

Instructions to install the MC-320 replacement element kit for an Astatic D104 head.

Note: These instructions are intended to be used with the XTLK mounting kit along with the 25LM022 microphone element sold separately.

If you are not sure if your D104 is a 2-piece or 3-piece head, make sure you remove the screws from the rear of the Microphone **NOT** the front. Both sides of a 3-piece head will come apart when the rear screws are removed but if you attempt to remove the front from a 2-piece head, they will be damaged.

For 3-piece heads:

1. Remove the microphone head from the handle by unscrewing the feruled nut located just below the head and pull the microphone out of the handle.
2. Remove all 4 screws from the back plate.
3. Remove the back plate and expose the back of the MC320 crystal element.
4. Remove the screw that holds the 3 pin plug in place on the head, next to the feruled nut.
5. Unsolder the wires from the 3 pin plug by pulling it out from the D-104 head and heating the very tip of each connector until the solder melts and you can pull the wire from the plug.
6. Remove the old crystal element and packing spacers (if any) from the head.
7. Clean the solder out of pins 2 and 3 of the 3 pin plug. You should be able to see through each pin with the solder has been sufficiently removed.
8. Carefully remove the replacement element from the kit.

9. **NOTE:** The MC-320 original mic element did not have polarity but the new element does. It is advised to make sure that your Astatic D-104 mic has not been previously modified as to change to internal mic connections of the tower's plug connector. Original wiring should have the # 2 pin (- solder lug on the element) connector grounded through the PTT bar. This pin should have an internal tower wire with the color of Yellow or Black. The #3 pin is the microphone element's audio (+ lug on the element) that is fed into the base's amplifier and should be a Green wire. You can remove the screw holding in the female connector and pull the female connector out of the tower just enough to check these pins and the color of wire connected to them. **If you find any discrepancy you should investigate the internal wiring with a DMM before continuing.**

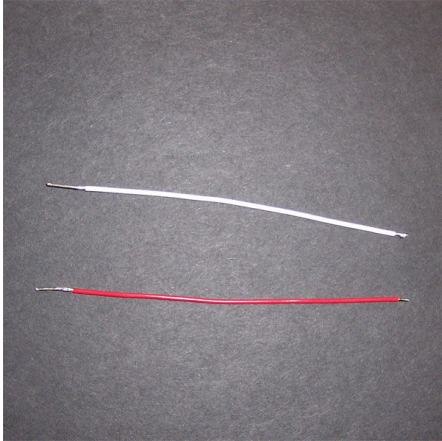
10. Attaching audio leads to the 25LM022 Crystal Element:

WARNING: The + soldering lug can be easily damaged by apply too much heat for too long of a period from a soldering iron. If you are not experienced in wire soldering, it is recommended to take the element to an electronics shop to have the wires attached to the element. **Pre-test the element for audio output before applying solder as we will not accept returns on elements that are DOA once solder has been applied.**

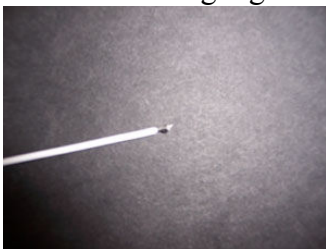
(a) Cut 2 pieces of #22 gauge wire about 4" long. It is preferable to have these wires of different color for reference.

(b) Strip the insulation from one end of each wire about 1/8" and strip the insulation from the other end about 3/16".

(c) Pre-tin both ends of the 2 wires.

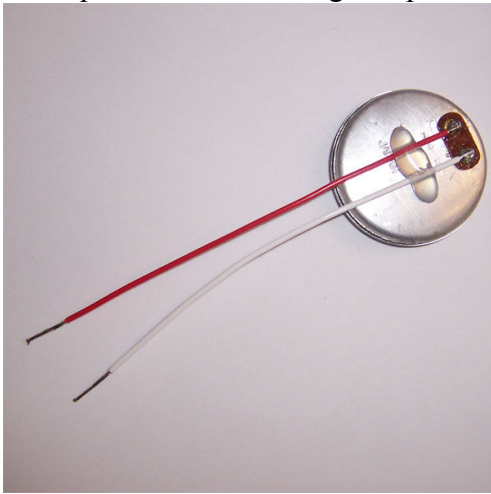


(d) When pre-tinning the wire that you are planning to use for the + lug on the element, load end that was stripped 1/8" up with extra solder. This will allow it to be attached quickly when applying heat to soldering lug.



(e) Solder the other 1/8" pre-tinned wire to the (-) lug on the element. This lug can take much more heat than the (+) lug.

(f) It is advisable at this time to use some hot glue to glue the two wires to the back of the element to keep them from moving and possibly breaking the internal (+) lug wire inside the element loose.



11. Solder the (-) lug wire into the 3 pin plug on the **#2 pin** (mic ground). Solder the (+) lug wire into the 3 pin plug on the **#3 pin** (mic audio). Mic Audio should be the GREEN wire connected to the female socket inside of the tower.
12. Insert the 3 pin plug back into the D-104 head and fasten with its retaining screw
13. Position the element in the Foam Element Mount close to the center of the head ring so that the screw notches are approximately where you want to position the head screws.
14. Insert the Acoustical Baffle Board behind the element, positioning the screw notches over the Foam Element Mount notches.
15. Place the Rear Acoustical Absorption Spacer behind the Acoustical Baffle Board and position the screw notches over the others.
16. Place the rear D-104 cover plate on the back of the head ring to prevent the mounting pieces from moving.
17. With the front of the D-104 head facing up, place the Wind Screen centered over the replacement element.
18. Position the D-104 face (screen) over the Wind screen and compress the foam mounting material. Compression of the kit's material is normal as this keeps the element from moving in the D104's head during use.
19. By inserting each screw body into the four head holes, you can work each one past the Acoustical pads and through the Baffle board. Loosely tighten the back screw as you work each screw body through the head. Don't tighten too much as you will want to rotate the front and back plates to square up the look of the face plate after you get all four screw bodies in.
20. Once you have rotated the face plate to the proper position, tighten all four head screws.

For 2-piece heads:

Assembly of replacement kit is the same as for the 3-piece head but you must install the parts in the order of:

- a. Wind Screen
- b. Element Foam Mount
- c. Replacement element
- d. Acoustical Baffle Board
- e. Acoustical Absorption Spacer

Thank you for your purchase of this mounting kit from RB Micro and enjoy the new, rich sound from your classic Astatic microphone! Please e-mail me and let me know how your installation went.

Bob – K0FR

Disclaimer: Modifications to the TUG/TUP microphones are application dependent and a one-size-fits-all and may not be applicable to your radio environment. RB Micro is not liable for any damages from modifications performed by the user.