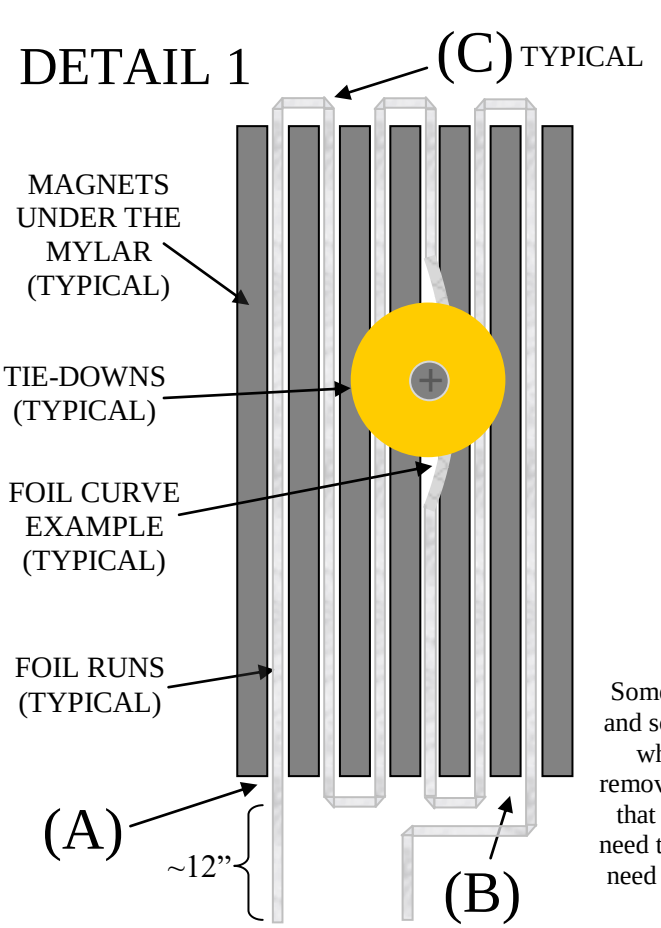
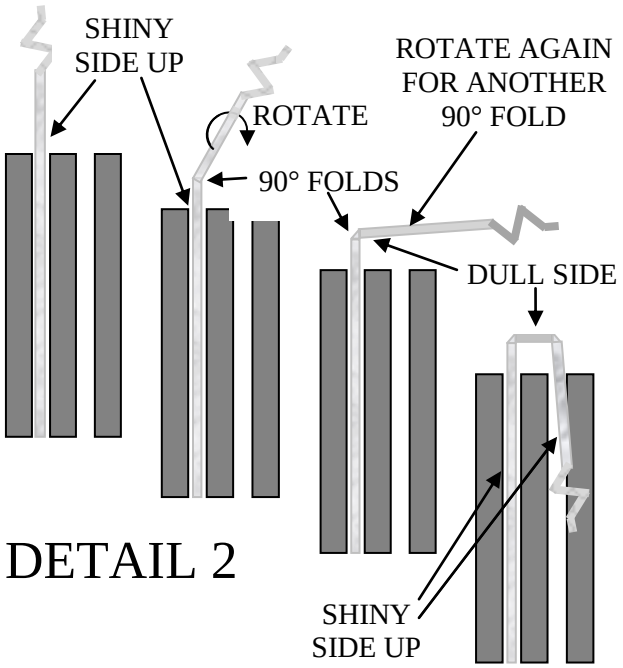
FOIL REMOVAL/INSTALLATION INSTRUCTIONS





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 refoiled. 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 refoil. 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 refoiling 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, and the termination. It would not be unreasonable to create a hand-drawn diagram of the foiling pattern. The foil must be applied in the same pattern, with relative precision; the position is critical. The foil is not insulated and it should not make contact with itself. Anywhere the foil needs to cross over itself must be insulated with tape. When working with foil it is a good idea to pinch off a small section and stretch it until it breaks. This will provide an idea of how delicate it is and how much force can be applied.

When the refoiling 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 refoiled from the terminal block by unscrewing the pad. Remove the screws affixing any tie-downs that are in the refoiling area. 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. Be extra careful when removing a tie-down that overlaps with a section that is not going to be refoiled—the removal can easily break existing foil.

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

3.) After all of the foil 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 refoiled.

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.) For a superior clear, use a solution of 50% Isopropyl Alcohol and 50% water to remove the acetone residue.

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 refoiled. Reapply as needed to keep foil 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 foil 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 refoiled within this window. This is typically between 4 and 8 foil runs. Some unneeded extra Super 77 is expected but additional mass will decrease the efficiency of the speaker; keep additional spraying to a minimum. Lifting and re-placing foil after is has already been placed on a surface with Super 77 will decrease the adhesion. This may cause longevity issues or the foil to lift when applying the 30-NF. This should be done sparingly.

2.) When pressing the foil into place make sure to pull gently, but firmly (the thicker the foil the more you will need to pull) such that the foil is taut but not distorting. This will ensure that the foil is straight and slightly stretched which is ideal. Working in comfortable lengths at a time (likely about shoulder width) press and stretch the foil into place centered within the magnet channels. Run a finger back over the positioned and pressed foil, firmly, to secure the foil in place. Thicker foil will require more pressure be applied downward.

3.) Starting at point (A) on DETAIL 1, leave a 12 inch "tail" of foil. Using the installation process, steps 1-2, lay the foil in place until point (B) on DETAIL 1 is reached. Use the method shown in DETAIL 2 to make the turns at point (C) on DETAIL 1. At Point (B) on DETAIL 1 90° turn the foil around the end of the Magnet toward the terminal block. Path the foil back to the terminal block leaving some extra foil such that it can be easily terminated. Remember that any foil that would cross over other foil needs to be insulated with tape in between. Repeat installation steps 1-3 as needed for each section before moving on.

4.) If the section that was refoiled contains tie-down(s) the foil will need to be curved around the tie-down hole(s). Carefully pull up the foil and gently but firmly push the foil away from the hole, stretching it slightly. The foil needs to be moved such that when it is laid back down flat it will avoid the hole (and the screw) completely while not being over-stressed, crimped, folded, or touching the adjacent foil run. See DETAIL 1 for reference.

ADHESION, CURING, AND TERMINATION:

1.) After the intended foil 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 refoiled. Do not apply a thick coat or more than one full coat as added mass will decrease the quality of the speaker. Step 2 can be done while the 30-NF is still wet.

2.) Terminate the newly refoiled sections by running the foil over the appropriate terminal block section(s), pressing the spring clip in place over the foil, and then screw the terminal screw down hand-tight. Ensure that you are using the correct connection as connection order is critical. It is highly recommended that a multimeter be used at this point to test the impedance of each refoiled section. Many foil sections across Magnepan speakers should measure near 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 1 and 8, it is likely that the refoiling was successful. If the section tests well then trim off the excess foil. Wait at least 2 hours after applying 30-NF before continuing.

3.) 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 foil turns, area (C) in DETAIL 1. Brush the 30-NF right to the edge of the terminal block securing the foil completely. If tie-downs need to be installed, dab the area that will be underneath the tie-down with 30-NF and affix the tie-downs while the glue is still wet to ensure a good bond.

4.) Allow at least 12 hours for the 30-NF to completely before music or signal testing the speaker.