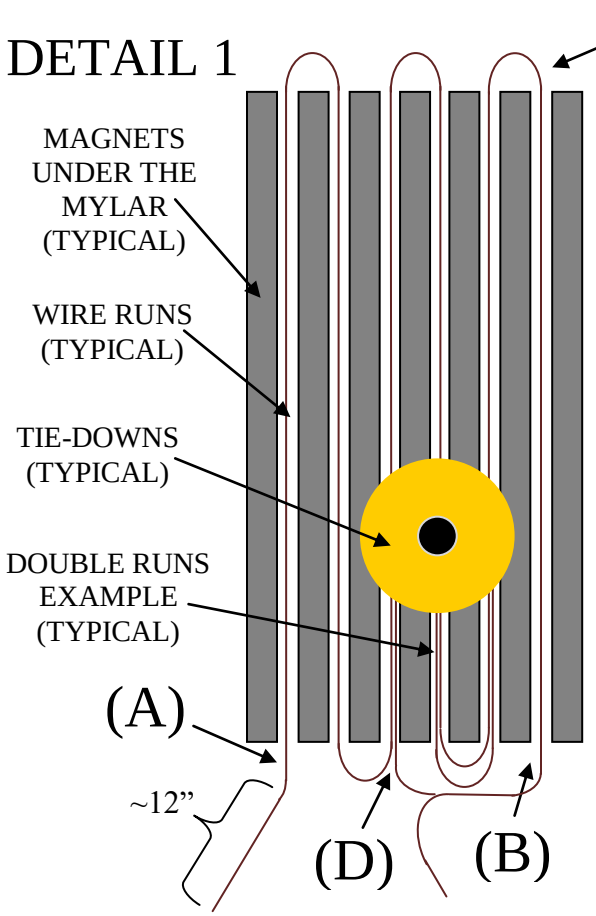
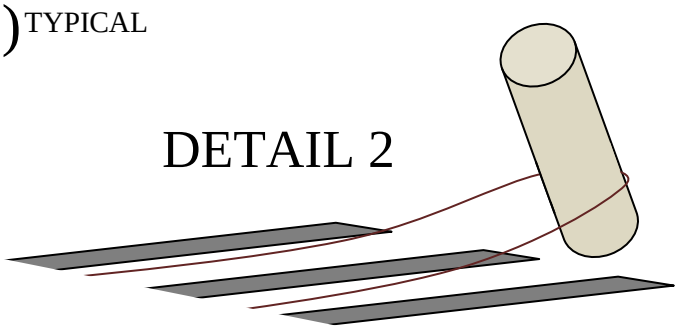
WIRE REMOVAL/INSTALLATION INSTRUCTIONS





Some speakers have multiple layers of fabric while others only have one; and some speakers have stiles that are affixed mechanically or chemically, while others have no stiles at all. Use the appropriate fabric and stile removal instructions as necessary to detach all finish from the speaker such that it can be rewired. Some speakers have pusher-drivers and they will need to be opened up in order to access the wire. Finally, some drivers may need to be removed from the frame in order to rewire. It may be helpful to take pictures throughout the undressing procedure.

Before starting this process read these instructions thoroughly and prepare the work area accordingly. Magnepan strongly advises that all products and tools necessary for the process are available before beginning. A large, flat, well-lit surface upon which to work is ideal, with clean cardboard or similar underneath the speaker being a good idea. Additionally Magnepan recommends rewiring only one speaker at a time. This will allow for the other speaker to be used as a reference. Finally, Magnepan suggest that pictures be taken of the drivers before anything is removed. Make sure to take pictures of each section, the tops and bottoms, any double runs, and the termination. It would not be unreasonable to create a hand-drawn diagram of the wiring pattern. The wire must be applied in the same pattern, with relative precision; the position is critical. Most wire is insulated and the insulation will need to be removed before the wire can be terminated. A fine-grit sandpaper is ideal for this. Ensure that all of the insulation is removed in order to guarantee a quality connection. Solder flux may also be desired when working with old solder joints.

When the rewiring process is completed, the speaker has been let to completely cure, and has passed all desired testing, then it can be reinstalled, re-sealed, and/or re-finished. Refer to the appropriate instructions for these processes. For questions, instructions, or to order parts, contact the Magnepan Service Department at service@magnepan.com or 651-262-1934.

REMOVAL:

1.) Unterminate the sections(s) to be rewired from the terminal block (either by unsoldering or unscrewing). Remove the mechanical fastener affixing any tie-downs that are in the rewiring area (either by drilling out the rivet, removing the nut and the bolt, or unscrewing the screw.) Soak the adhesive around the tie-downs with acetone as necessary and remove them. Do not pull too hard or use brute force to remove the tie-downs as this may damage the Mylar. Clean and save any tie-downs removed as they will be reused.

2.) Using acetone carefully pull the existing wires off of the diaphragm from the section(s) you are planning on rewiring. Use plenty of acetone throughout this process and do not pull to hard on the wires—you can easily tear or break the Mylar by pulling on well-secured wires. If needed let the wire soak in acetone.

3.) After all of the wire is removed from the desired sections(s), using more acetone, carefully clean all of the old adhesive, coating, lifting tape, and/or paint off of the diaphragm area to be rewired.

4.) Inspect the Mylar for obvious pin-holes, slices and/or small tears. Using a high quality cellophane tape, tape over the faults. Make sure to secure the defects completely while not creating any bubbles, wrinkles, or loose flaps. Not all tears can be repaired this way but many can. Send pictures to service@magnepan if you have questions.

5.) If desired, for a superior clear, use a solution of 50% Isopropyl Alcohol and 50% water to remove the acetone residue and any remaining adhesives.

INSTALLATION:

1.) Using 3M Super 77 Spray Adhesive and spraying in sections, apply a light to medium coat of adhesive across the diaphragm area to be rewired. Reapply as needed to keep wire tacked. It is best to wait 5-12 minutes, depending on spray thickness, temperature, air-flow, and humidity, after spraying the Super 77 before pressing the wire down. The ideal consistency is tacky to the finger without being liquid or, "clumpy." The Super 77 will remain this ideal tackiness for about 10 to 20 minutes depending on the above factors—do not spray more of the Mylar than can be rewired within this window. This is typically between 4 and 8 wire runs. Some unneeded extra Super 77 is to be expected but additional mass will decrease the efficiency of the speaker so try to keep additional spraying to a minimum. When wiring double runs (as those are done after all of the primary runs are completed) you will need to spray Super 77 over wires that have already been laid—this is necessary and acceptable. Lifting and re-placing wire after is has already been placed on a surface with Super 77 will decrease the adhesion. This may cause longevity issues or the wire to lift when applying the 30-NF. This should be done sparingly.

2.) When pressing the wire into place make sure to pull firmly (the thicker the wire gauge the more you will need to pull) such that the wire is taut. This will ensure that the wire is straight and slightly stretched which is ideal. Working in comfortable lengths at a time (likely about shoulder width) press and stretch the wires into place centered within the magnet channels. Run a finger back over the positioned and pressed wire, firmly, to secure the wire in place. Thicker gauge wire will require more pressure be applied downward.

3.) Starting at point (A) on DETAIL 1, leave a 12 inch "tail" of wire. Using the installation process, steps 1-2, lay the wire in place until point (B) on DETAIL 1 is reached. Use a cylindrical object to make the turns at point (C) on DETAIL 1 and shown in DETAIL 2. At Point (B) on DETAIL 1 turn the wire around the end of the Magnet in the direction of either the terminal block or toward the start of double runs, point (D) on DETAIL 1. If double runs are needed (remember: following the original wiring patter precisely is crucial) use installation steps 1-3 until you reach the end of the double runs. Path the wire back to the terminal block leaving some extra wire such that it can be easily terminated. Repeat installation steps 1-3 as needed for each section before moving on.

ADHESION, CURING, AND TERMINATION:

1.) After the intended wire is applied, wait at least 2 hours such that all the Super 77 spray is completely dry. With a soft paint brush or foam brush, carefully and gently apply a light coat of the final bonding adhesive, Magnepan's 3M 30-NF mixture over the entirety of the area that has been rewired. Do not apply a thick coat or more than one full coat as added mass will decrease the quality of the speaker. Wait at least 2 hours for the glue to dry.

2.) Using the same process as above apply a narrow band second coat about 3" to 4" at the top and bottom of the driver making sure to cover the ends of the wire loops, area (C) and (D) in DETAIL 1. This will help prevent delamination. Additionally, if tie-downs need to be installed, dab the area that will be underneath the tie-down with 30-NF. Affix the tie-down while the glue is still wet to ensure a good bond. Depending the type of tie-down, bending the the wires slightly such that they fit into the tie-down channels may be necessary. With some models it may make sense to terminate the sections(s) before applying the second band coat in this step, whereas with others that may not be possible. Completely steps 2 through 5 of this section in an order that makes sense.

3.) **For models with mechanical terminal blocks:** lay the stripped wire end under the tab on the terminal block and screw the tab down firmly. Ensure that you are using the correct connection as connection order is critical. Then trim the excess wire. Repeat this process as needed. Consult the pictures taken earlier for position reference.

4.) **For models with solder terminal blocks (eyelet strips):** Remove the existing sealant and solder, or remove the existing strips entirely and affix and use the new one(s) provided. Insert the stripped wire end into the eyelet hole and solder it into place. Ensure that you are using the correct connection as connection order is critical.

5.) Allow at least two hours for the 30-NF to dry before continuing. It is highly recommended that a multimeter be used at this point to test the impedance of each rewired section. Most sections across Magnepan speakers should measure 4 ohms but there are exceptions. Continuity is the most important to confirm, though, and as long as the multimeter reads near a whole number between 4 and 10, it is likely that the rewiring has been successful. In the case of solder terminations now the sealant may be applied. Allow at least 12 hours for all adhesives and sealants to dry completely before music or signal testing the speaker.