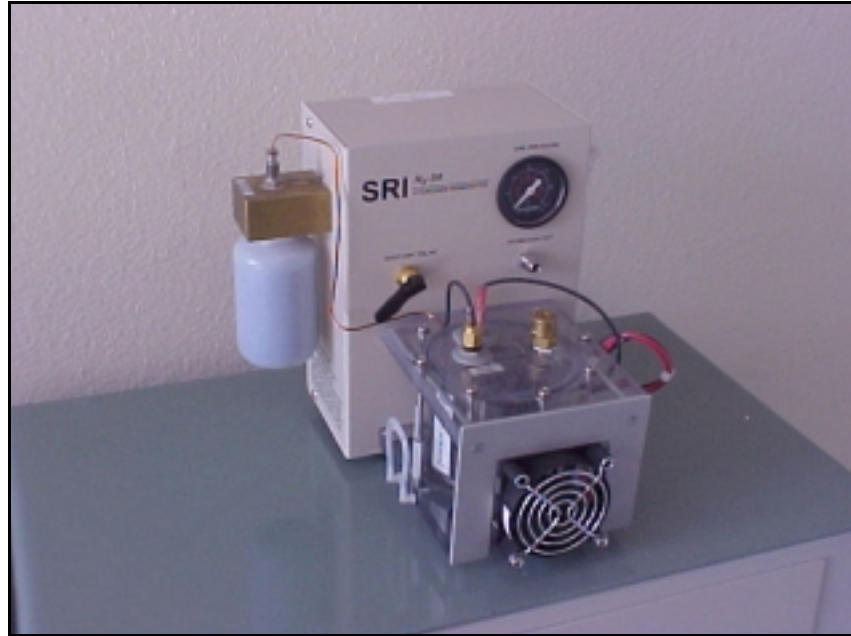
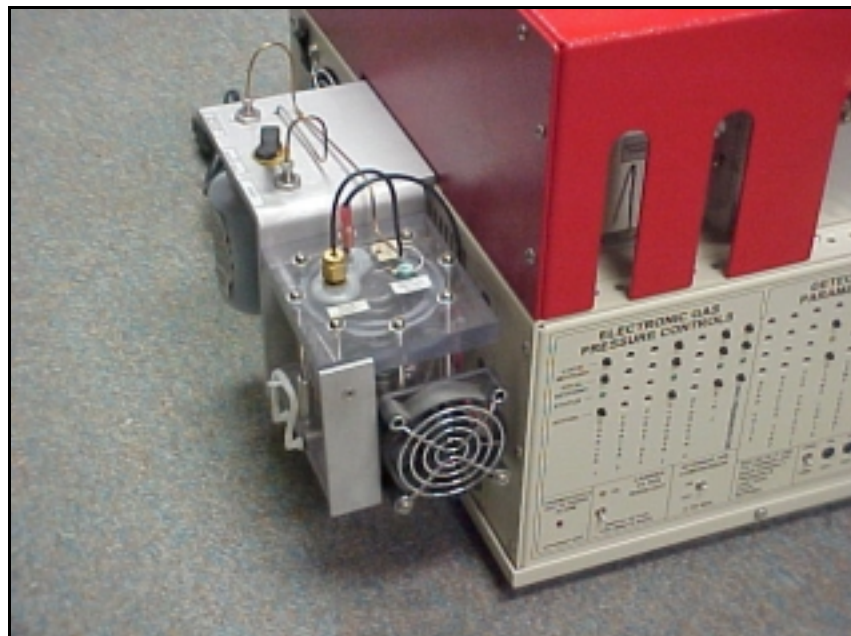


## Changing the PEM membrane on the SRI hydrogen generator

The SRI Hydrogen generator is most commonly found as the stand-alone H2-50 version shown to the right.

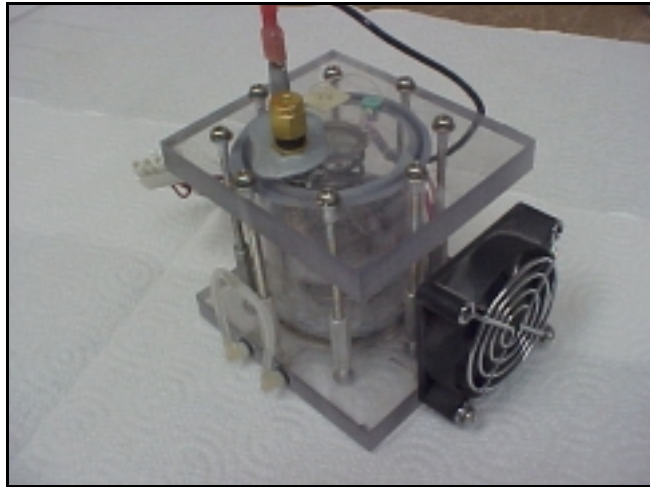


A smaller 25ml/min version may also be found built-in to some SRI 8610C GCs.

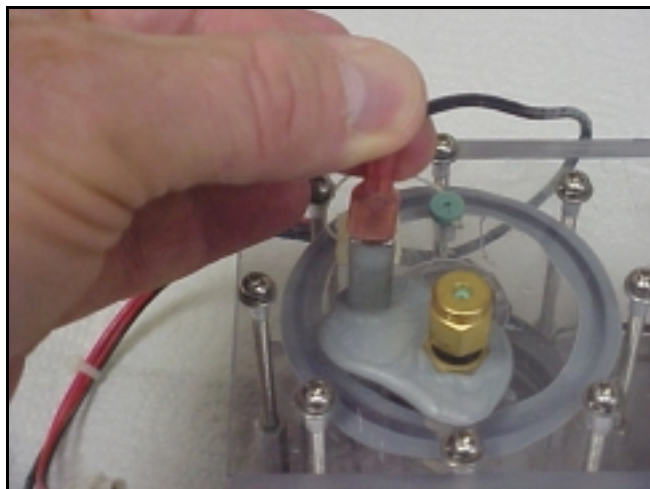


## Changing the PEM membrane on the SRI hydrogen generator

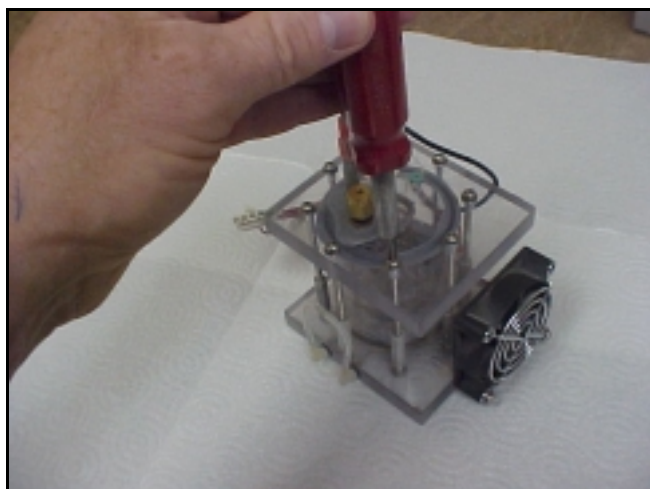
1) The Proton Exchange Membrane ( PEM ) used in the SRI hydrogen generator may need replacing periodically. If the generator does not make hydrogen at all, or only very little, if the membrane looks very dark or dirty, or if the generator gets hot and steamy, it may be time to replace the PEM.



2) Remove the H<sub>2</sub> generator cell from the GC or stand-alone chassis, then gently wiggle off the black wire connector on the top of the cell.

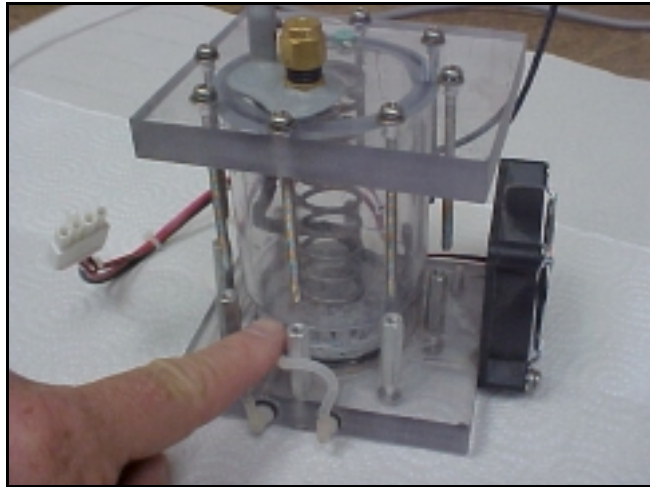


3) Loosen the eight screws which clamp the top of the cell to the bottom. Initially, just loosen each screw a little bit and loosen them evenly to avoid putting too much stress on any one screw. The water in the cell will leak out when you do this, so it may be a good idea to do this over a sink.

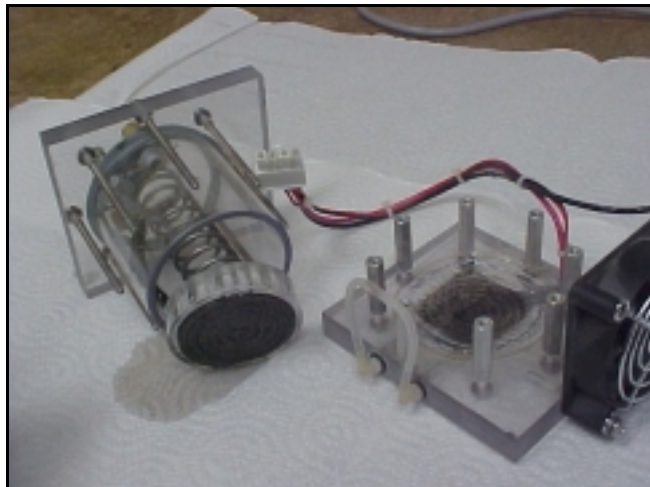


## Changing the PEM membrane on the SRI hydrogen generator

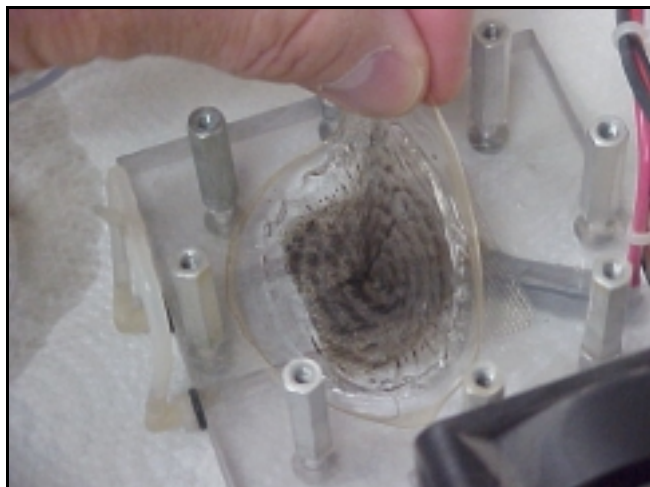
4) Be sure that the aluminum stand-offs on the bottom of the cell don't rotate as you remove the screws. Hold each stand-off with a small wrench if you have to.



5) With the eight screws removed, the top of the cell will pop up due to the spring inside which pushes the graphite rope electrode against the PEM. Carefully lay the top of the cell aside.



6) Peel the old PEM off the bottom. Check the platinum screen for bits of old PEM material. If the platinum screen seems rough or has sharp edges, use your fingers to smooth it down.



## Changing the PEM membrane on the SRI hydrogen generator

7) Examine the old PEM for clues as to why it may have failed.



8) The new PEM is available from SRI under part# 8690-0151 for the 50ml/min H<sub>2</sub> gen and 8690-0152 for the 25ml/min model. The new PEM is crystal clear and comes in a plastic bag. It is easy to think the bag is empty because the PEM is clear.

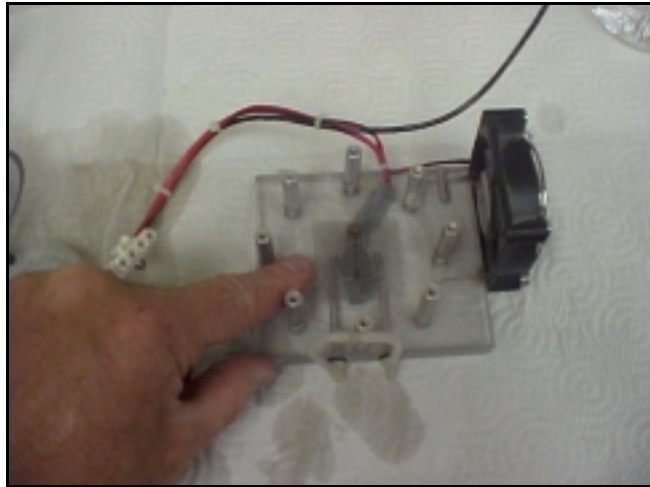


9) Soak the new PEM in clean water prior to installation. The PEM is extremely hydroscopic ( absorbs water ) and will expand slightly as it is soaked. Soak the PEM for a minute or two.

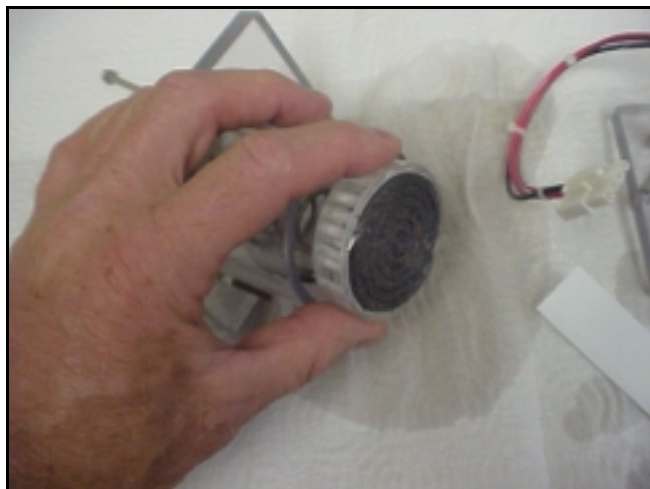


## Changing the PEM membrane on the SRI hydrogen generator

10) Place the new PEM in the center of the cell. It should fit snugly inside the circle of eight aluminum-stand-offs.



11) The graphite electrode is constructed of a coil of graphite rope. In most cases it will stay together, especially if you handle it gently.



12) Sometimes the coil will come undone, so you may have to rewind it and coax it into position within the recess of the plastic disk. Do this in such a way that the coil of graphite lays flat.

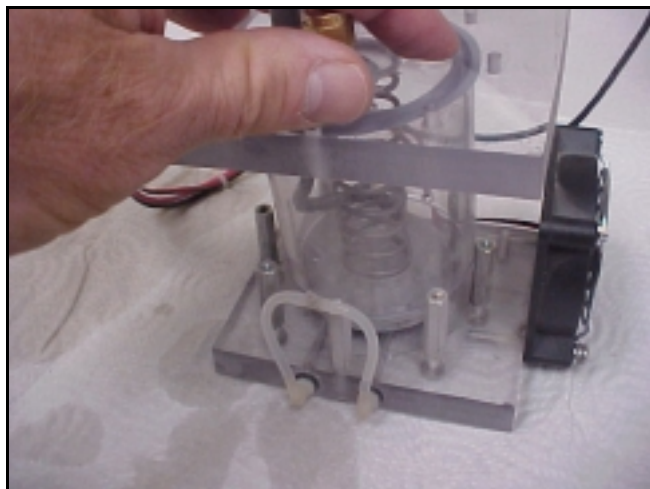


## Changing the PEM membrane on the SRI hydrogen generator

13) To keep the graphite coil from coming apart as you re-assemble the cell, place a thin ruler or strip of cardboard over the coil while positioning the cell top on the bottom. Once the top is in place, slide the strip out.



14) Replace 4 of the 8 screws, but just engage the screw threads one turn. Examine the cell from the sides and bottom to ensure the graphite coil is centered. If not, remove the screws and nudge the coil into the center of the cell.



15) Replace and tighten the eight screws. Tighten gradually and in an alternate pattern to avoid over-stressing the plastic. Finally, re-connect the black wire to the connector on the top, fill with clean water and re-attach to the GC or stand-alone chassis.

