Back-N-Forth

1 ampere, 2 Track's (DC track power) Item #562

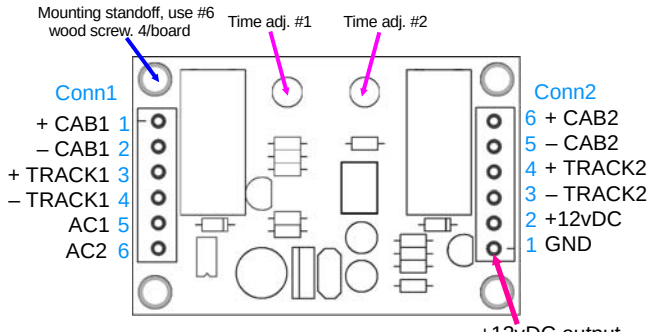

Fig 1: Back-N-Forth connections

AC1 / AC2.....fixed AC from power pack of 14 - 20 volts AC

+CAB1 / – CAB1.....throttle1 variable DC.

+TRACK1 / –TRACK1....output to track1.

+CAB2 / – CAB2.....throttle2 variable DC.

+TRACK2 / –TRACK2....output to track2.

+12vDC output is a regulated output to operate a Trak-DTT2 for the addition of timed station stops. It is not intended to be a supply for other items.

install wires by stripping insulation back 3/16", place wire in hole, run screw down to clamp in position.

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The Back-N-Forth works on the principle of reversing track power in a predetermined amount of time. In order to have the appearance of timed stops, the time before reversing has to be longer than the time it takes the trolley car / engine to achieve the opposite end. Otherwise a reverse will occur without a timed stop or achieving the opposite end. Fixed AC has to be used to power the Back-N-Forth. The Back-N-Forth also provides fixed 12 volts DC power to utilize the Dallee Trak-DTT2, item 368, to achieve the addition of timed station stops between the ends. By utilizing this item, the station stops will always occur at the required locations instead of relying on a certain amount of time to get there. DO NOT utilize this output for any other items nor apply any input power to this output. You will damage the unit by doing so.

Installation: Find a convenient location to place the Back-N-Forth board. By using four #6 wood screws, the Back-N-Forth can be mounted securely. Connections are shown for Conn1 and Conn2, merely follow the connections as shown on the main diagram, Fig 1 and Fig 2 as applies. The fixed AC power connects to terminal 5 and 6. While the polarity of the input and output track / cab power is shown, it is not important only for reference to the wiring. CAB #1 terminals are 1 and 2 as shown. These are the input power to the Back-N-Forth from the variable DC output power of the power pack utilized. This is normally labeled as CAB output or Variable DC. Terminals 3 and 4 connect to track #1 as shown in the wiring diagrams. It is then necessary to isolate one rail and install the directional diodes as shown in Fig 2. These can be either soldered to the underside of the rail or installed beneath the layout with wires attached to each.

Fig 3 shows a block diagram of the basic installaion for both tracks. Two variable speed controls are shown as CAB #1 and CAB #2. Each track has an independently controlled timer setting.

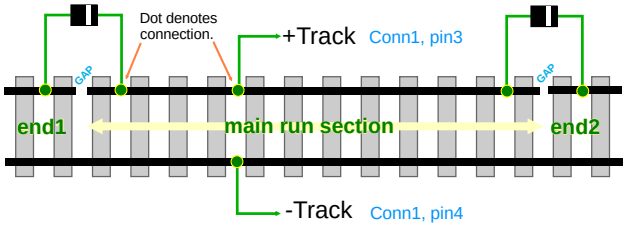
Operational Notes: If the fixed AC is being provided from a small power pack, it must have sufficient power to not only power the trolley / engine but also the electronics. If this is insufficient, the unit will not function correctly. If sufficient power, other than the power pack is required, Item # 690 provides plenty of power for the Back-N-Forth but also for many other items as well.

Operation: The trolley / train can be started at any location with the Back-N-Forth. If it is in one of the ends that requires the time to expire before reversing, then nothing will happen until then. Otherwise the trolley / train will start operating as soon as track power is applied. If utilizing a train, the one end stop has to be extended far enough to encompass the engine with cars while the other end only needs to contain the engine.

If the timed reverse is not long enough for the length of track desired, you will need to use item 609. The item 609 back-n-forth package utilizes track sense for operation which requires the trolley / train to get to the end before the reverse operation is performed. This way an infinte length of track can be used as well as any speed or time required to get to the opposite end before reversing occurs.

Extra diodes, Item #374

Fig 2: Standard track wiring



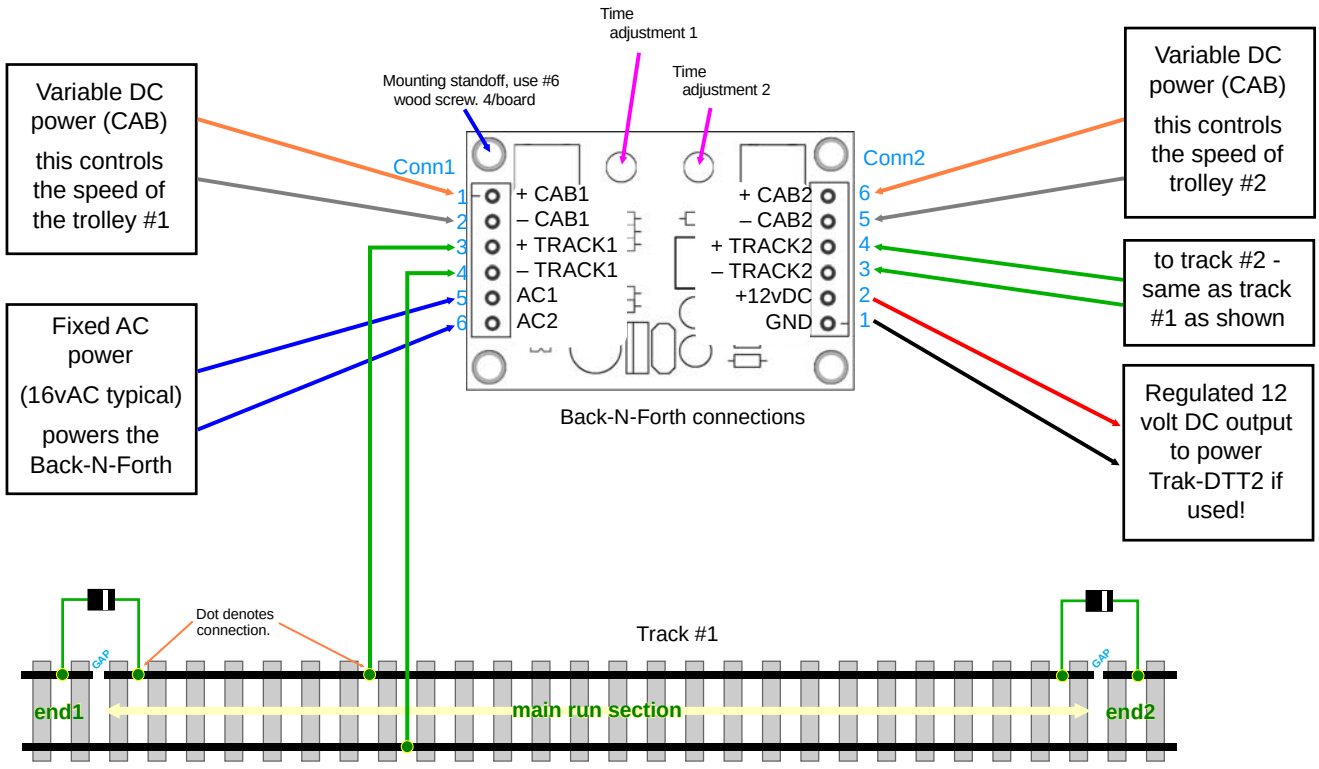
GAP - insulated section via an air gap or nylon rail insulator/joiner

Diodes can be place on the far or near rail but must be in the proper direction. If you run off the end without stopping, you have to reverse the direction of the diodes. They must also both point in the same direction.

Attention G operators:

All "G" gauge engines are wired reverse of NMRA/American standards. You have to install the diodes shown above in the opposite direction as shown in the diagram. Otherwise you will run off the end without stopping!

Fig 3: Block wiring diagram



if your trolley / engine runs off the ends witout stopping, merely reverse the direction of the diodes. The diodes on both ends must point in the same direction.

Fig 4: Track wiring with stop section using Trak-DTT2 (368)

Although only one stop is shown, multiple stops can be made by merely adding more insulated sections and connecting in a similar manner.

As shown, connect +12vDC input to Back-N-Forth board, Conn2, pin2 and GND to Back-N-Forth board Conn2, pin1. DO NOT get these reversed!

When trolley car/engine enters the STOP section, the Trak-DTT will activate and remove the power from the track. When the time period is up, power will be restored to the track. The Back-N-Forth time has to be made longer so that the trolley car / engine has time to get to the other end without reversing.