

DARC Board Parallel Cable Adapter

This document illustrates how to make an adapter for a standard 25 pin parallel cable (sometimes called printer cable). The adapter is used to connect a PC to the DARC Board in order to program the DARC Board using the BASCOM compiler/programming software. If you use this adapter rather than cutting off an end of the cable and slicing wires directly, you can continue to use the parallel cable for other standard purposes.



List of parts/tools necessary:

DB-25 pin connector parallel cable with male connector on one end, female on other
CPU to Phone D-Sub Connector, Female, such as Radio Shack 276-1406
5 pin connector female housing, with wires (for connecting to DARC Board)
Wire cutters
Wire strippers
Electrical tape or heat shrink tubing (and heat gun)

Shown here is the Radio Shack part number 276-1406 in packaging. Any similar adapter will work fine though.



1. Open the package and remove the plastic housing (colored grey here). Inside are several wires which are connected to the phone connector. Snip all of these wires as close to the phone connector as possible. Set aside the orange, green, yellow, red and black wires. You can throw away the others or keep for later projects. You do not need them for this adapter.



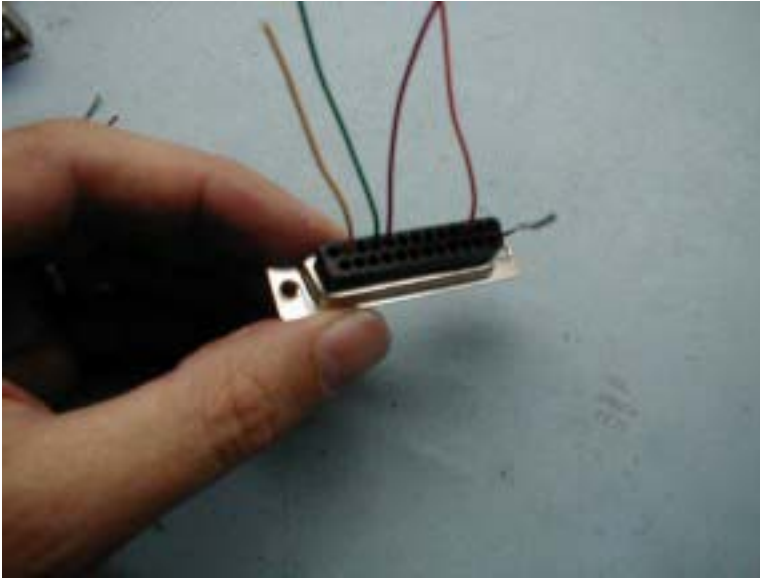
2. The black plastic connector mounted in a metal frame is the part that will plug into the male connector of your DB-25 cable. The wires that you just snipped loose have female receptacles that fit into holes on this plastic connector. If you look closely at the plastic connector, you can see that each of the holes is marked with a number. In the photo on the left, you can see that the top right hole is 13. The bottom right hole is 25. In this photo the hole/pin number is to the left of the hole which it marks.

The orange wire will go into hole 11 as shown. Note that you can only insert the female receptacle on one side (the back of the connector housing). The other side (the front) is the part that will plug into the parallel cable.

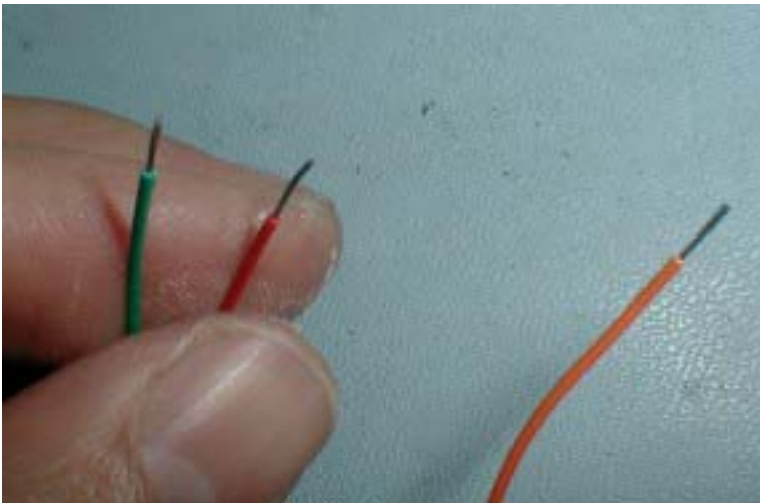


3. Similarly connect the remaining wires as shown below in the appropriate holes.

Yellow	- 2
Green	- 4
Red	- 5
Orange	- 11
Black	-25



4. Strip the wires so that there is about 1/2" of wire exposed.



5. Now find the 5 pin connector housing with attached wires. The colors of the wires should match those of the adapter's wires which you placed in step 3. Twist the wires together so that they form a bundle like that shown.



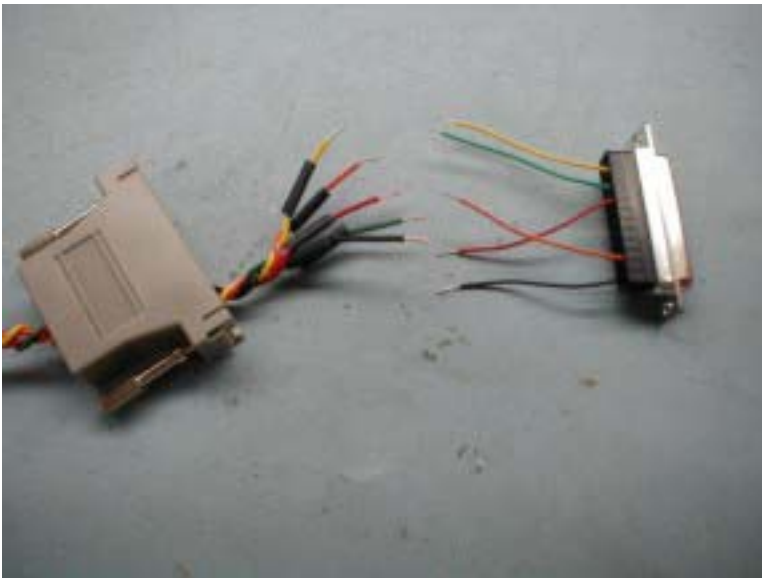
If you provided your own connector and wire harness, the wires will almost certainly not match. So you must be careful to match up wire with correct wire on the black connector. Use the table below to do this. Note that the DARC Board connector is not polarized, so the position of pin 5 on the 5 pin connector is arbitrary. Pick one to be pin 5 and mark it so that you know this is the Ground pin.

Color	DB-25 pin/hole	5 pin connector pin
Yellow	- 2	1
Green	- 4	2
Red	- 5	3
Orange	- 11	4
Black	-25	5

6. Push the wires up into the grey adapter housing through the hole near the phone connector.



7. Strip these wires, also about $\frac{1}{2}$ " then lay the housing next to the black connector with wires and align the colored wires to match up. The order does not matter, nor does it matter if there are any twists. Just be sure that you will be connecting yellow to yellow, etc. If you intend to use heat shrink tubing, place one inch lengths of the tubing on each wire and slide down away from the stripped wire. If you will be using electrical tape you don't need to do anything at this point.



8. Twist the wires together and solder. Yellow to yellow, orange to orange, etc. The photo below shows some wires connected with heat shrink tubing in place already, others only soldered. You can solder all of them, then seal the heat shrink or place electrical tape in whatever order you like. Just be sure to insulate each wire from its neighbor to prevent them shorting.



9. Snap the completed assembly together. The black connector will snap easily into the grey housing as shown.



The completed adapter is shown below. I mark my 5 pin connector with black marker to identify pin 5 which is ground. If you used a provided 5 pin connector and wires then pin 5 will have black wire, but marking can be useful for reference. The photo on the first page of this document shows how the adapter connects to the DARC Board programming header. Notice that the black wire pin goes toward the bottom of the board.

All you need do is to connect to the male connector on your parallel cable. To use the cable later for some other purpose, just remove the adapter.

