**WARNING!** Do NOT disconnect or bypass the HTS when servicing! Refrigerators can cause a fire resulting in property damage, injury or death if this HTS safety device is disabled.

**WARNING!** Information provided is ONLY intended for professional technicians, trained and qualified in the safe repair practices and operation of AC (110V), DC electrical, and LP gas components.

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage!

**Purpose:**
This service bulletin is intended to provide safe procedures and troubleshooting steps that provide diagnostic procedures to aide service personnel in identifying the root cause of:

- A BLANK DISPLAY (Refrigerator will not turn on) on 1200 model refrigerators fitted with a 634737 RECALL KIT - HTS.
- A LI oP error code on a 1200 model refrigerator fitted with a controls adapter kit and a 634737 RECALL KIT - HTS.
- A LI oP error code on 1210 model refrigerators fitted with a 634737 RECALL KIT - HTS and/or a factory installed kit.

**Models Affected:**
1200 and/or 1210 model refrigerators fitted with a field or factory installed HTS (High Temperature Sensor).

**Tools Needed**
- Nut Driver Set
- Volt Meter
- Long Blade Razor Knife
- Litmus paper

**Procedures:**

- **1200 Model Refrigerators With Blank Display**
  Follow the 1200 Blank Display - Refrigerator Will Not Turn On Diagnostic Flowchart procedure. Refer to Fig. 1 for configuration.

- **1200 Model Refrigerators - With LI oP Display**
  Follow the LI oP Error Code Diagnostic Flowchart procedure. Refer to Fig. 2 for configuration.
  **NOTE:** If a 1200 model refrigerator displays the LI oP error, it is because the refrigerator has been retrofitted with a controls adapter kit.

- **1210 Model Refrigerators**
  Follow the LI oP Error Code Diagnostic Flowchart procedure. Refer to Fig. 2 for configuration.

**Acronyms and Terms**

- **HTS (High Temperature Sensor):**
  Refers to the 634737 RECALL KIT - HTS and/or factory installed kit.

- **TMC (Temperature Monitoring Control):**
  Refers to the electronic control box ("black-box") that is a part of the 634677 RECALL KIT - HTS and/or factory installed kit.

- **Thermocouple:**
  Refers to the temperature sensor (with muffler clamp) that is mounted to the boiler tube.

![Diagram](image1)

**Fig. 1**
1200 Models With Original Controls
- Green; Clips to gas valve bracket
- Red; 12V from coach battery / converter
- Brown; Thermocouple mounted to boiler tube
- Blue; To 12 volt input of power board

![Diagram](image2)

**Fig. 2**
1210 or 1200 Models Fitted with Controls Adapter Kit
- Green; Clips to gas valve bracket
- Red; From Limit_Out terminal of power board
- Brown; Thermocouple mounted to boiler tube
- Blue; To Limit_IN terminal of power board
Refrigerator will not turn ON

BEGIN

Is HTS wired according to the installation instructions? Refer to Fig. 1 & 3

- Yes
  - 1. Connect or repair connections as needed.
  - 2. If refrigerator is able to turn ON, the repair is complete.
  - 3. If refrigerator will NOT TURN ON, return to BEGIN process on this flowchart.

Is TMC red light flashing?

- Yes
  - Go to TMC RED LIGHT FLASHING page

- No
  - Go to TMC RED LIGHT ON SOLID page

Is there 12 VDC between the GND and +12V terminals of the TMC?

- Yes
  - Replace 634737 HTS kit

- No
  - Is there 12 VDC between the GND and the +12V OUT terminals of the TMC?

  - Yes
    - Problem is NOT related to HTS, Refer to service manual.

  - No
    - Is there 12 VDC between the GND terminal of TMC and 12V input terminal of power board?

      - Yes
        - Connect DC source of 10.5 to 15.4 VDC to red +12V IN wire.

      - No
        - Is a DC source of 10.5 to 15.4 VDC connected to the red +12V IN wire?

          - Yes
            - 1. Repair green ground wire and/or connections as needed.
            - 2. If refrigerator is able to turn ON, the repair is complete.
            - 3. If refrigerator will NOT TURN ON, return to BEGIN process on this flowchart.

          - No
            - 1. Repair red +12V IN wire and/or connections as needed.
            - 2. If refrigerator is able to turn ON, the repair is complete.
            - 3. If refrigerator will NOT TURN ON, return to BEGIN process on this flowchart.
LI oP Error Code Diagnostic Flowchart

LI oP error code is displayed on front of refrigerator.  
BEGIN

Is HTS wired according to the installation instructions?  
Refer to Fig. 2 & 3

No  

Is TMC red light on solid?

Yes  

Yes

Go to TMC RED LIGHT FLASHING page

Go to TMC RED LIGHT ON SOLID page

1. Connect or repair connections as needed.  
2. If LI oP code clears, the repair is complete.  
3. If LI oP code remains return to BEGIN process on this flowchart.

No

Is TMC red light flashing?

Yes

A

Is there 12 VDC between the GND and +12V terminals of the TMC?

Yes

Replace 634737 HTS kit

No

B

Is there 12 VDC between the GND and the +12V OUT terminals of the TMC?

Yes

Replace Power board

No

Remove power board cover. Is there 12 VDC between the TMC GND terminal and power board LIMIT_IN terminal?

Yes

No

1. Repair blue limit in wire and/or connections as needed.  
2. If LI oP code clears, the repair is complete.  
3. If LI oP code remains, return to BEGIN process on this flowchart.

Is there 12 VDC between the gas valve bracket and +12V terminal of TMC?

Yes

No

Replace Power board

1. Repair red limit out wire and/or connections as needed.  
2. If LI oP code clears, the repair is complete.  
3. If LI oP code remains, return to BEGIN process on this flowchart.

1. Repair green ground wire and/or connections as needed.  
2. If LI oP code clears, the repair is complete.  
3. If LI oP code remains, return to BEGIN process on this flowchart.
FAST
On/Off 2 to 3 times per second

Is red light flashing FAST or SLOW?

SLOW
On/Off once per second

TMC has sensed an open circuit in the thermocouple circuit

Is thermocouple plugged into T/C connector of TMC?

Yes
Replace 634737 HTS kit

No

1200
Plug in thermocouple.
Once plugged in, TMC will self-recover and refrigerator will be able to be turned ON.

1210
Plug in thermocouple.
Once plugged in, TMC will self-recover and LI oP error will be cleared.

1200
Ensure input voltage to TMC +12V terminal is between 10.5 –15.4 VDC.
Once input voltage is above 10.0 VDC, TMC will self-recover and refrigerator will be able to be turned ON.

1210
Ensure input voltage to TMC +12V terminal is between 10.5 –15.4 VDC.
Once input voltage is above 10.0 VDC, TMC will self-recover and LI oP error code will be cleared.
Red Light on Solid

B From Previous Page

Red light on TMC is ON solid

Verify correct thermocouple position - Refer to Fig. 3

Inspect for cooling unit leak.

1. Carefully remove insulation plug (installed with 634737 RECALL Kit - HTS) from around boiler (A and B).
2. Visually inspect exposed boiler area (B) for any powdery, yellow residue indicating leaking chromate (C).
3. Smell around boiler area for ammonia.

Is yellow, powdery residue visible?

Yes

REPLACE COOLING UNIT

No

Can you smell ammonia?

Yes

No

Using litmus paper, inspect boiler area for leaks.
Refer to LITMUS PAPER TEST

Did litmus paper indicate a leak?

Yes

No

Go to HTS Validation Page

Removing Insulation

A

B

Insulation Plug (dotted line) in place

1. Remove - the system insulation (A) or remove the insulation plug.

2. Inspect for powdery, yellow residue (B).

Example Chromate Leaking

C

Red arrows pointing to yellow, powdery residue - indicates chromate leak
Over the years of running a mobile RV repair service, having a dedicated place to access service manuals for all the different appliances and components found on RVs was something that I always had a desire to create.

I hope this resource makes your RV repairs easier, as it has mine, but please be careful and follow proper safety practices when attempting to repair your own RV.

If in doubt, please consult with a professional RV technician!

All service manuals provided on www.myrvworks.com are believed to be released for distribution and/or in the public domain.