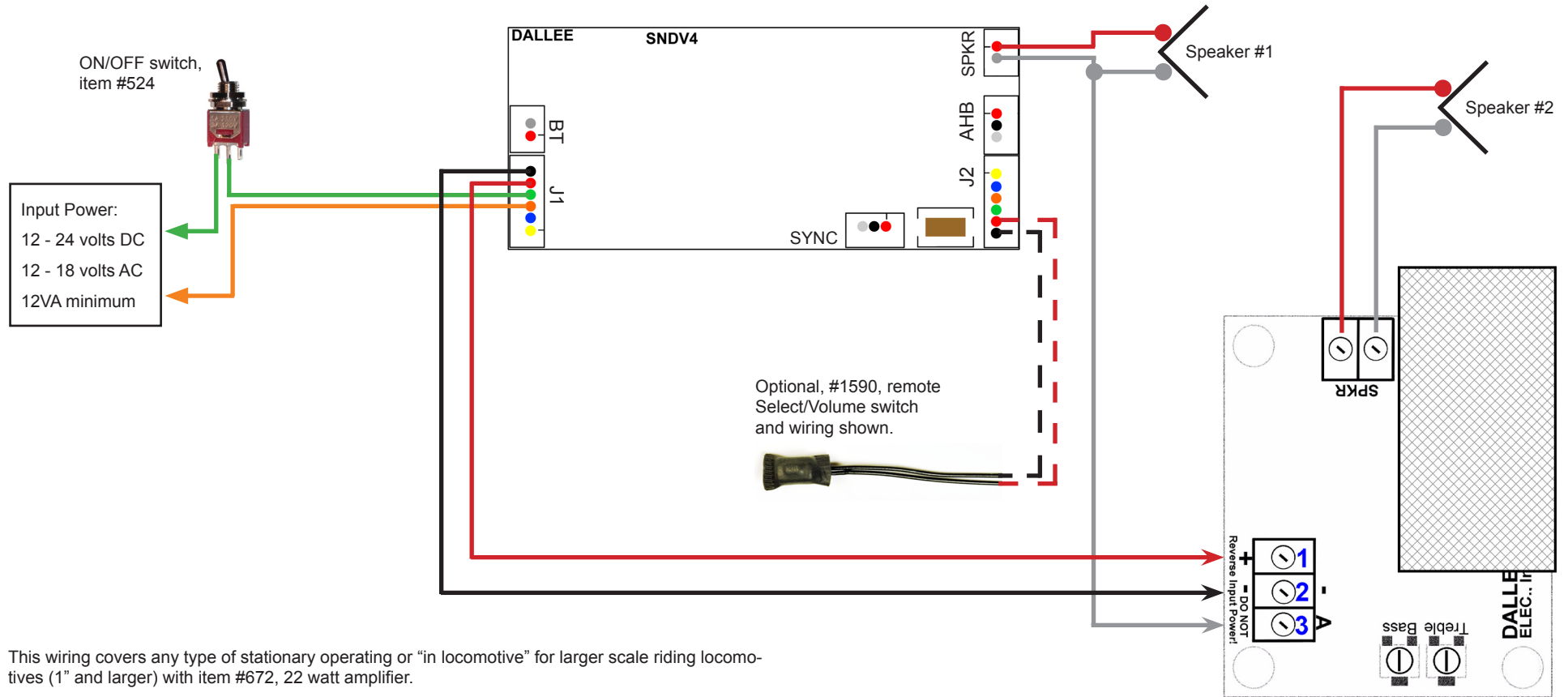


## Adding a 22 Watt Amplifier to the sound unit for Stationary and larger “ride on” gauges (1” and larger)



This wiring covers any type of stationary operating or “in locomotive” for larger scale riding locomotives (1” and larger) with item #672, 22 watt amplifier.

Two speakers can be utilized or just one larger speaker (speaker #2) from the amplifier as shown. If using just a speaker from the amplifier you will not know when the sound card has discharged enough to be able to enter the “select” menu. Therefore, we recommend always using two speakers even though “Speaker #1” will not be the main speaker. It is important to connect the red wires for the speakers to the “+” terminals of each speaker to keep them in phase with each other. However, if one speaker is facing up and the other is facing down, then this needs to be reversed. The sound will appear to come from between the speakers when they are connected properly. When the speakers are connected in reverse, it will sound hollow.

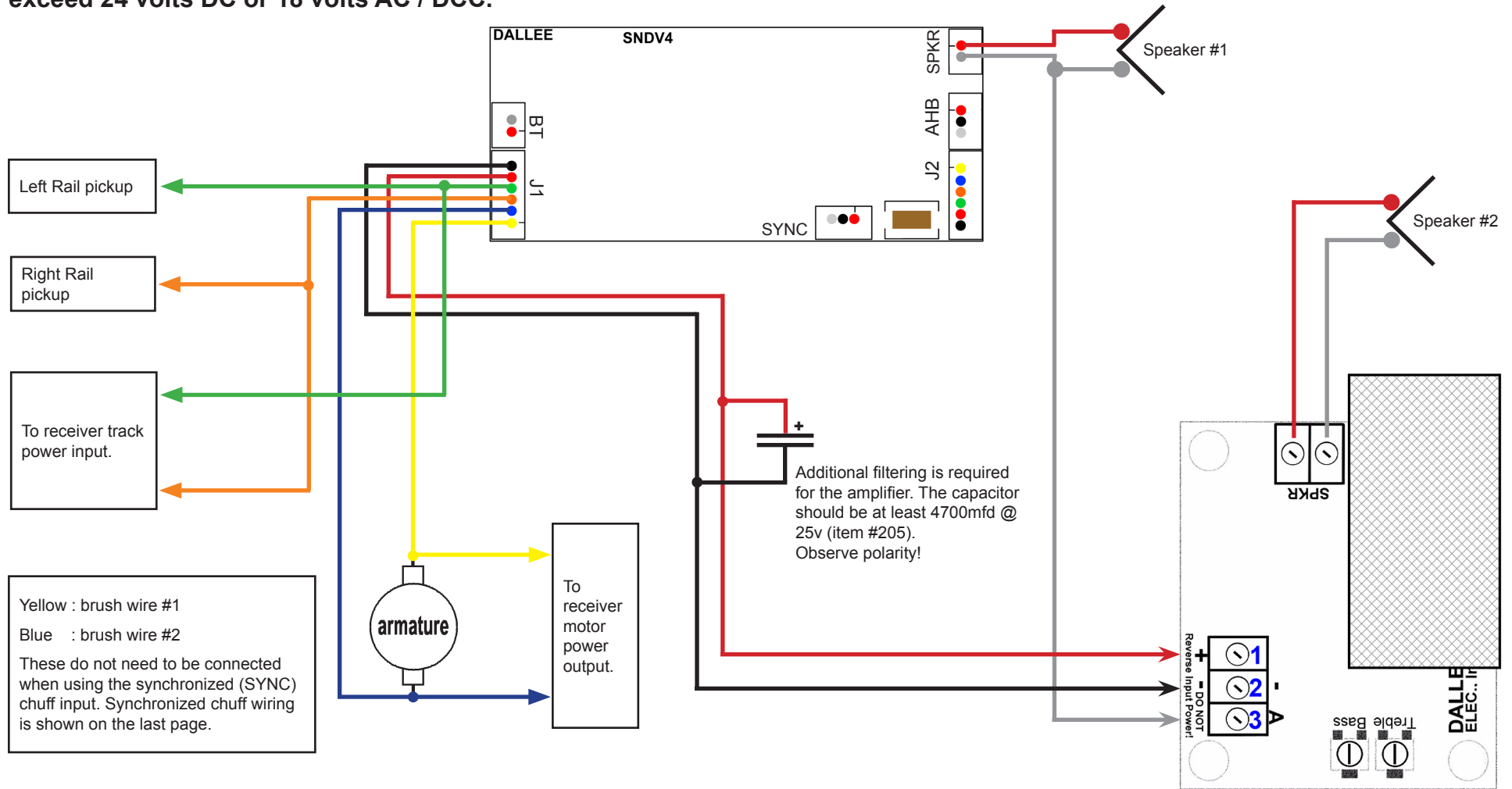
All other connections to the sound unit need to be made as necessary to control the RPM of the Diesel Prime Mover (J1 Blue and Yellow) and power to the sound unit (either J1 Orange and Green or J1 Red and Black). If AC, or unfiltered DC, power is used, then an additional filter capacitor of 4700mfd or larger, at 25 volts, needs to be placed across the DC power connections (RED and BLACK wires).

J2 wires need to be connected for sound activations.

The amplifier can also be added to any of the fixed track or battery types of installations with at least 12 volts track or battery power. Any voltage below this will not allow the amplifier to function.

Remote Select/Volume switch, #1590, can be added via the J2 Red and Black wires.

**Adding a 22 Watt Amplifier when using track power and a receiver (Radio or DCC decoder) if the track voltage does not exceed 24 volts DC or 18 volts AC / DCC.**



This wiring covers any type of "in locomotive" for larger gauge AC operated locomotives with item #672, 22 watt amplifier.

Two speakers should be utilized since the amplifier will not function at lower AC track power settings (typically less than 9 volts AC). Speaker #1 can be a smaller speaker that will supply sounds with low voltage. A larger speaker (speaker #2) would be utilized with the amplifier as shown. If using just a speaker from the amplifier you will not know when the sound card has discharged enough to be able to enter the "select" menu. Therefore, we recommend always using two speakers even though "Speaker #1" will not be the main speaker. It is important to connect the red wires for the speakers to the "+" terminals of each speaker to keep them in phase with each other. However, if one speaker is facing up and the other is facing down, then this needs to be reversed. The sound will appear to come from between the speakers when they are connected properly. When the speakers are connected in reverse, it will sound hollow.

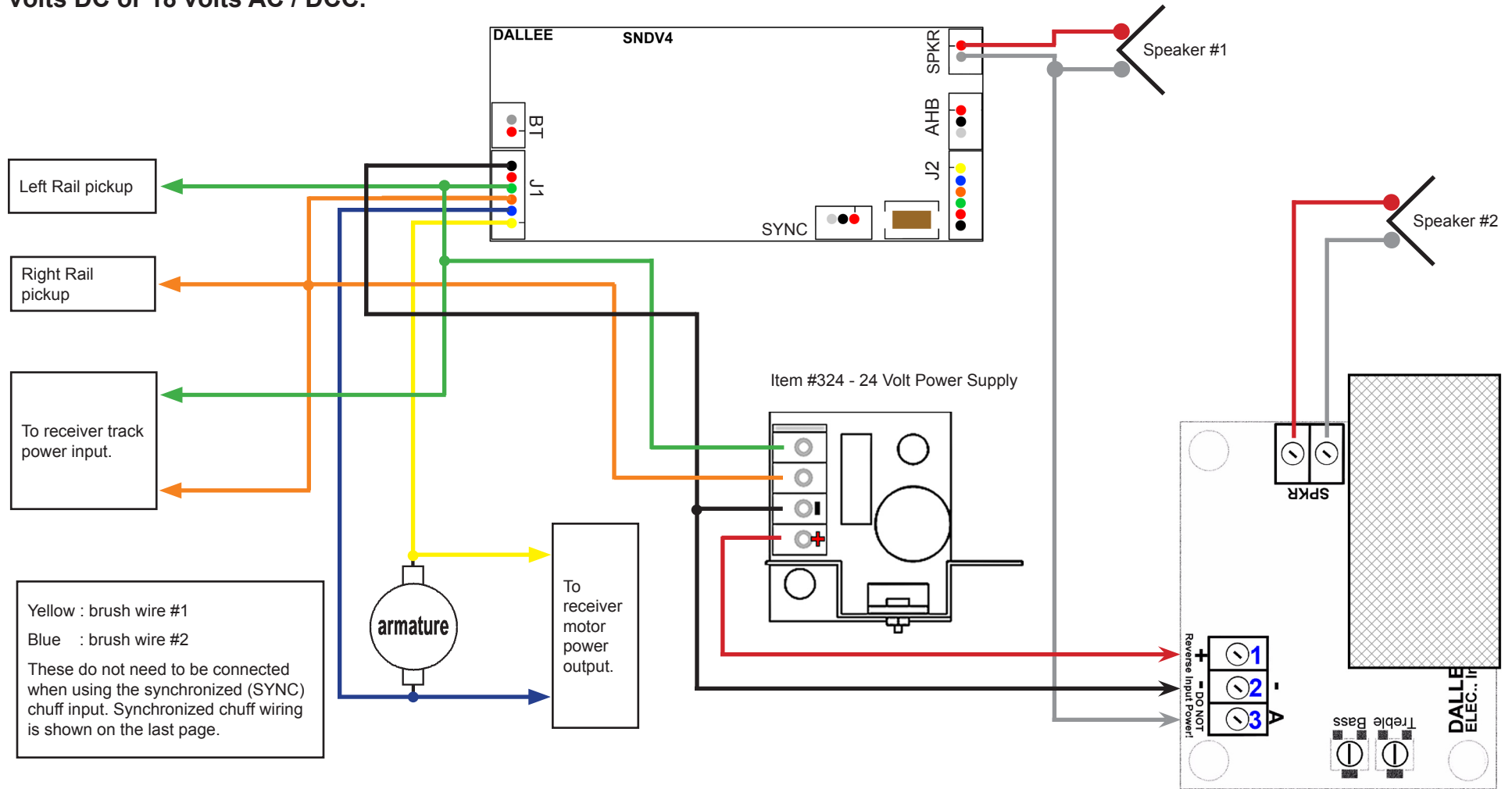
All other connections to the sound unit are as shown.

**Options:**

Remote Select/Volume switch, #1590, can be added via the J2 Red and Black wires.

If only two of the 8 pin wire harness is required, then item #222 or #224 (a 2 pin wire harness) may be desired to use instead since these are two pin wire harness. The color code will not match but that's not important, only that it is plugged into the lower part of J2 so that it connects to the marked Red & Black location.

**Adding a 22 Watt Amplifier when using track power and a receiver (Radio or DCC decoder) if the track voltage exceeds 24 volts DC or 18 volts AC / DCC.**



This wiring covers any type of "in locomotive" for larger gauge AC operated locomotives with item #672, 22 watt amplifier.

Two speakers should be utilized since the amplifier will not function at lower AC track power settings (typically less than 9 volts AC). Speaker #1 can be a smaller speaker that will supply sounds with low voltage. A larger speaker (speaker #2) would be utilized with the amplifier as shown. If using just a speaker from the amplifier you will not know when the sound card has discharged enough to be able to enter the "select" menu. Therefore, we recommend always using two speakers even though "Speaker #1" will not be the main speaker. It is important to connect the red wires for the speakers to the "+" terminals of each speaker to keep them in phase with each other. However, if one speaker is facing up and the other is facing down, then this needs to be reversed. The sound will appear to come from between the speakers when they are connected properly. When the speakers are connected in reverse, it will sound hollow.

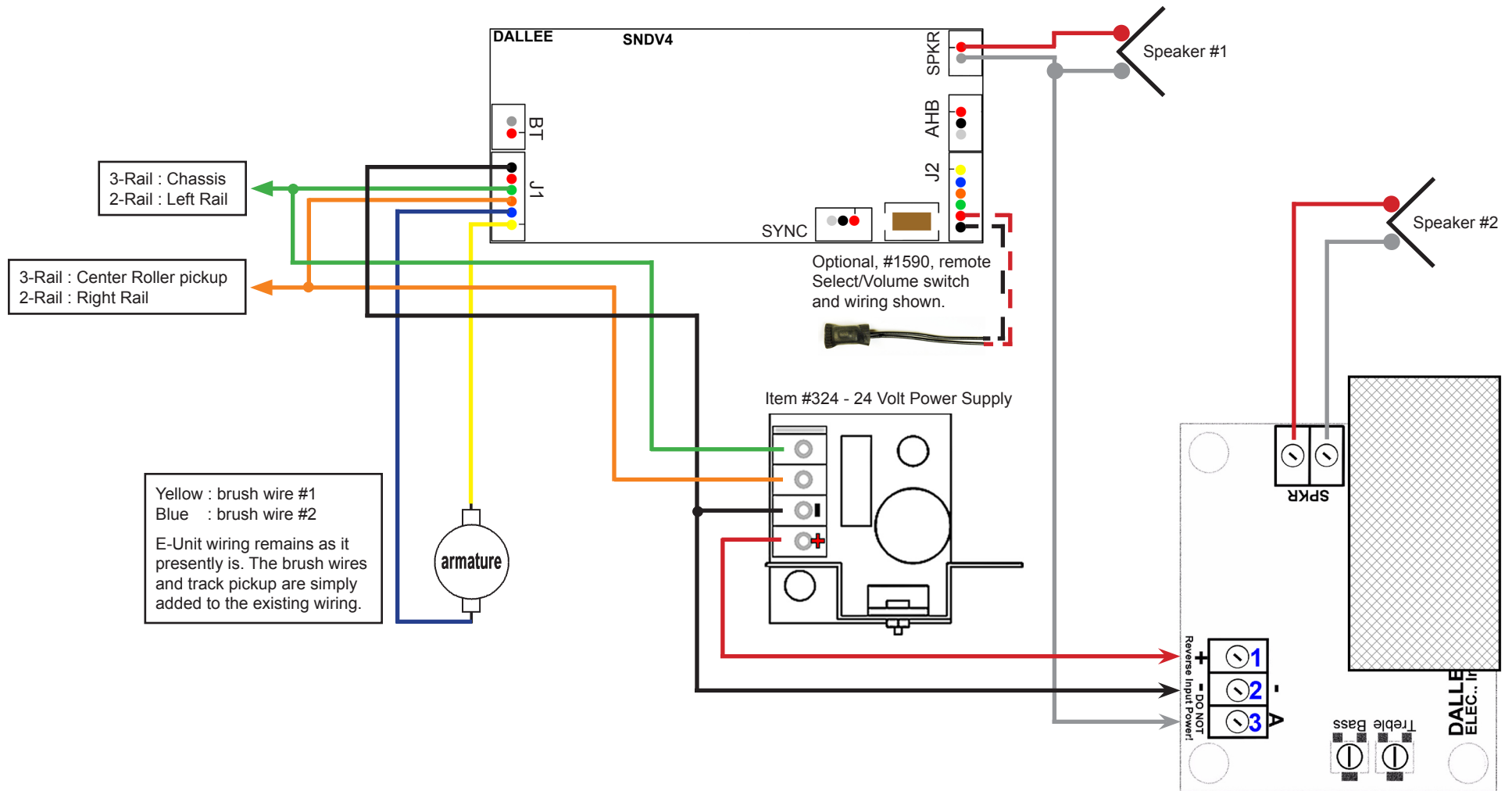
All other connections to the sound unit are as shown.

**Options:**

Remote Select/Volume switch, #1590, can be added via the J2 Red and Black wires.

If only two of the 8 pin wire harness is required, then item #222 or #224 (a 2 pin wire harness) may be desired to use instead since these are two pin wire harness. The color code will not match but that's not important, only that it is plugged into the lower part of J2 so that it connects to the marked Red & Black location.

## Adding a 22 Watt Amplifier to the sound unit when using AC track power that can exceed 18 volts.



This wiring covers any type of "in locomotive" for larger gauge AC operated locomotives with item #672, 22 watt amplifier.

Two speakers should be utilized since the amplifier will not function at lower AC track power settings (typically less than 9 volts AC). Speaker #1 can be a smaller speaker that will supply sounds with low voltage. A larger speaker (speaker #2) would be utilized with the amplifier as shown. If using just a speaker from the amplifier you will not know when the sound card has discharged enough to be able to enter the "select" menu. Therefore, we recommend always using two speakers even though "Speaker #1" will not be the main speaker. It is important to connect the red wires for the speakers to the "+" terminals of each speaker to keep them in phase with each other. However, if one speaker is facing up and the other is facing down, then this needs to be reversed. The sound will appear to come from between the speakers when they are connected properly. When the speakers are connected in reverse, it will sound hollow.

All other connections to the sound unit are as shown.

### Options:

Remote Select/Volume switch, #1590, can be added via the J2 Red and Black wires.

If only two of the 8 pin wire harness is required, then item #222 or #224 (a 2 pin wire harness) may be desired to use instead since these are two pin wire harness. The color code will not match but that's not important, only that it is plugged into the lower part of J2 so that it connects to the marked Red & Black location.