

DINOSAUR ELECTRONICS

MICRO P-711 Exerciser Instruction Book

First Edition

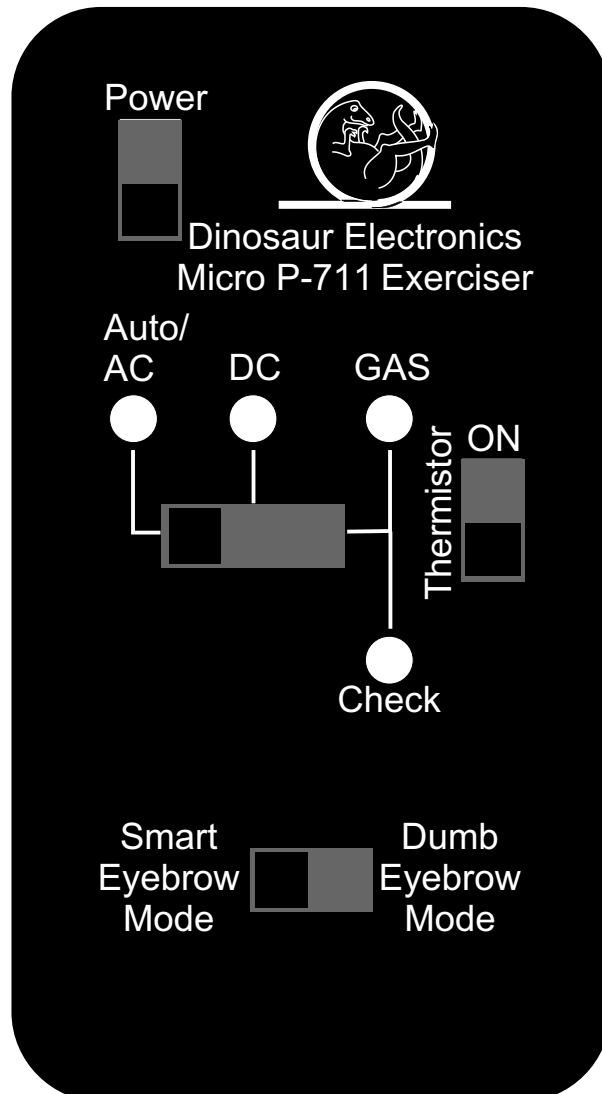


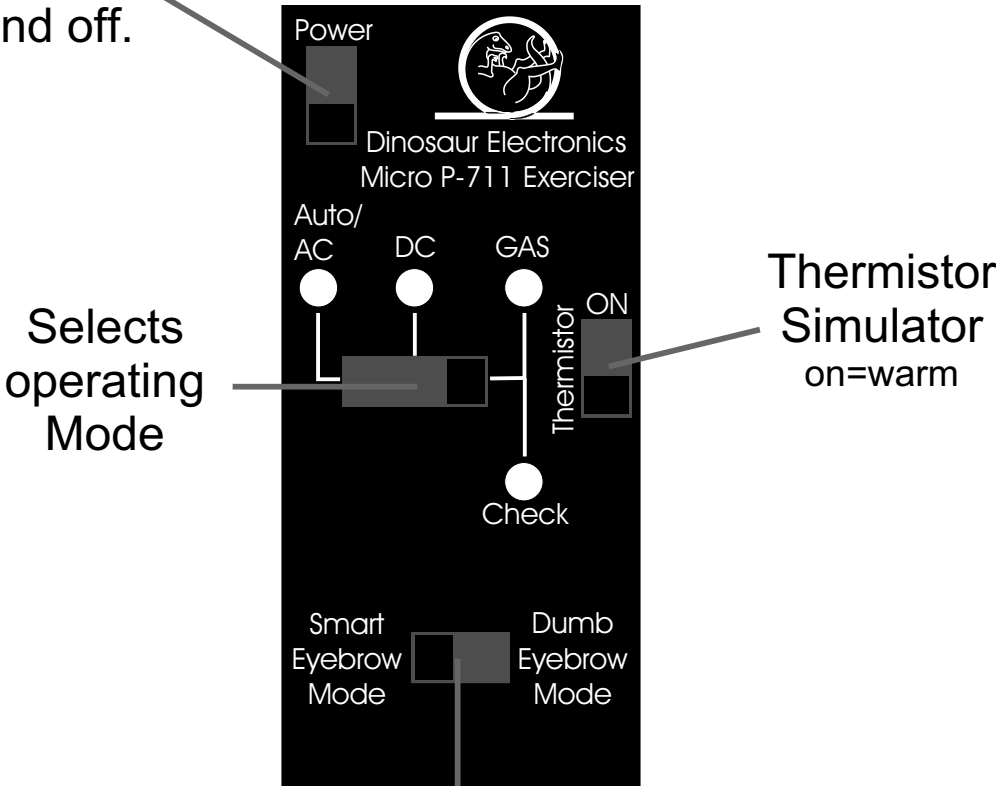
Table of Contents

Introduction	1-2
<u>MICRO P-711 tests</u>	
AC	3
DC	4
Gas	5
Dometic eyebrow ID drawings	6
<u>Dometic AES and AMES tests</u>	
AC	7
DC	8
Gas	9
<u>Dometic AUTO/Gas fixed-temp tests</u>	
AC	10
Gas	11
<u>Dometic AUTO/MANUAL fixed-temp tests</u>	
AC	12
Gas	13
Reignitor Stuff (troubleshooting).....	14
Thermocouple Stuff (troubleshooting).....	15

MICRO P-711 Exerciser

Functions like an eyebrow and thermistor to allow testing of the refrigerator from the outside access panel.

Turns the refrigerator on and off.



Thermistor Simulator
on=warm

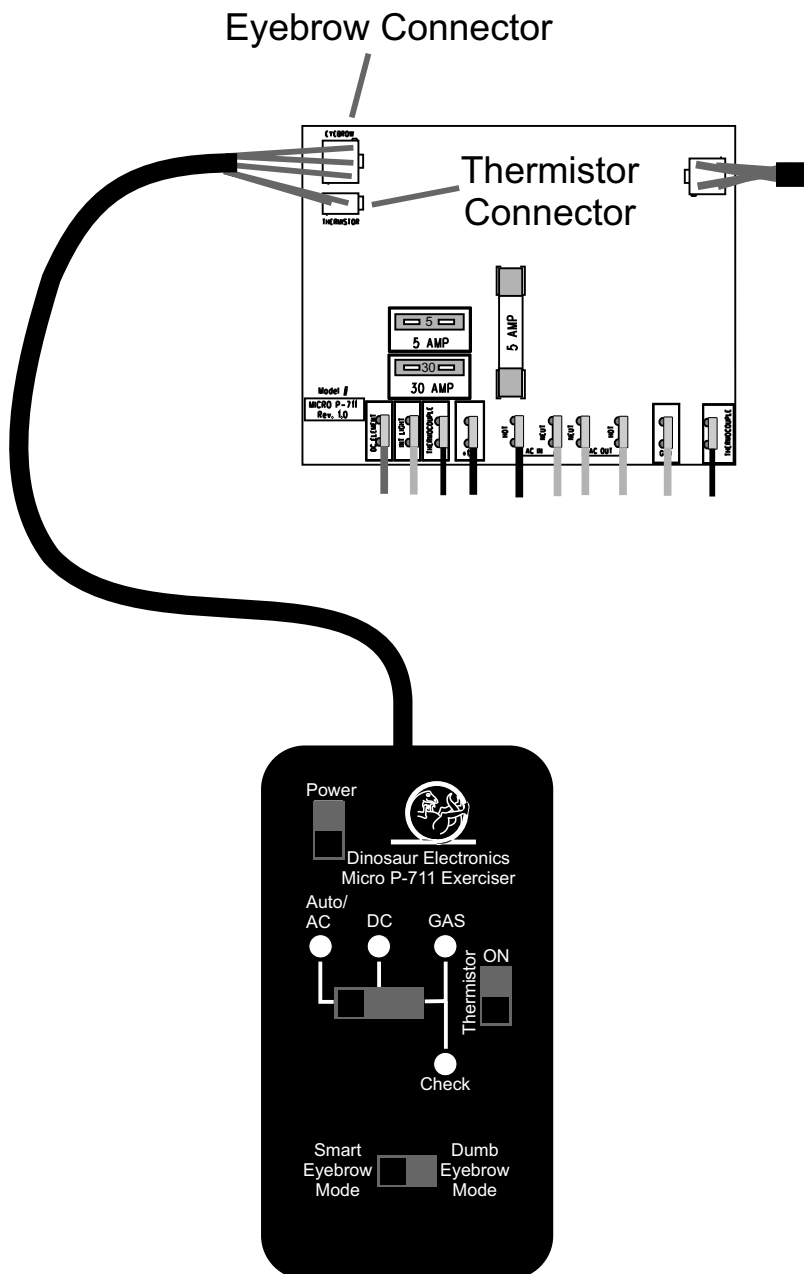
Selects operating Mode

Selects system type

Smart = adjustable temperature eyebrow
Dumb = fixed temp. (Americana & Freedom)

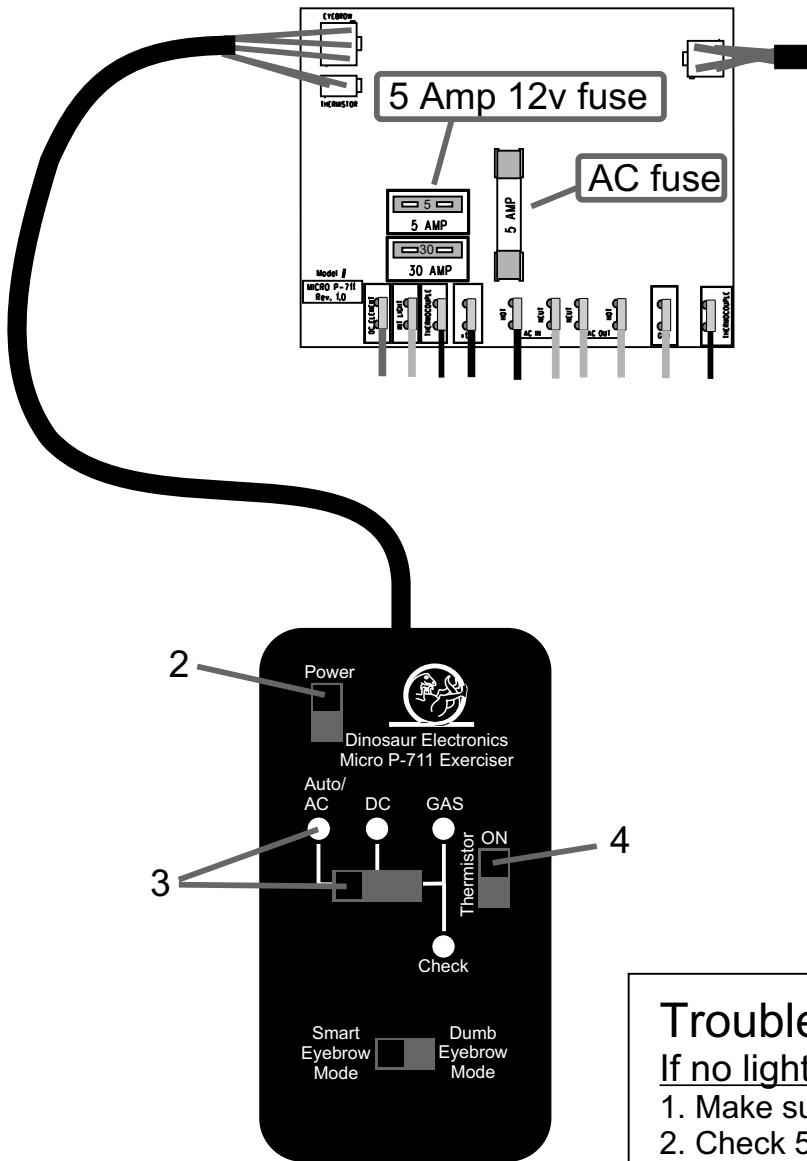
1. Unplug the refrigerator's eyebrow and connect the exerciser's 6-pin connector to the board.

2. Unplug the refrigerator's thermistor and connect the exerciser's 2-pin connector to the board.



MICRO P-711

AC test



1. Make sure AC is available to the refrigerator.
2. Turn on Power switch (on exerciser)
3. Select Auto/AC mode. (AC light should come on)
4. Turn on Thermistor switch. (AC relay should actuate and element should get hot)

Troubleshooting:

If no lights come on, and no relays click,

1. Make sure 12 volts DC is available between J4 & J10
2. Check 5 Amp 12v fuse.

If GAS light comes on instead of AC light,

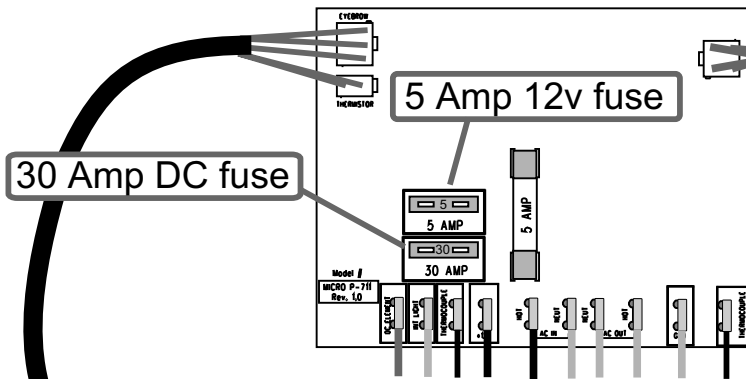
1. Verify that AC is available between J5 & J6
2. Replace AC fuse (they can be bad but still look good)
3. Replace board if 1 and 2 don't solve the problem.

If AC light comes on, but element doesn't get hot,

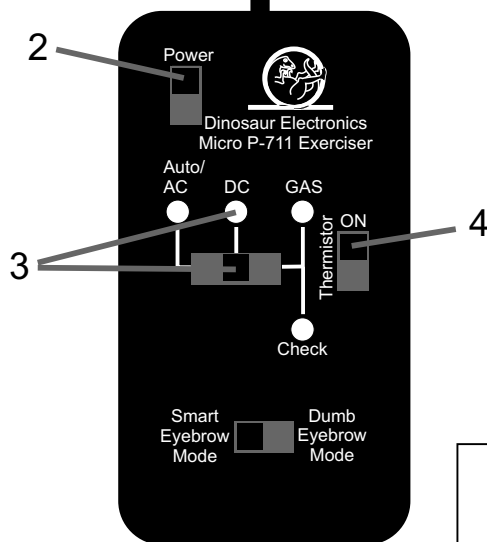
1. Turn off power, disconnect element, and measure its resistance (should be 35-60 ohms)
2. Replace board if 1 is ok.

MICRO P-711

DC test



1. Make sure 13.8 volts DC is available to the refrigerator (engine must be running).
2. Turn on Power switch (on exerciser)
3. Select DC mode. (DC light should come on)
4. Turn on Thermistor switch. (DC relay should actuate and element should get hot)



Troubleshooting:

If no lights come on, and no relays click,

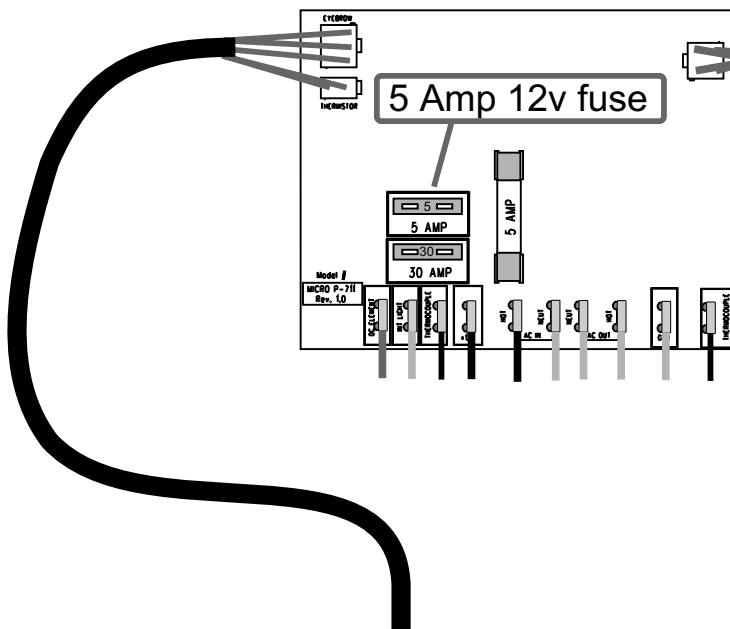
1. Make sure 12 volts DC is available between J4 & J10
2. Check 5 Amp 12v fuse.

If DC light comes on, but starts flashing after 10 sec,

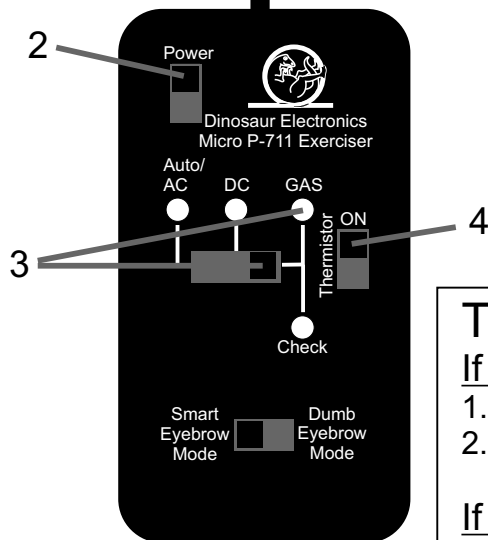
1. Verify that 13.8 volts DC is available between J4 & J10
2. Replace 30 Amp DC fuse (they can be bad but still look good)
3. Replace board if 1 and 2 don't solve the problem.

MICRO P-711

Gas test



1. Make sure propane is available to the refrigerator.
2. Turn on Power switch (on exerciser)
3. Select Gas mode. (Gas light should come on)
4. Turn on Thermistor switch. (reignitor and gas valve should actuate)



Troubleshooting:

If no lights come on,

1. Make sure 12 volts DC is available between J4 & J10
2. Check 5 Amp 12v fuse.

If GAS light comes on, but reignitor does not spark ,

1. Replace reignitor

If Gas light comes on, but neither ignitor nor gas valve actuate.

1. Verify that 4-pin connector is in place.
2. Replace board if connector is ok.

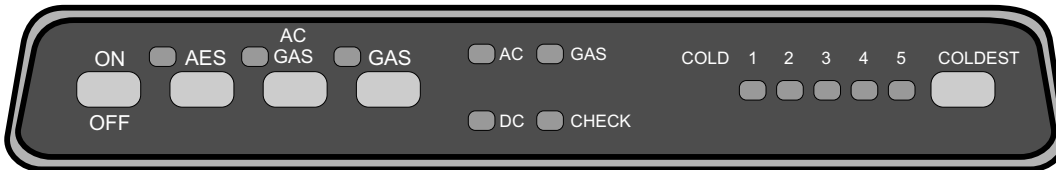
If Check light comes on after 1 or 2 minutes,

1. Verify that propane is available.
2. Check thermocouple (should measure 25-35 millivolts between J3 & J11).
3. Replace board if 1 and 2 are ok.

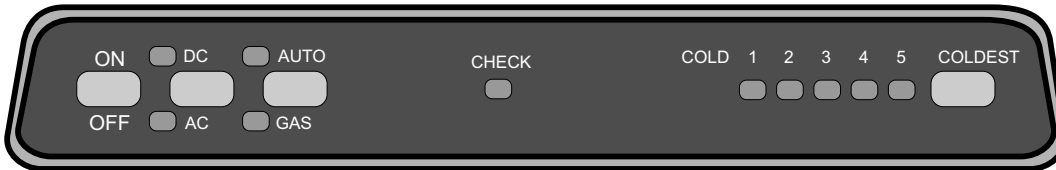
Dometic Eyebrow Types

“Smart” Eyebrows

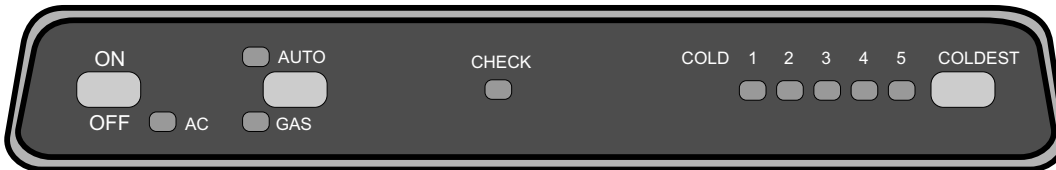
They have a computer chip in the eyebrow and the temperature is adjustable.



AES



AMES
3-way



AES & AMES
2-way

“Dumb” Eyebrows

They don't have a computer chip in the eyebrow and the temperature is not adjustable.



AUTO

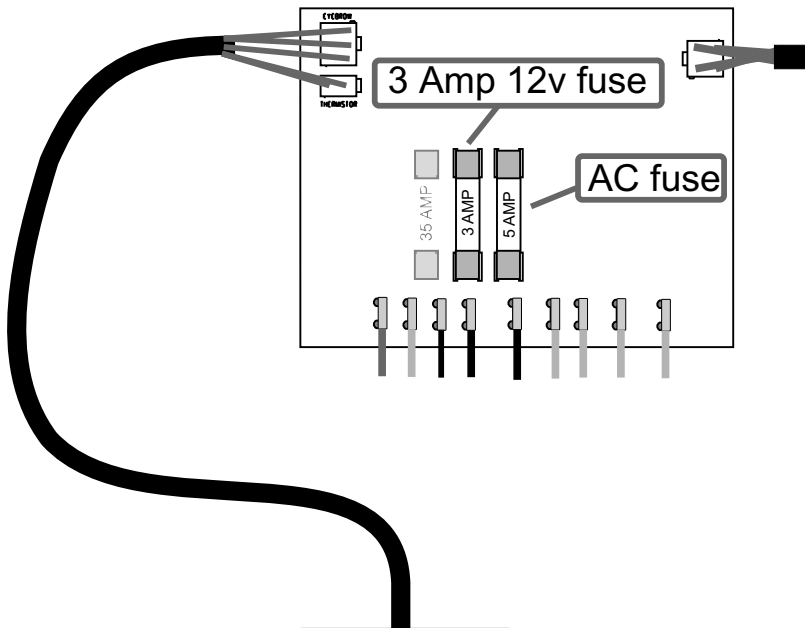


MANUAL

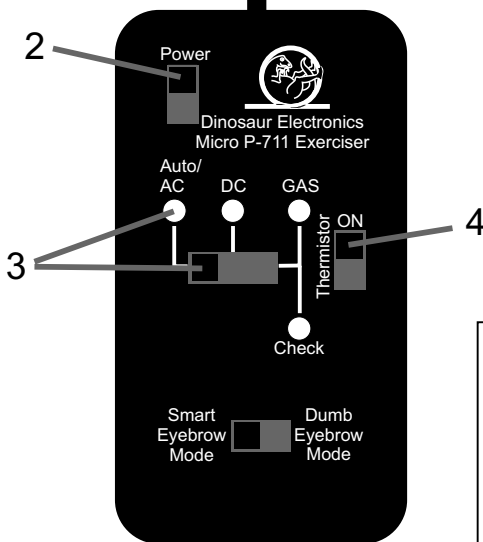
The manual type becomes a freezer when you turn off the AUTO button.

When a MICRO P-711 is used with this eyebrow, the board functions as Auto/Gas.

AES & AMES, 2-way & 3-way (Smart Eyebrow Mode) AC test



1. Make sure AC is available to the refrigerator.
2. Turn on Power switch (on exerciser)
3. Select Auto/AC mode. (AC light should come on within a few seconds)
4. Turn on Thermistor switch. (AC relay should actuate within a few seconds, and the element should get hot)



Troubleshooting:

If no lights come on, and no relays click,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

If GAS light comes on instead of AC light,

1. Verify that AC is available between J5 & J6
2. Replace AC fuse (they can be bad but still look good)
3. Replace board if 1 and 2 don't solve the problem.

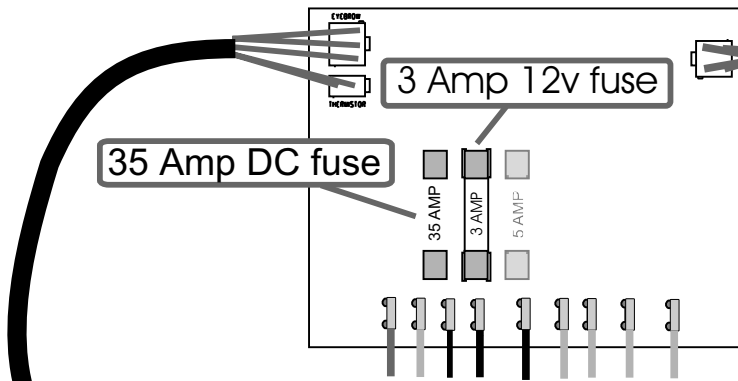
If AC light comes on, but element doesn't get hot,

1. Turn off power, disconnect element, and measure its resistance (should be 35-60 ohms)
2. Replace board if 1 is ok.

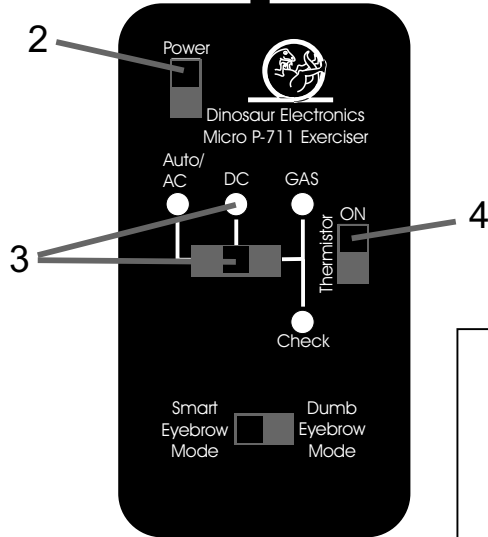
AES & AMES, 3-way

(Smart Eyebrow Mode)

DC test



1. Make sure 13.8 volts DC is available to the refrigerator (engine must be running).
2. Turn on Power switch (on exerciser)
3. Select DC mode. (DC light should come on within a few seconds)
4. Turn on Thermistor switch. (DC relay should actuate within a few seconds, and the element should get hot)



Troubleshooting:

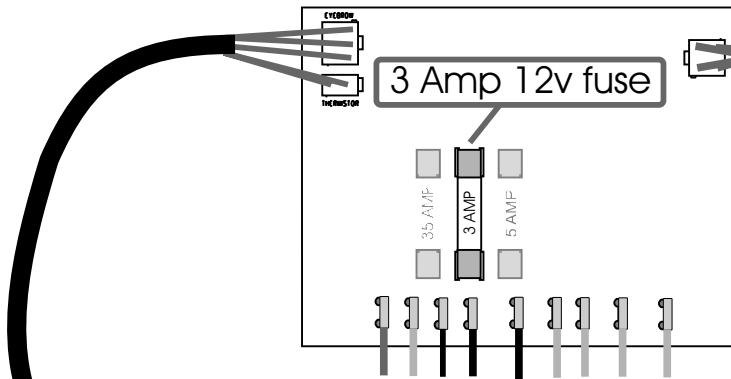
If no lights come on, and no relays click,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

If DC light comes on, but starts flashing after 10 sec,

1. Verify that 12.8 volts DC is available between J4 & GND
2. Replace 35 Amp DC fuse (they can be bad but still look good)
3. Replace board if 1 and 2 don't solve the problem.

AES & AMES, 2-way & 3-way (Smart Eyebrow Mode) Gas test



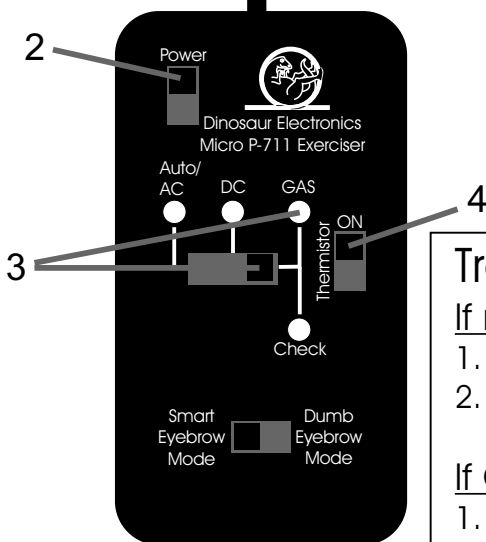
1. Make sure propane is available to the refrigerator.

2. Turn on Power switch (on exerciser)

3. Select Gas mode. (Gas light should come on within a few seconds)

4. Turn on Thermistor switch. (reignitor and gas valve should actuate within a few seconds)

*Note: If you turn the Thermistor switch off and then turn it back on, expect a delay of 30-60 seconds before the ignitor & valve come back on.



Troubleshooting:

If no lights come on,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

If GAS light comes on, but reignitor does not spark,

1. Replace reignitor

If Gas light comes on, but neither ignitor nor gas valve actuate,

1. Verify that 4-pin connector is in place.
2. Replace board if connector is ok.

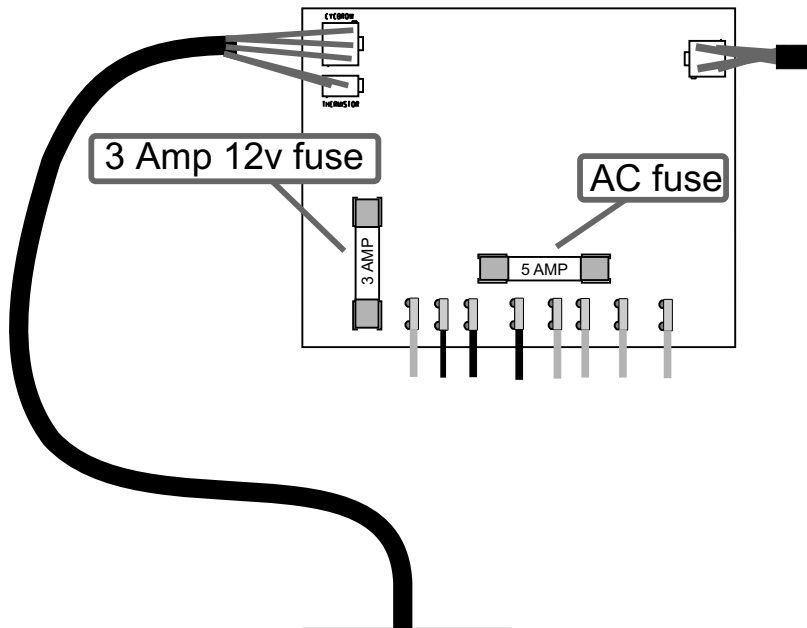
If Check light comes on after 45 seconds,

1. Verify that propane is available.
2. Check thermocouple (should measure 25-35 millivolts between J3 & GND (or J10).
3. Replace board if 1 and 2 are ok.

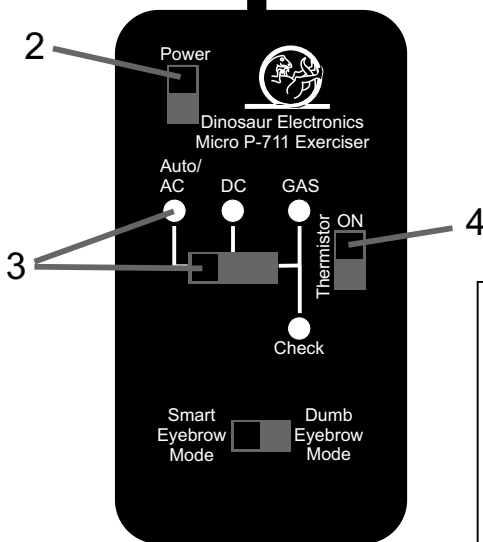
Freedom & Americana Auto/Gas

(Dumb Eyebrow Mode)

AC test



1. Make sure AC is available to the refrigerator.
2. Turn on Power switch (on exerciser)
3. Select Auto/AC mode. (AC light should come on within a few seconds)
4. Turn on Thermistor switch. (AC relay should actuate within a few seconds, and the element should get hot)



Troubleshooting:

If no lights come on, and no relays click,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

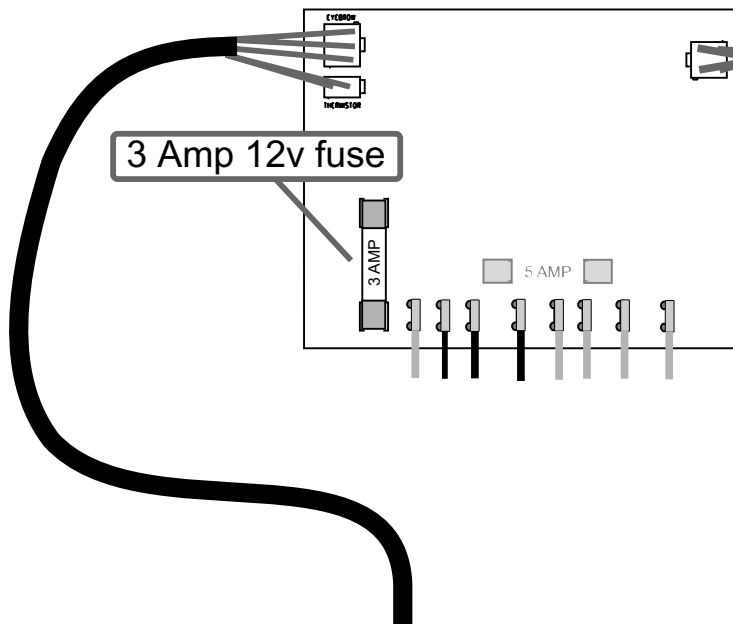
If GAS light comes on instead of AC light,

1. Verify that AC is available between J5 & J6
2. Replace AC fuse (they can be bad but still look good)
3. Replace board if 1 and 2 don't solve the problem.

If AC light comes on, but element doesn't get hot,

1. Turn off power, disconnect element, and measure its resistance (should be 35-60 ohms)
2. Replace board if 1 is ok.

Freedom & Americana Auto/Gas (Dumb Eyebrow Mode) Gas test



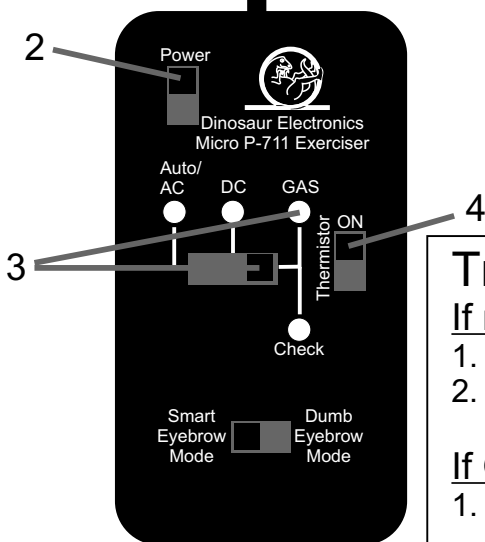
1. Make sure propane is available to the refrigerator.

2. Turn on Power switch (on exerciser)

3. Select Gas mode. (Gas light should come on within a few seconds)

4. Turn on Thermistor switch. (reignitor and gas valve should actuate within a few seconds)

*Note: If you turn the Thermistor switch off and then turn it back on, expect a delay of 30-60 seconds before the ignitor & valve come back on.



Troubleshooting:

If no lights come on,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

If GAS light comes on, but reignitor does not spark ,

1. Replace reignitor

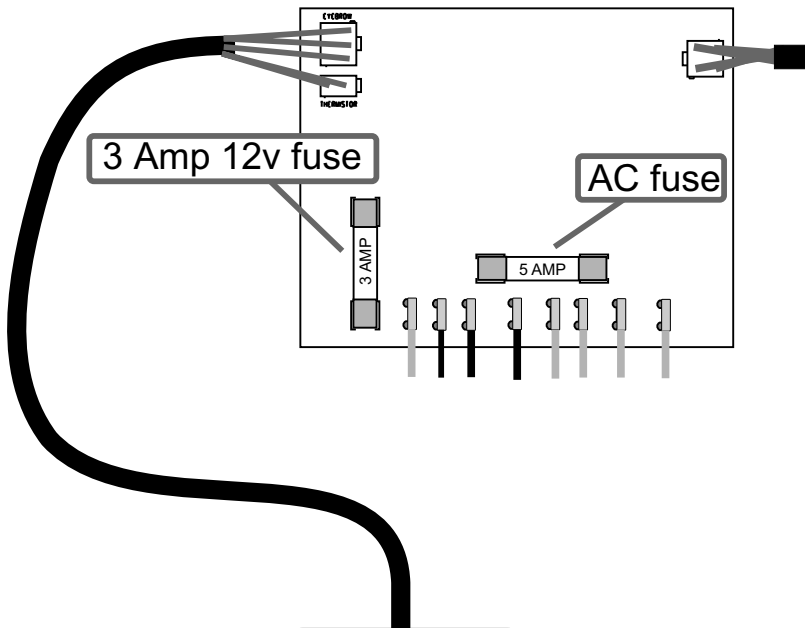
If Gas light comes on, but neither ignitor nor gas valve actuate,

1. Verify that 4-pin connector is in place.
2. Replace board if connector is ok.

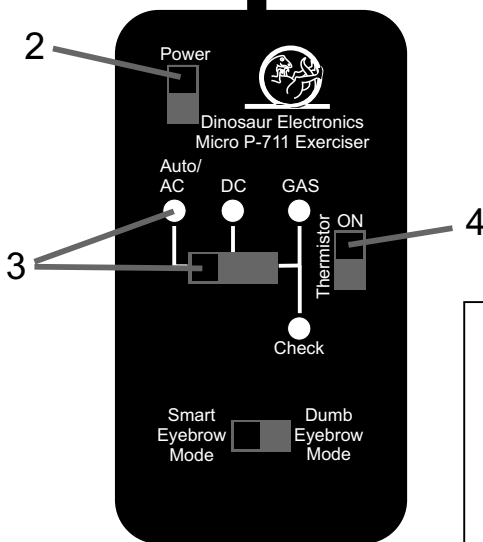
If Check light comes on after 45 seconds,

1. Verify that propane is available.
2. Check thermocouple (should measure 25-35 millivolts between J3 & GND (or J10).
3. Replace board if 1 and 2 are ok.

Freedom & Americana Auto/Manual (Dumb Eyebrow Mode) AC test



1. Make sure AC is available to the refrigerator.
2. Turn on Power switch (on exerciser)
3. Select GAS mode. (GAS light should come on within a few seconds)
4. Turn on Thermistor switch. (AC relay should actuate within a few seconds, and the element should get hot)



Troubleshooting:

If no lights come on, and no relays click,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

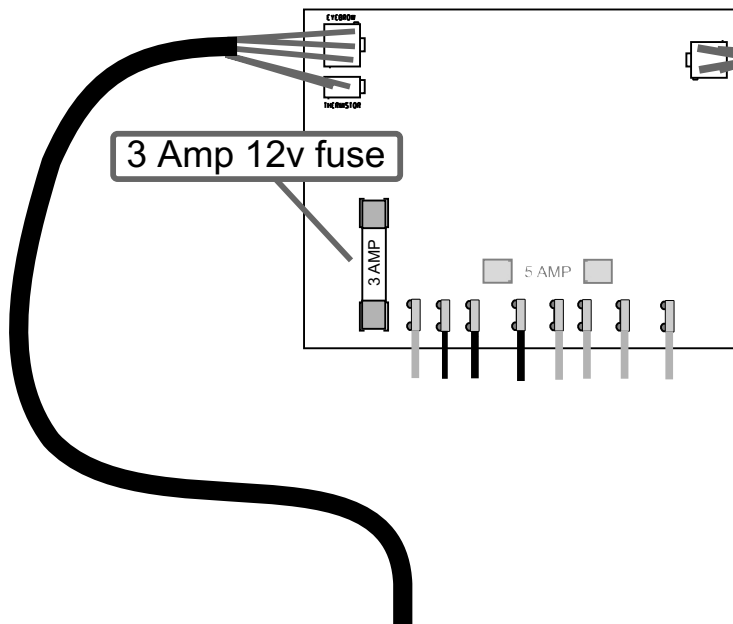
If GAS comes on instead of AC,

1. Verify that AC is available between J5 & J6
2. Replace AC fuse (they can be bad but still look good)
3. Replace board if 1 and 2 don't solve the problem.

If AC relay comes on, but element doesn't get hot,

1. Turn off power, disconnect element, and measure its resistance (should be 35-60 ohms)
2. Replace board if 1 is ok.

Freedom & Americana Auto/Manual (Dumb Eyebrow Mode) Gas test



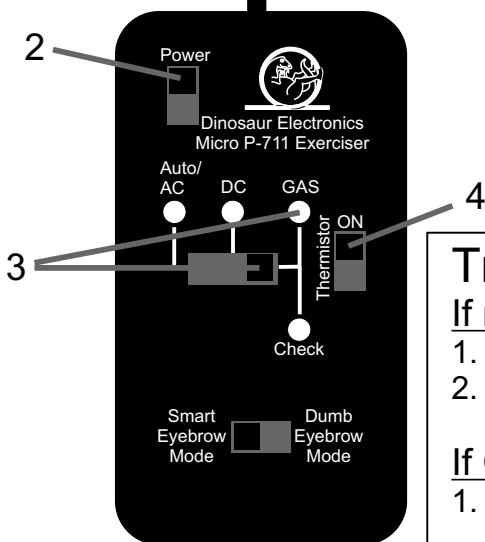
1. Make sure propane is available to the refrigerator, and unplug AC cord.

2. Turn on Power switch (on exerciser)

3. Select Gas mode. (Gas light should come on within a few seconds)

4. Turn on Thermistor switch. (reignitor and gas valve should actuate within a few seconds)

*Note: If you turn the Thermistor switch off and then turn it back on, expect a delay of 30-60 seconds before the ignitor & valve come back on.



Troubleshooting:

If no lights come on,

1. Make sure 12 volts DC is available between J4 & GND
2. Check 3 Amp 12v fuse.

If GAS light comes on, but reignitor does not spark ,

1. Replace reignitor

If Gas light comes on, but neither ignitor nor gas valve actuate.

1. Verify that 4-pin connector is in place.
2. Replace board if connector is ok.

If Check light comes on after 45 seconds,

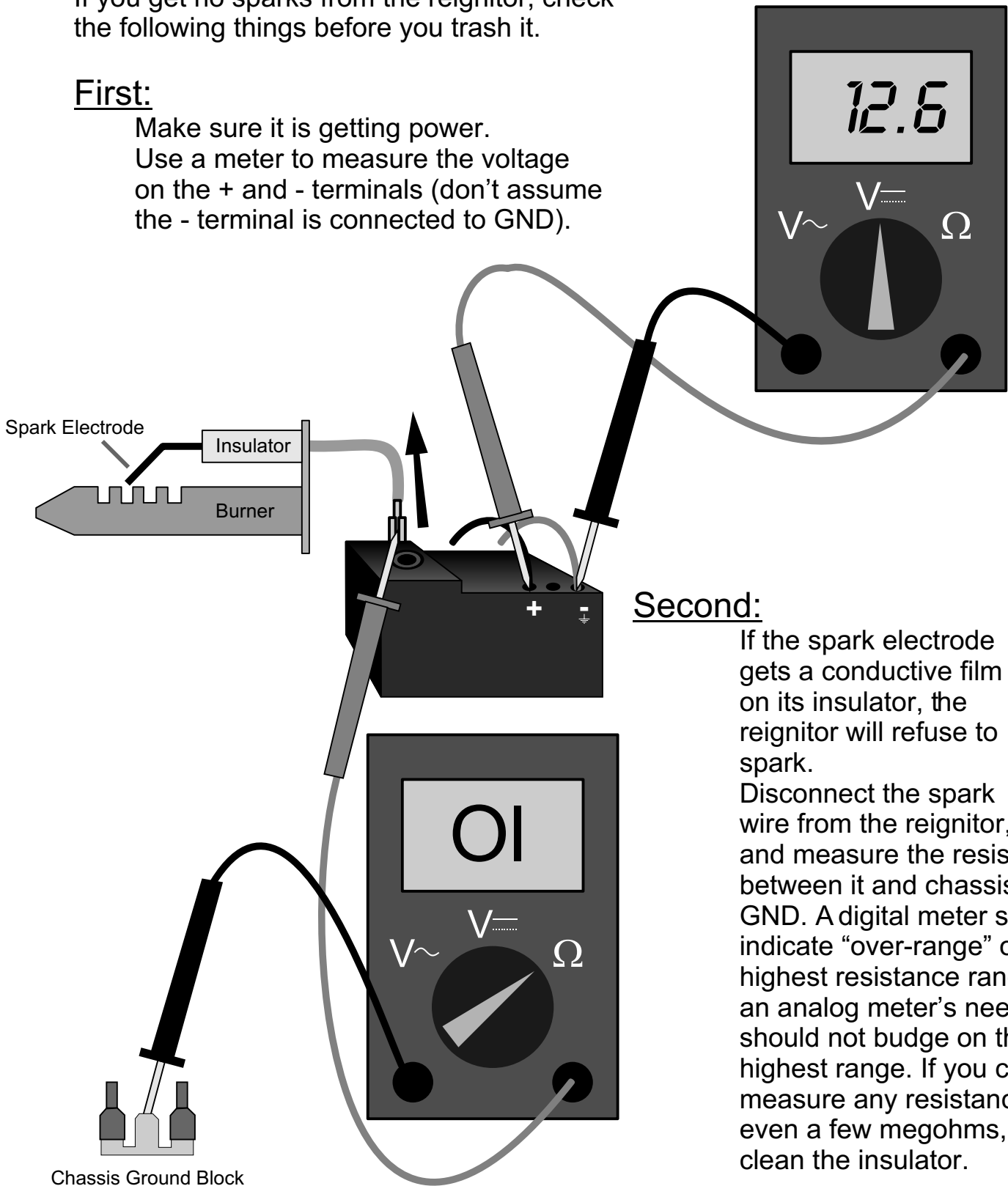
1. Verify that propane is available.
2. Check thermocouple (should measure 25-35 millivolts between J3 & GND (or J10).
3. Replace board if 1 and 2 are ok.

Reignitor Stuff

If you get no sparks from the reignitor, check the following things before you trash it.

First:

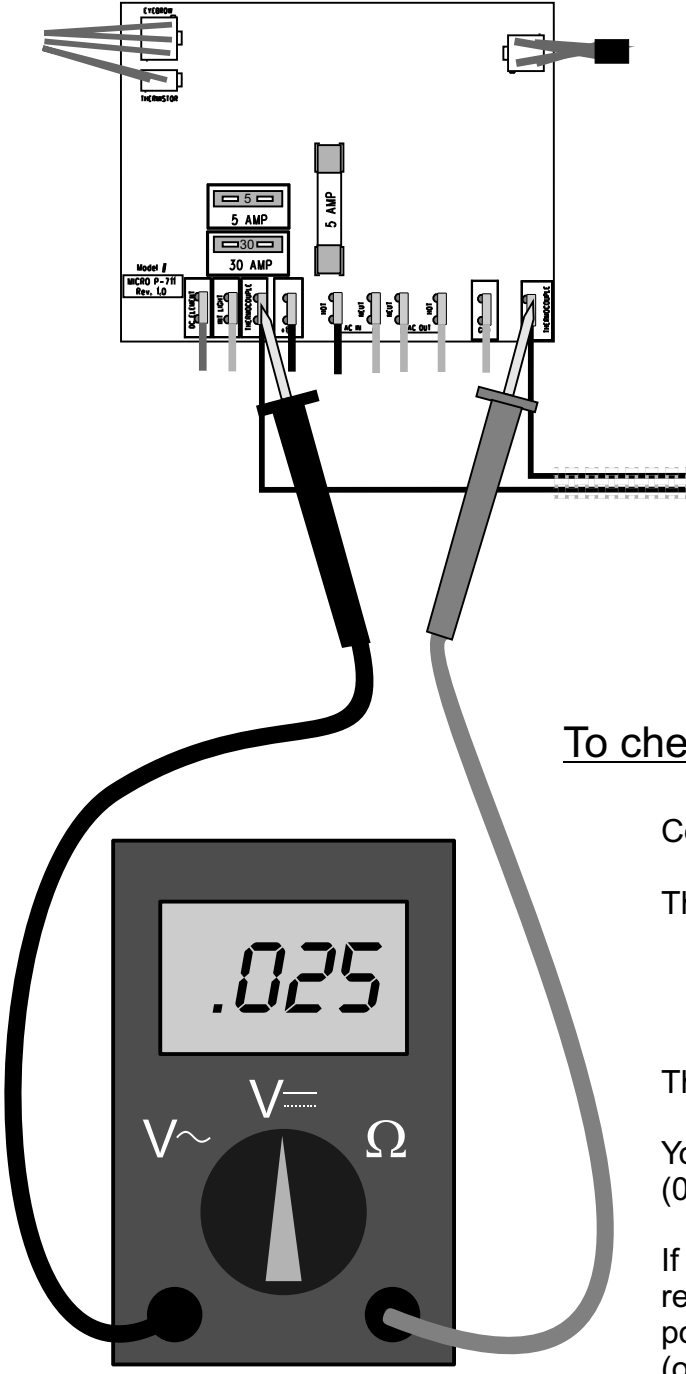
Make sure it is getting power.
Use a meter to measure the voltage on the + and - terminals (don't assume the - terminal is connected to GND).



Second:

If the spark electrode gets a conductive film on its insulator, the reignitor will refuse to spark. Disconnect the spark wire from the reignitor, and measure the resistance between it and chassis GND. A digital meter should indicate “over-range” on the highest resistance range, and an analog meter’s needle should not budge on the highest range. If you can measure any resistance, even a few megohms, clean the insulator.

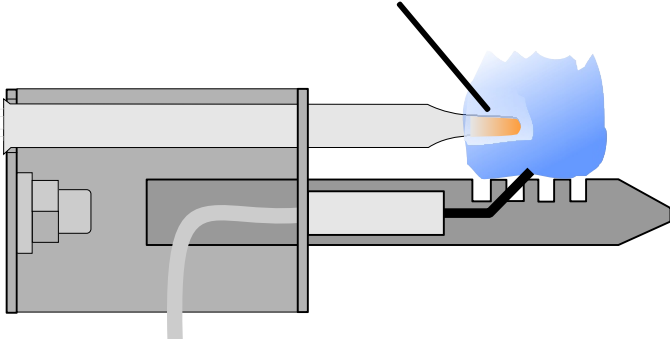
Thermocouple Stuff



Thermocouple position:

The thermocouple should extend into the flame far enough for 3/16 to 1/4" to turn red.

The flame should turn orange where it wraps around the thermocouple.



To check the thermocouple:

Connect your meter to the thermocouple.

The red (+) lead connects to:
J11 (MICRO P-711)
or J10 (Dometic, with wiring kit)
or chassis ground (Dometic, no wiring kit)

The black (-) lead connects to J3.

You should measure 22 to 40 millivolts (0.022 to 0.040 volts) with a flame present.

If the meter reads a negative voltage, reverse the thermocouple leads. The positive lead must connect to J11 (or J10 or chassis ground.)

If the reading is less than 22 millivolts with a flame, adjust the thermocouple position.