Troubleshooting

AWARNING Hot engine parts can cause severe burns. Always allow the engine time to cool before performing any maintenance or service.

TABLE 5. TROUBLESHOOTING lists the Fault Codes in numerical order along with step-by-step corrective actions. If you are unable to resolve the problem after taking the corrective actions suggested, contact an authorized Onan dealer. See *How to Obtain Service* (Page 32).

First note the following:

- Maintaining engine oil level, keeping battery connections clean and tight, watching the fuel gauge, not overloading the genset, etc. will prevent most shutdowns.
- When the genset and vehicle engine share a common fuel tank the fuel dip tubes are usually arranged so that the genset will run out of fuel first. Marking the genset empty point on the fuel gauge will make it easier to tell when to stop the genset before running it out of fuel.

FAULT CODES

The genset controller provides extensive diagnostics by causing the status indicator light on the Control Switch to blink in a coded fashion. Following a fault shutdown, the indicator light will repeatedly blink 2, 3 or 4 blinks at a time.

- Two blinks indicates a low oil pressure fault.
- Three blinks indicates a service fault. Press Stop once to cause the two-digit, secondlevel fault code to blink. (Pressing Stop again will stop the blinking.)The two-digit code consists of 1, 2, 3, 4 or 5 blinks, a brief pause, and then 1 to 9 blinks. The first set of blinks represents the tens digit and the second set of blinks the units digit of the fault code number. For example, Fault Code No. 36 appears as:

blink-

- Four blinks indicates that cranking exceeded 30 seconds without the engine starting.
- Note: Fault Code Nos. 3 and 4 are first level faults. Avoid interpreting them as second-level Fault Code Nos. 33 and 44, which have not been assigned as fault codes.

Restoring Fault Code Blinking – The fault code stops blinking after five minutes (15 minutes, Series HGJAA). Press **Stop** three times within five seconds to restore blinking. *Note that the last fault logged will blink, even after the condition that caused the shutdown has been corrected.*

TABLE 5. TROUBLESHOOTING

WARNING Some genset service procedures present hazards that can result in severe personal injury or death. Only trained and experienced service personnel with knowledge of fuels, electricity, and machinery hazards should perform genset service. See Safety Precautions.

STATUS INDICATOR LIGHT DEAD

(Faulty connections, no battery voltage)

Corrective Action:

- 1. Try the genset Start Switch if the remote Start Switch does not work, and vice versa.
- 2. Clean and tighten the positive (+) and negative (-) battery cable connections at the battery, vehicle frame and genset.
- 3. Recharge or replace the battery. Refer to the battery manufacturer's recommendations.

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STARTING BATTERIES RUN DOWN

(Marginal batteries, connections, or charging system or, parasitic loads)

Corrective Action:

- 1. Clean and tighten the positive (+) and negative (-) battery cable connections at the battery, vehicle frame and genset.
- 2. Recharge or replace the battery. Refer to the battery manufacturer's recommendations.
- 3. Have a battery charging system installed or serviced in the vehicle.

STARTER ENGAGES-DISENGAGES

(Cranking voltage dips below 6 volts—low battery charge, poor connections, long cables)

Corrective Action:

- 1. Have the vehicle propulsion engine running while trying to start the genset—the battery charging alternator may be able to maintain starting voltage high enough to get the genset started.
- 2. Clean and tighten the positive (+) and negative (-) battery cable connections at the battery, vehicle frame and genset.
- 3. Recharge or replace the battery. Refer to the battery manufacturer's recommendations.
- 4. Increase battery cable size or run parallel cables.

NO POWER—GENSET RUNNING, STATUS LIGHT ON

(Line circuit breaker OFF, or tripped due to short circuit or overload)

Corrective Action:

- 1. Turn on or reset the line circuit breaker on the genset (Page 10).
- 2. Turn on or reset the line circuit breakers on the main distribution panel in the vehicle.

LOW OIL PRESSURE FAULT—CODE NO. 2

(First-level fault code—Low oil pressure cutoff switch did not open)

Corrective Action:

- 1. Check engine oil level and add oil as necessary (Page 17).
- 2. Drain excess oil (above dipstick Full mark.)

SERVICE CHECK FAULT—CODE NO. 3

(First-level fault code—Indicates fault with second-level fault code)

Corrective Action: Check the second-level fault code by pressing **STOP** once. The second-level fault code will have two-digits. The faults are listed in numerical order in this table.

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OVERCRANK FAULT—CODE NO. 4

(First-level fault code—Cranking exceeded 30 seconds without engine starting)

Corrective Action:

- 1. **Gasoline Models** Check and fill the fuel tank, as necessary. (Note: The genset fuel pickup tube is probably higher up in the fuel tank than the vehicle engine pickup.)
- 2. Prime the engine fuel system by holding the control switch at **Stop/Prime** for 30 seconds.
- 3. Low Pressure LPG Models Check and fill the LPG container, as necessary. On cold days the LPG container may have to be kept at least half full to provide the rate of vaporization necessary to keep up with the genset fuel demand.
- 4. **High Pressure LPG Models** Check and fill the LPG container, as necessary, and drain the genset LPG system of oil that may have migrated from the supply system (Item 5, Page 13). *Make sure to re-close the drain valve.*
- 5. Open any closed fuel valves.
- 6. Secure the spark plug leads on the spark plugs (Page 20).
- 7. Replace the spark plugs (Page 20).
- 8. Service the air cleaner (Page 19).

OVERVOLTAGE FAULT—CODE NO. 12

(Controller unable to maintain rated voltage)

Corrective Action: See an authorized Onan dealer.

UNDERVOLTAGE FAULT—CODE NO. 13

(Controller unable to maintain rated voltage)

Corrective Action: Reduce the number of connected appliances, especially when air conditioners and battery chargers are running.

OVERFREQUENCY FAULT—CODE NO. 14

(Engine governor unable to maintain rated frequency)

Corrective Action: See an authorized Onan dealer.

UNDERFREQUENCY FAULT—CODE NO. 15

(Engine governor unable to maintain rated frequency)

Corrective Action:

- 1. Reduce the number of connected appliances, especially when air conditioners and battery chargers are running.
- 2. **High Pressure LPG Models** Drain the genset LPG system of oil that may have migrated from the supply system (Item 5, Page 13). *Make sure to re-close the drain valve.*

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GOVERNOR ACTUATOR FAULT—CODE NO. 19

(Controller sensed open or shorted circuit)

Corrective Action: See an authorized Onan dealer.

GOVERNOR ACTUATOR OVERLOAD FAULT—CODE NO. 22

(Duration of operation at or near full-duty cycle beyond design limit)

Corrective Action:

- 1. Reduce the number of connected appliances, especially when air conditioners and battery chargers are running.
- 2. Service the air cleaner (Page 19).
- 3. Check for and repair a blocked exhaust system.

LOW OIL PRESSURE CUTOFF SWITCH FAULT—CODE NO. 23

(Controller sensed switch still open during start—not a running fault)

Corrective Action: See an authorized Onan dealer.

VOLTAGE SENSE FAULT—CODE NO. 27

(Controller unable to sense output voltage)

Corrective Action: See an authorized Onan dealer.

HIGH BATTERY VOLTAGE FAULT—CODE NO. 29

(Voltage across battery system greater than 19 volts)

Corrective Action:

- 1. Check battery bank connections and reconnect if necessary so that the 12 volt batteries serving the genset are connected in parallel (12 volt) rather than in series (24 volt).
- 2. Select a lower battery boost charge rate.

OVERSPEED FAULT—CODE NO. 31

(Engine speed greater than 3400 rpm)

Corrective Action: See an authorized Onan dealer.

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LOW CRANKING SPEED FAULT—CODE NO. 32

(Cranking speed less than 180 rpm for more than 2 seconds)

Corrective Action:

- 1. Clean and tighten the positive (+) and negative (-) battery cable connections at the battery and at the genset.
- 2. Recharge or replace the battery. Refer to the battery manufacturer's recommendations.
- 3. Replace engine oil with oil of proper viscosity for ambient temperatures (Page 6). (High oil viscosity can slow down cranking speed.)

CONTROL CARD FAILURE FAULT-CODE NO. 35

(Microprocessor EEPROM error during self-test)

Corrective Action: See an authorized Onan dealer.

ENGINE STOPPED FAULT—CODE NO. 36

(Engine stopped without command by controller)

Corrective Action:

- 1. **Gasoline Models** Check and fill the fuel tank, as necessary. (Note: The genset fuel pickup tube is probably higher up in the fuel tank than the vehicle engine pickup.)
- 2. Low Pressure LPG Models Check and fill the LPG container, as necessary. On cold days the LPG container may have to be kept at least half full to provide the rate of vaporization necessary to keep up with the genset fuel demand.
- 3. **High Pressure LPG Models** Check and fill the LPG container, as necessary, and drain the genset LPG system of oil that may have migrated from the supply system (Item 5, Page 13). *Make sure to re-close the drain valve.*
- 4. Secure the spark plug leads on the spark plugs (Page 20).
- 5. Replace the spark plugs (Page 20).
- 6. Service the air cleaner (Page 19).
- 7. Check for mechanical damage.

INVALID GENSET CONFIGURATION FAULT—CODE NO. 37

(Wrong frequency/rpm ratio)

Corrective Action: See an authorized Onan dealer.

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OVERCURRENT (FIELD OVERLOAD) FAULT—CODE NO. 38

(Low power factor loads)

Corrective Action:

- 1. Reduce the number of appliances running at the same time, especially those with high motor starting loads such as air conditioners.
- 2. Have air conditioners and other appliances checked for proper operation. (A locked compressor rotor can cause very low power factor.)

GENERATOR ROTOR FAULT—CODE NO. 41

(Controller unable to sense field or output voltage)

Corrective Action: See an authorized Onan dealer.

PROCESSOR FAULT—CODE NO. 42

(Microprocessor ROM error during self-test)

Corrective Action: See an authorized Onan dealer.

PROCESSOR FAULT—CODE NO. 43

(Microprocessor RAM error during self-test)

Corrective Action: See an authorized Onan dealer.

SPEED SENSE FAULT—CODE NO. 45

(Controller unable to sense quadrature frequency)

Corrective Action: See an authorized Onan dealer.

IGNITION FAULT—CODE NO. 47

(Controller unable to sense ignition)

Corrective Action: See an authorized Onan dealer.

GENERATOR FIELD SENSE FAULT—CODE NO. 48

(Controller unable to sense field voltage)

Corrective Action: See an authorized Onan dealer.

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PROCESSOR FAULT—CODE NO. 51

(Microprocessor malfunction)

Corrective Action: See an authorized Onan dealer.

FUEL INJECTOR FAULT—CODE NO. 52

(Open or short circuit in fuel injector)

Corrective Action: See an authorized Onan dealer.

MAT SENDER FAULT—CODE NO. 54

(Open or short circuit in MAT sender)

Corrective Action: See an authorized Onan dealer.

MAP SENDER FAULT—CODE NO. 56

(Open or short circuit in MAP sender)

Corrective Action: See an authorized Onan dealer.

OVERPRIME FAULT—CODE NO. 57

(Prime mode exceeded 3 minutes)

Corrective Action: Check for and remove any object that may be holding either control switch (remote or local) in the prime position.