

AFP (APN) Valve Actuator circuit board types and connections Jan 2022

SRI GCs may be configured with 10port valves and actuators made by a company named AFP. They recently changed names to APN which is confusing.

Adding to the confusion is the number of board type variations over the last few years. This photo shows the main board types from oldest to newest.

The good thing is that the new board types are backwards compatible with the actuator motor.

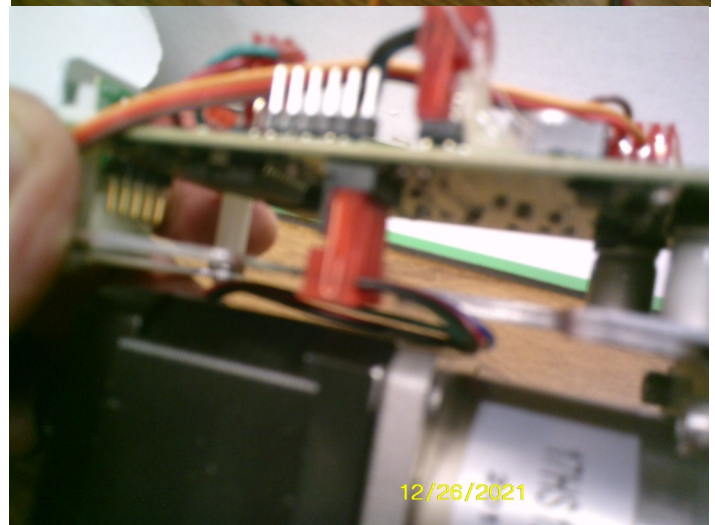
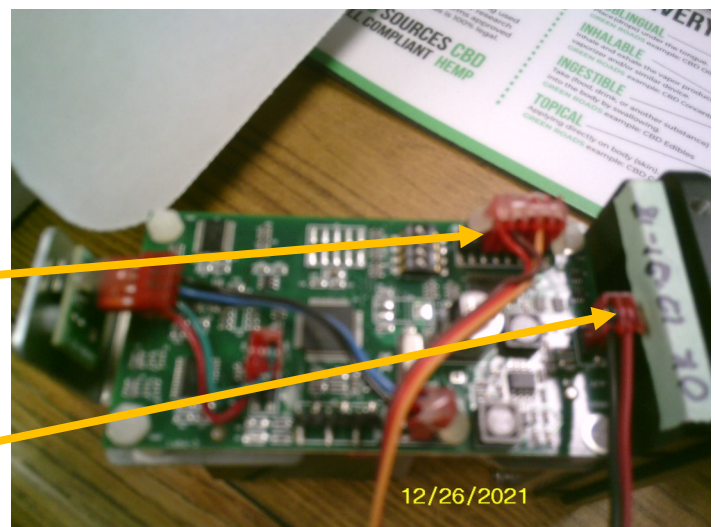
This is the oldest board type.

These three wires (orange, brown, red)control the position of the valve.

This is the 24volts DC power (red and black wires)



Note that the motor (4 wires-blue, red, green and black) is connected to the bottom of the board on this board variation.



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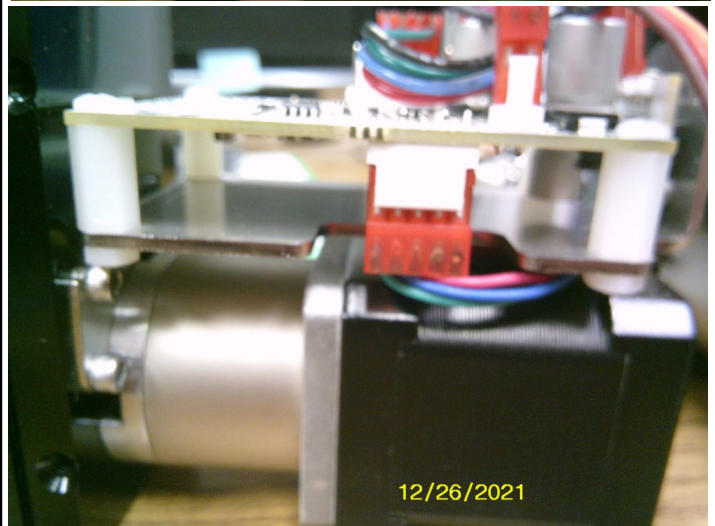
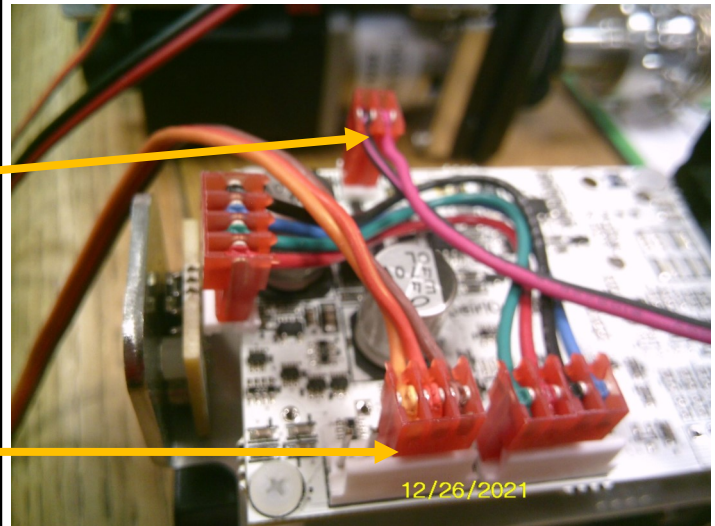
This is the 24volts DC power (red and black wires)

The next board revision looks like this.

These three wires (orange, brown, red) control the position of the valve.

There are un-used pins in the jack so note this carefully.

The motor connects to the bottom of the board on this version.



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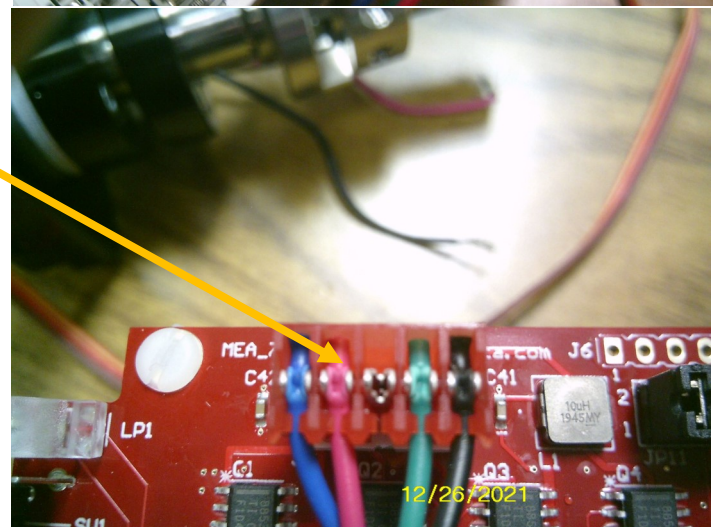
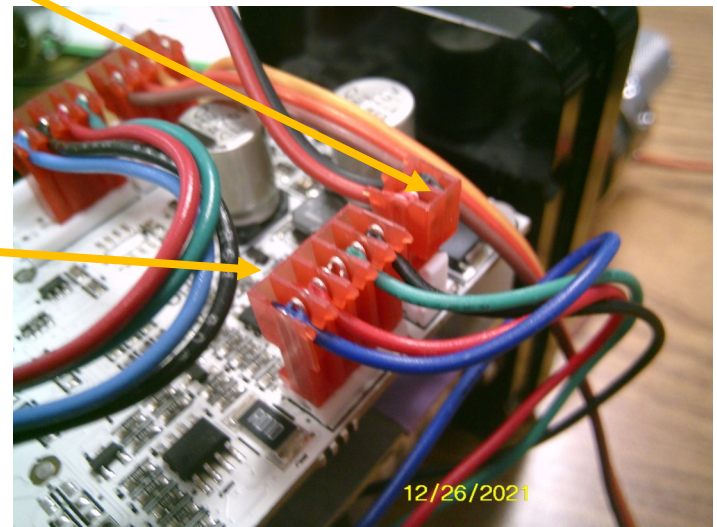
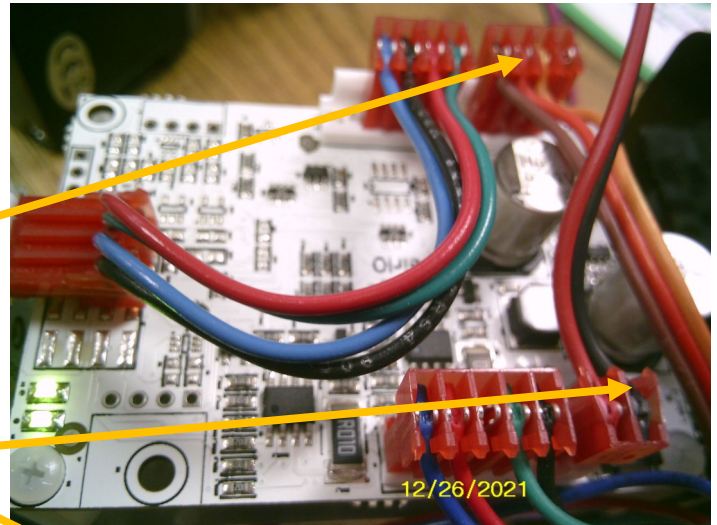
The next board revision looks like this.

These three wires (orange, brown, red) control the position of the valve.

This is the 15 or 24 volts DC power (red and black wires). It works with either voltage.

The motor connects to the top of the board on this version.

Notice that the motor wires are connected to a 5 pin plug and there is a blank pin in the middle.



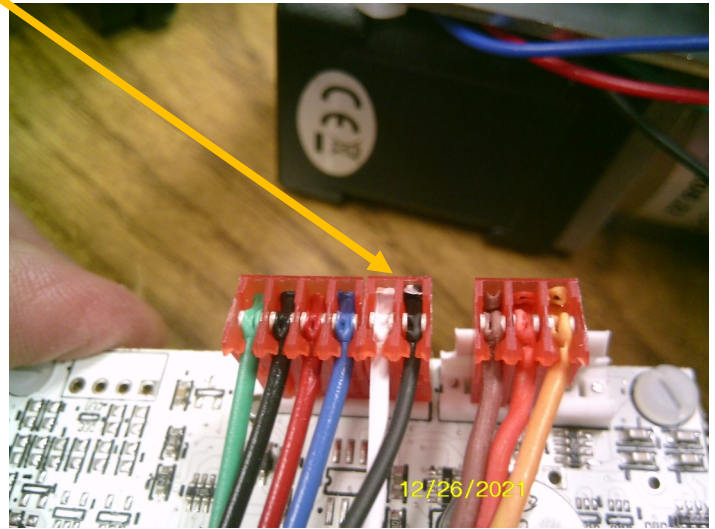
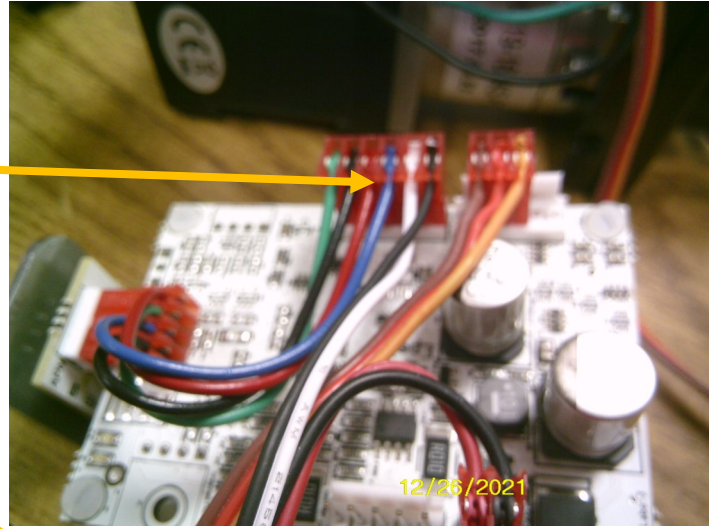
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There is a similar looking version of the board which has a black and white wire also.

This board may be identified with a printed sticker as MEA 0003 rev 2.1.1

The black and white wires (priority bus) would be connected to the black and white wires of a 2nd or 3rd valve in the same GC to prevent the valves from actuating at the same time. The priority bus is not required in the latest version of the board (MEA0007) since multiple valves can actuate at the same time without causing problems.



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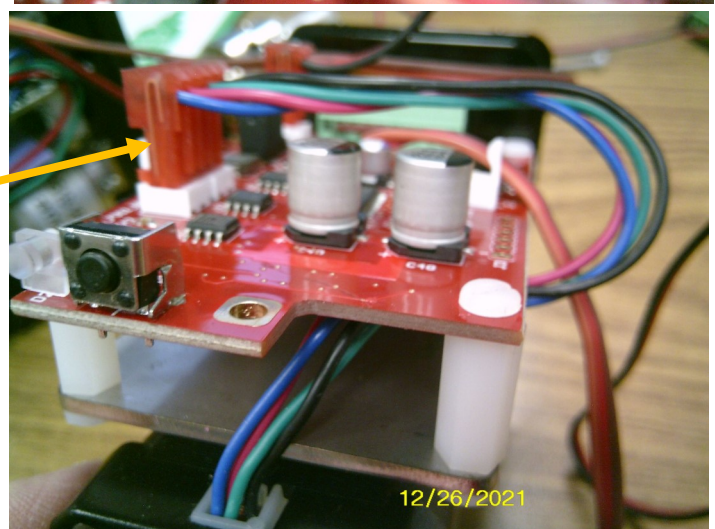
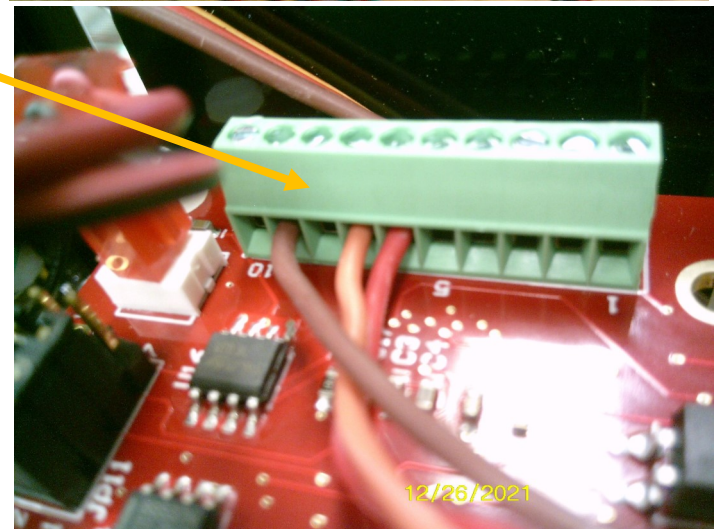
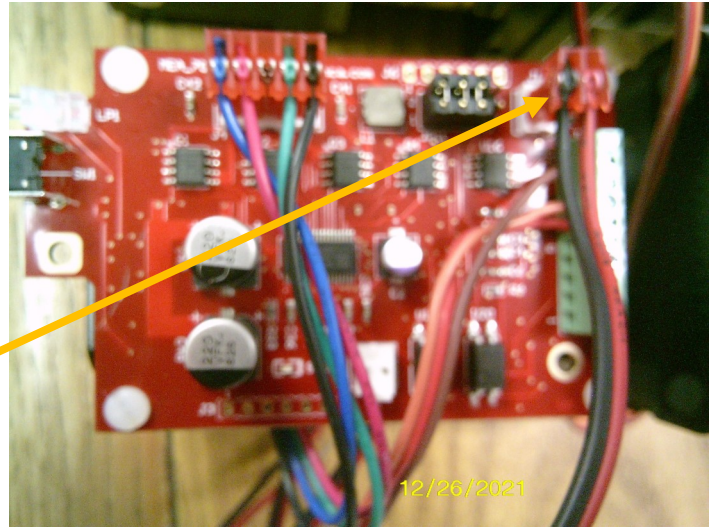
The latest board revision looks like this.
It is identified as MEA 0007

This is the 15 or 24 volts DC power (red and black wires). It works with either voltage.

These three wires (orange, brown, red) control the position of the valve.

When the red wire is touching the brown wire the valve is in the Load position.
When the orange wire is touching the brown wire the valve is in the Inject position.

The motor connects to the top of the board on this version.



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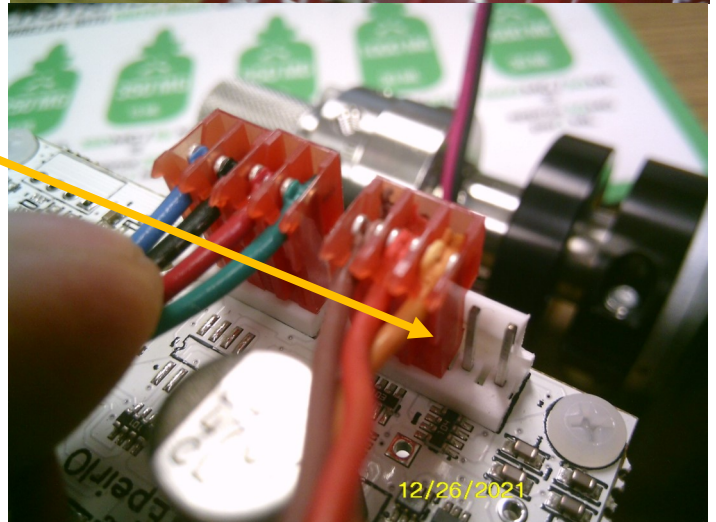
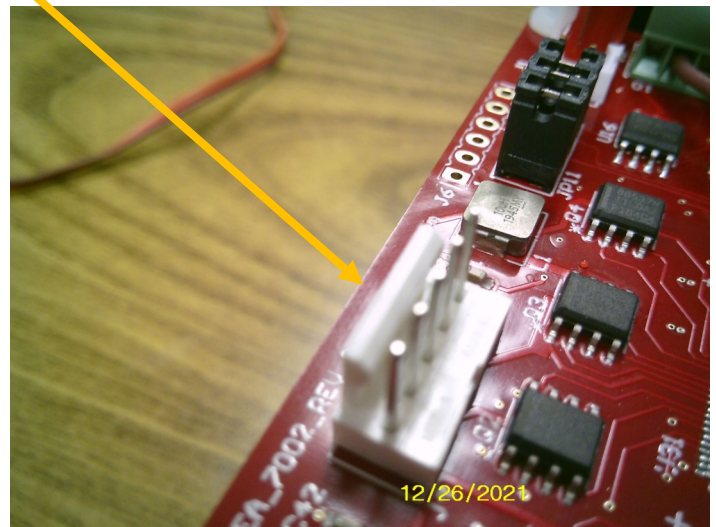
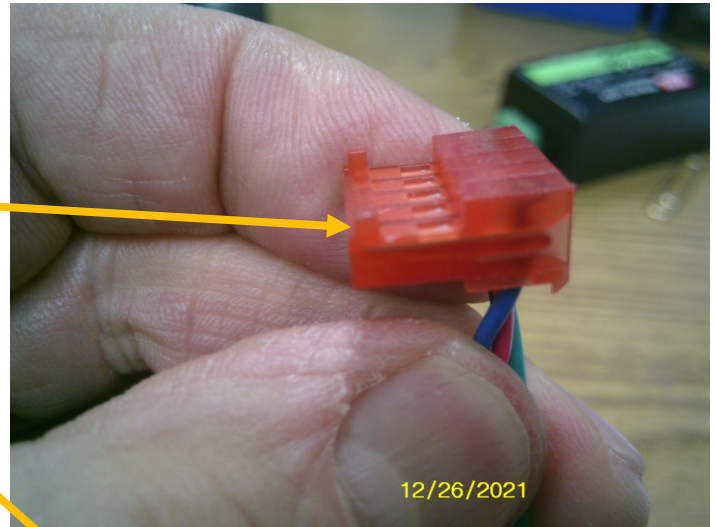
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Note that the wires are connected into plugs that are keyed so they only fit on the jack in one direction.

On the latest board revision there are no un-used pins so its hard to make a mistake when connecting the wires.

But on some earlier revisions, there are extra pins in the jacks that could result in connecting the wires to the wrong place.

Pay special attention to this
Before you disconnect any wires.



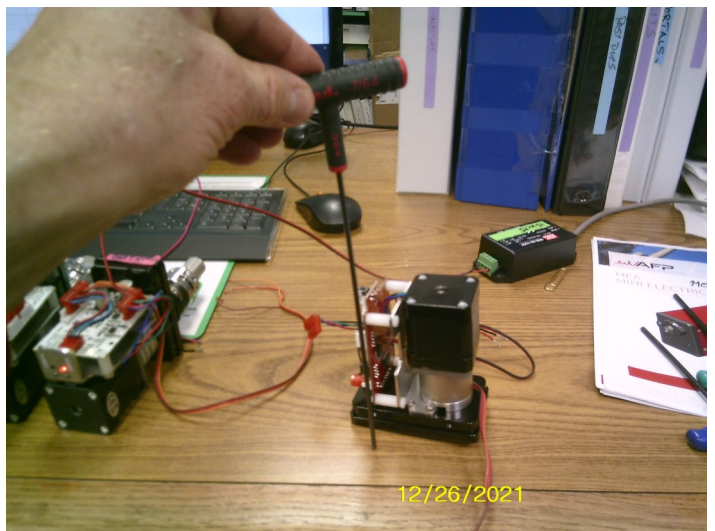
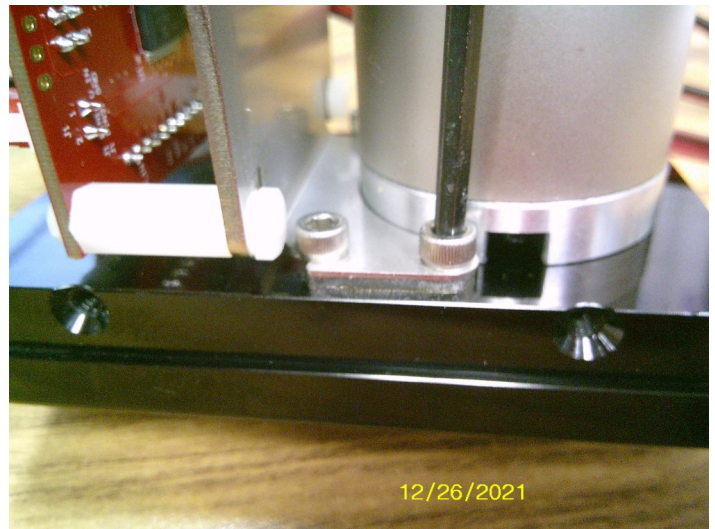
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The boards are attached to a bracket which connects to the motor with 4 hex head screws.

Its easiest to remove and re-attach these screws with a long handled hex wrench.

The size of the hex wrench is 7/64"
A 3mm wrench is too big, and a 2.5mm is too small.



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