Mini-PROTEAN® II Assembly Tips

Incorrect assembly of the Mini-PROTEAN II upper chamber can cause leaking of the upper buffer from the upper chamber. This may result in poor band resolution and premature ending of an electrophoresis run.

The most common assembly error is pinching the gray gasket of the electrode assembly when the gel sandwich is applied to the electrode assembly.

The edge of the short glass plate must come up under the edge of the notch in the gray gasket. If the glass plate is on top of the notch in the gasket, then the notch will be pinched, and a small hole will be formed, allowing the buffer to leak out. In this case, the buffer leaks only to the top of the short plate and no further.

Verify the placement of the gel sandwich on the core, by making sure the short plate is under the notch on the gasket, as in the "correct" picture. Closely inspect the gasket notch area, looking for any overlap of the glass onto the gasket notch. To insure the proper alignment of the glass plate to the notched gasket, slide the gel sandwich up onto the moistened gasket and snap the sandwich into place on the core.

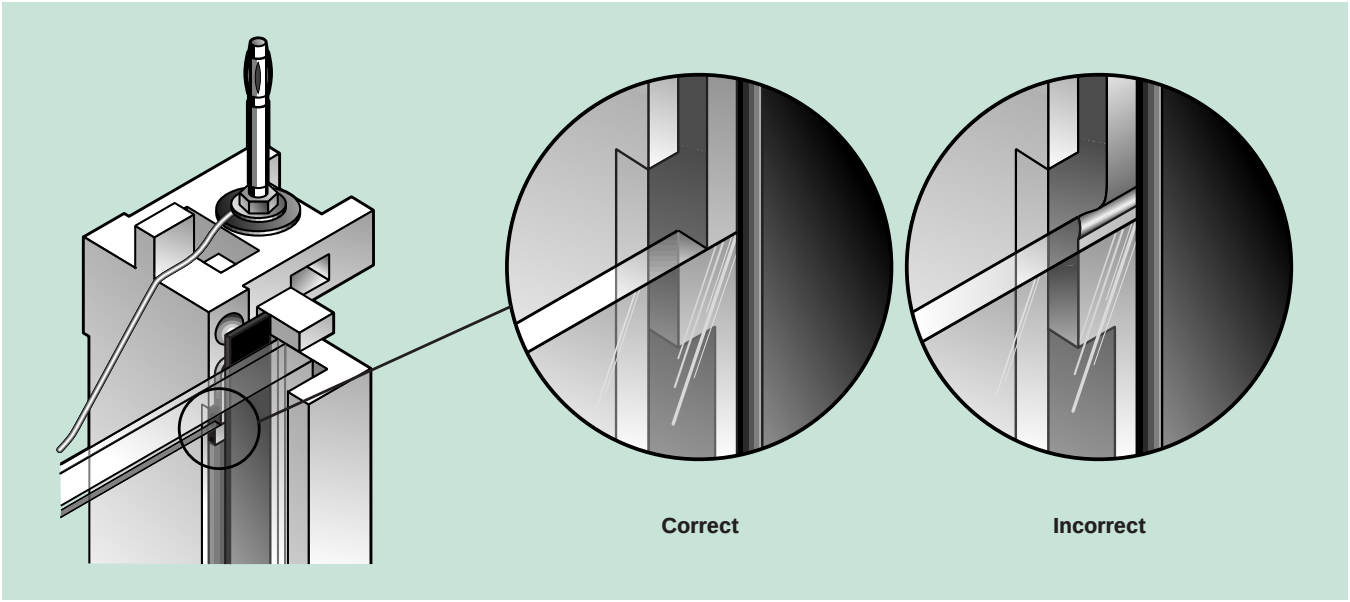
A second assembly error is holding the clamps during alignment of glass plates or Ready Gels so that they are not perpendicular to the acrylic block while tightening the thumbscrews.

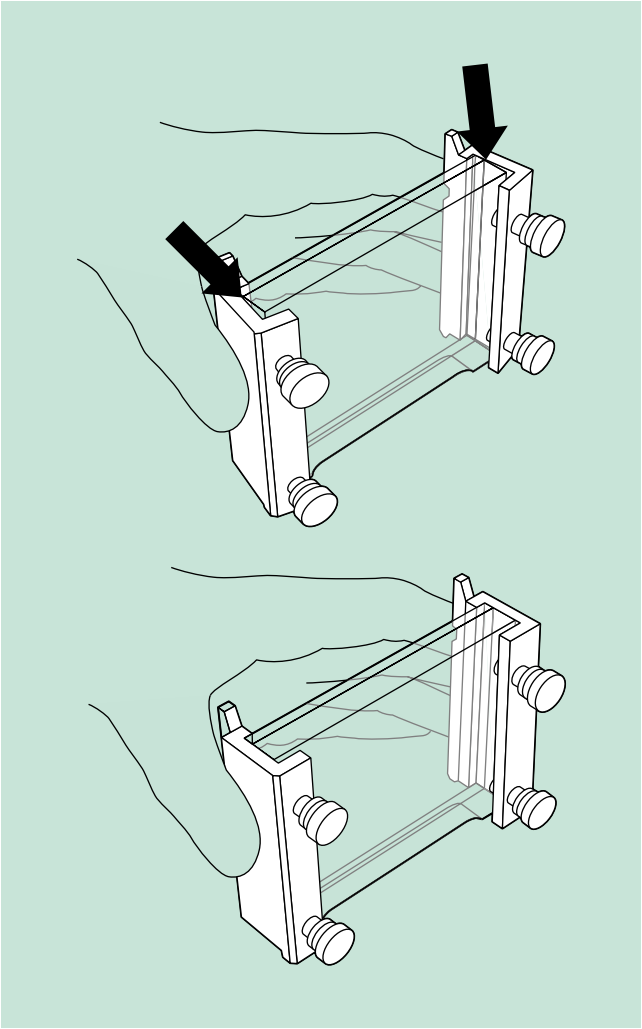
The sides of the clamp must be held flush against the acrylic block during assembly of the sandwich to ensure no leaking from the upper chamber. Make sure you hold the sides of the clamp assembly flush against the acrylic block during assembly and alignment of the glass plates and spacers in the clamp. This is a very important caution.

A third assembly error is installing the gray electrode assembly gasket so that the notch is inside facing the core.

Check the installation of the gasket. For two gels, the notches must be facing out on both sides of the core. Always check that the notched side of the gray gasket is facing outward. If you do not see a notch, the gasket is inside out. The gel goes on one side. A false gel (buffer dam), made by aligning a short glass plate and a long glass plate without spacers in the sandwich clamp, should be installed on the other side.

If the gasket is torn or worn, it will not function properly and may cause leaking, even if it is installed correctly.





Note: If a Mini-PROTEAN II leaks from the upper chamber, recheck the instrument for assembly errors. If the leaking continues, fill the lower buffer chamber with 1x running buffer, so that the level of the buffer in the tank is the same as to level of the buffer in the upper chamber. This eliminates the hydrostatic 'head' of pressure difference between the two chambers, and leaking will stop.

Helpful Hints

For handcast gels, precast Ready Gels, and when using a buffer dam, the notched side of the gray gasket must face outward. If you do not see a notch on the upper half of the U-shaped gasket, the gasket is inside out and should be turned around.

Routinely inspect the U-shaped gasket for excessive wear, nicks, dirt or grease. Any damage to the gasket or built-up dirt or grease can cause the Mini-PROTEAN II cell to leak. The U-shaped gasket will wear out with use and is intended to be replaced approximately every year, depending on your frequency of use. To insure optimal performance we recommend that you have replacement gaskets on hand. To order, request catalog number 165-2905 for two electrode assembly replacement gaskets.

Buffer Dam Assembly

If only one gel is to be run, a buffer dam may be made by sliding a short (inner) glass plate and a long (outer) glass plate without spacers into the clamp assembly. This plate sandwich operates as a buffer dam. Align the plates using the alignment slot of the casting stand; finger tighten the clamp screws and snap on to the inner cooling core.

Always check to make sure that the notch on the gray electrode gasket is facing outward (toward you).

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