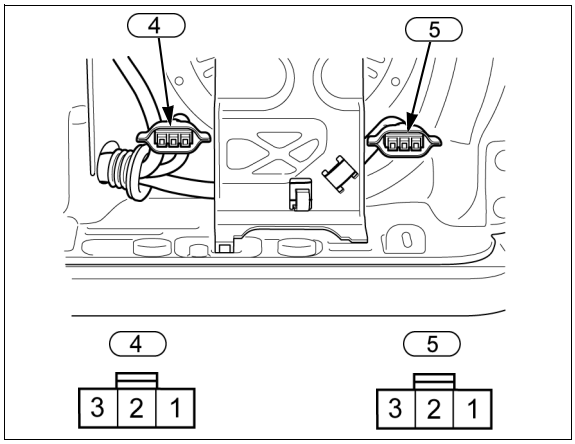
Date Revised: November 2021 (PSV52522-T)

STATOR INSPECTION

Remove the inverter unit.

Pull the recoil starter and measure the voltage between the terminals of the generator 3P connectors (4 and 5) with the generator mounted.

- After generator voltage inspection, reset the error log.



Generator	Connector	Terminal number	Specific voltage
Master	4	1 - 2	AC 15 V or more
		2 - 3	
		1 - 3	
Slave	5	1 - 2	AC 15 V or more
		2 - 3	
		1 - 3	

If the output voltage is less than the standard voltage. Measure the resistance between the terminals of the generator 3P connectors (4 and 5) according to the table below.

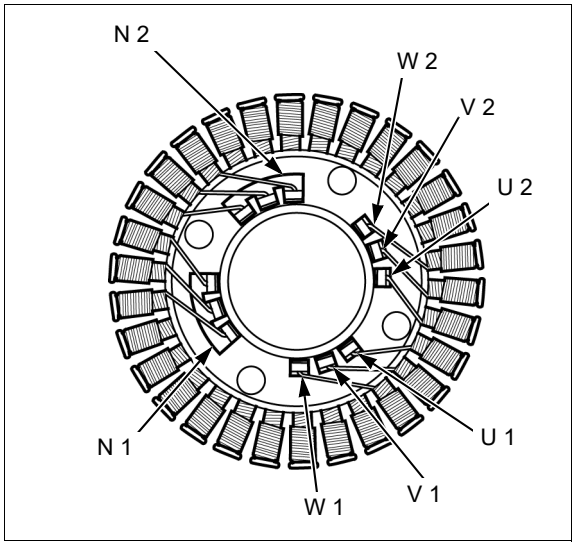
Generator	Connector	Terminal number	Standard resistance
Master	4	1 - 2	0.44 - 0.62 Ω
		2 - 3	
		1 - 3	
Slave	5	1 - 2	0.44 - 0.62 Ω
		2 - 3	
		1 - 3	

If the resistance is out of the specification, check the stator coil resistance according to the table below.

Stator	Terminal number	Standard resistance
Master	N 1 - U 1	0.22 - 0.31 Ω
	N 1 - V 1	
	N 1 - W 1	
Slave	N 2 - U 2	0.22 - 0.31 Ω
	N 2 - V 2	
	N 2 - W 2	

If all resistances are OK, replace or repair the generator wire harness.

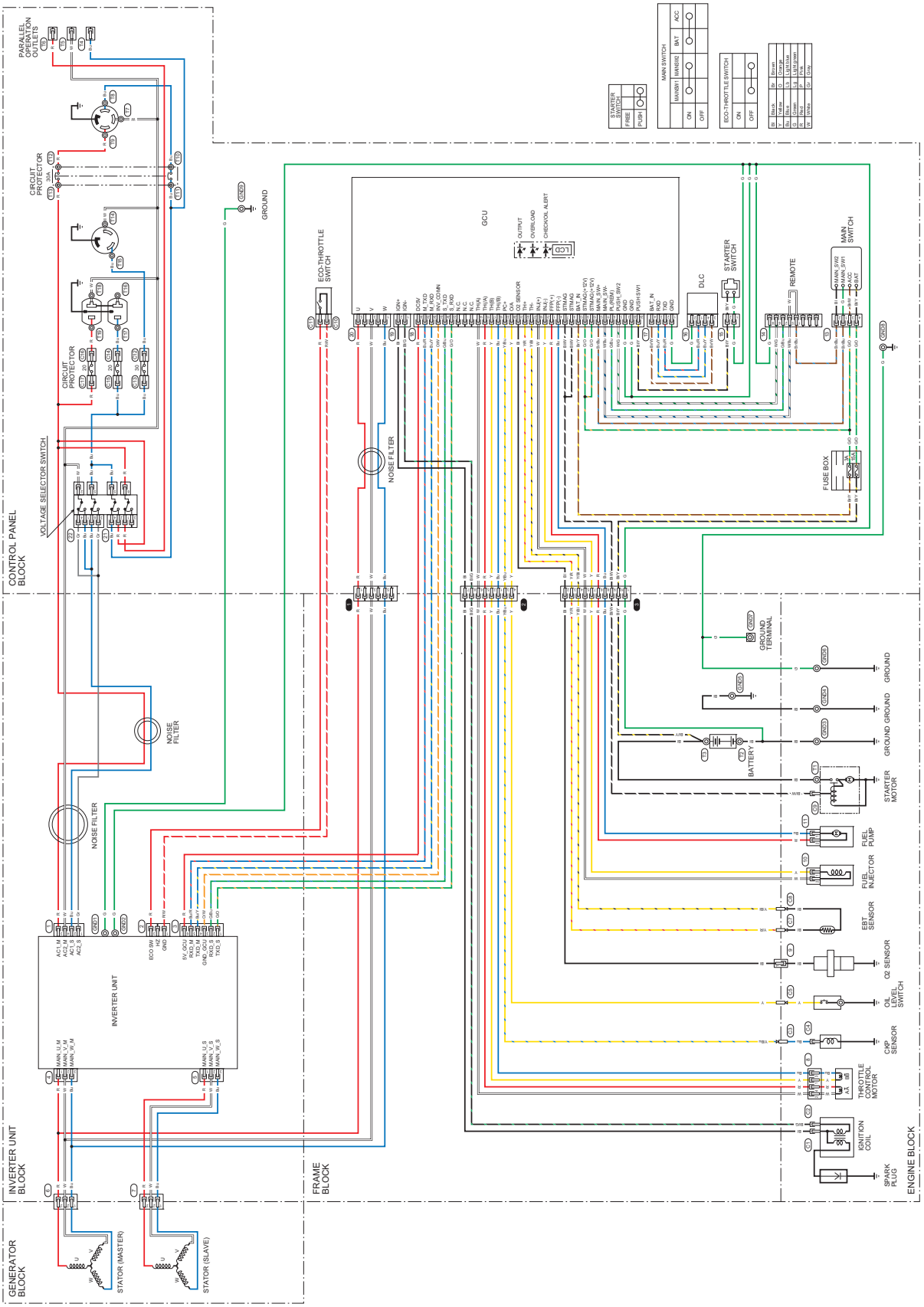
If the resistance is out of specification, replace the stator.



EU Models

WIRING DIAGRAMS

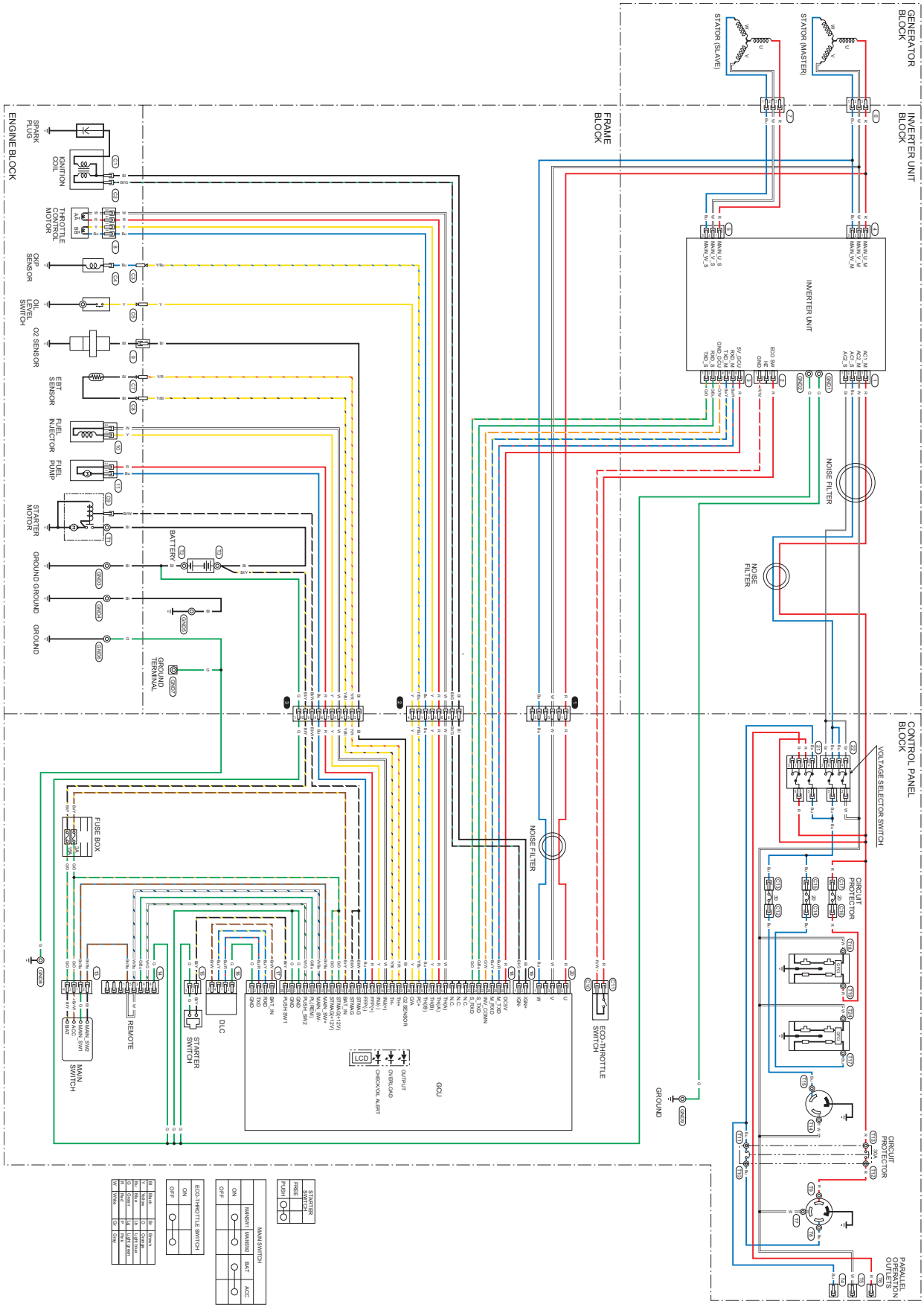
AT Type (non-GFCI duplex receptacles)



EU Models

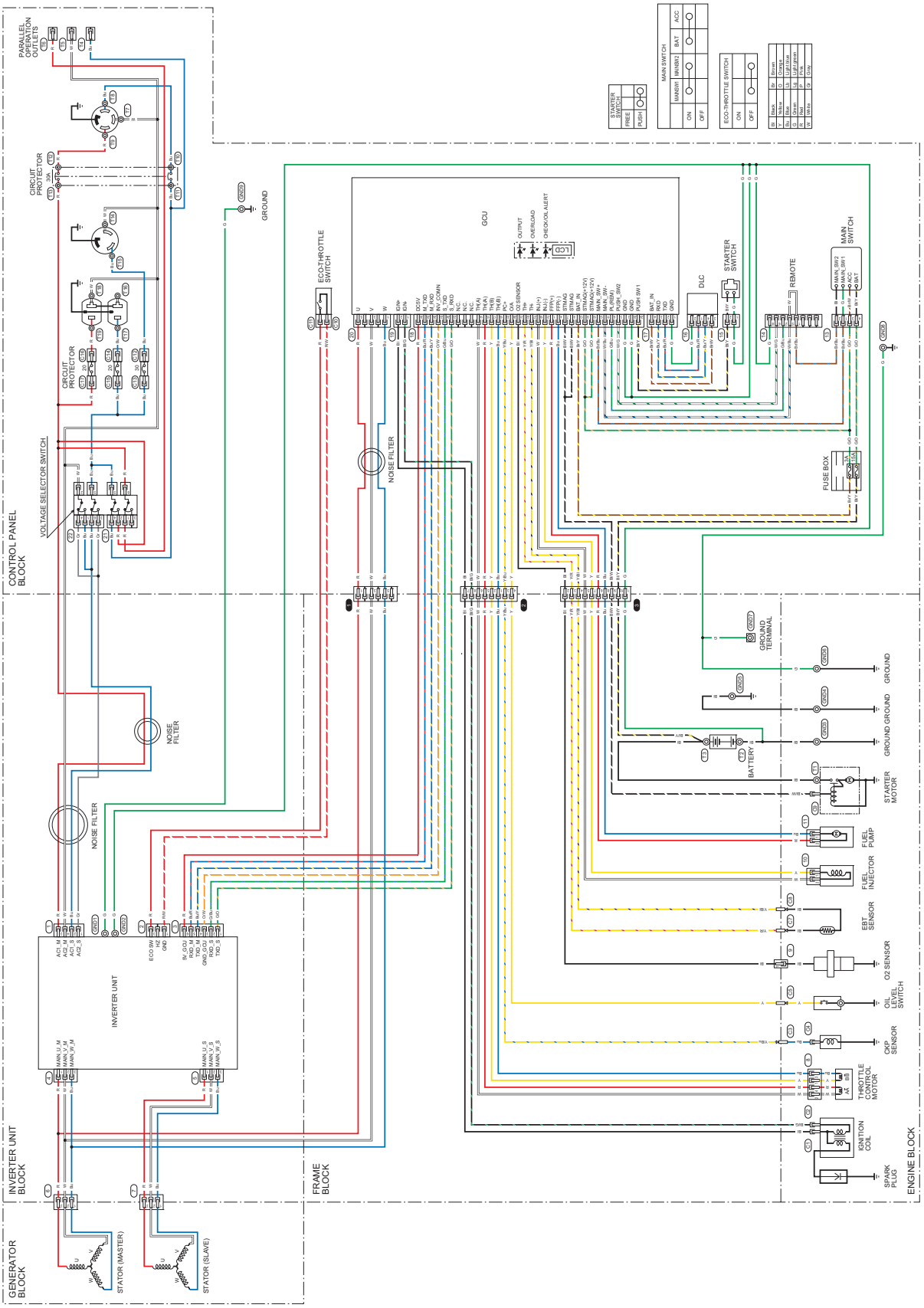
Date Revised: March 2021 (PSV52522-S)

AT1 Type (GFCI duplex receptacles)



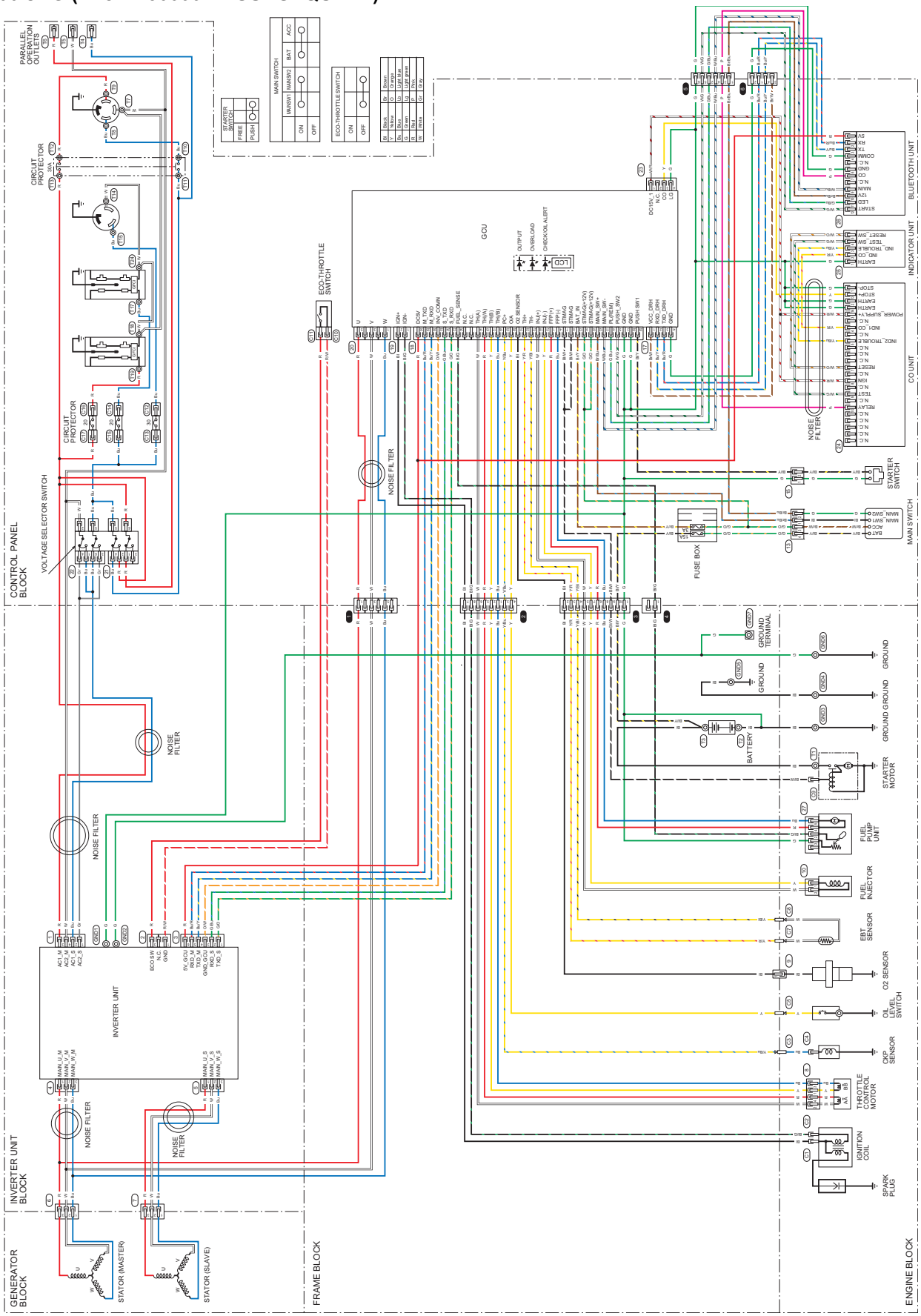
EU Models

AT Type (non-GFCI duplex receptacles)



EU Models

EU7000isAG (EEJD-1300001 ~ SUBSEQUENT)



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Date Revised: March 2021 (PSV52522-S)