

How to Replace the Lid of a Top-Loading Glass Kiln

by Arnold Howard

When cracks run through your kiln lid, element grooves are broken, and debris falls onto the glass from above, you might not need a new kiln. Just replace the lid, the most critical part of a top-loading glass kiln. These instructions will guide you through the procedure.

I used a Paragon Ovation-10 to illustrate this article. The basic principles in replacing an Ovation lid also apply to other brands and sizes of top-loading kilns. Though your kiln may be different, the instructions will still save you a tremendous amount of time. Feel free to e-mail questions and photos to me.

1) First, unpack the new lid. You will find sheets of packing around the lid. Lay the packing on a plywood table and place the lid on top of the packing. Orient the lid so that when you carry it to the kiln, the back of the new lid will be toward the back of the kiln. Clear a pathway between the new lid and the kiln, removing tripping hazards. Unless your kiln is small, the lid is heavy. (Photos 1 & 2)

2) Remove the old lid from your kiln. Disconnect the kiln from the power and move the kiln out from the wall. You will need space to work behind the kiln when installing the lid.

3) Remove the element cover from the lid. Use a 1/4" nut driver or a drill equipped with a 1/4" octagon socket on an extension. (You may need a different type of driver for your kiln, such as a Phillips head.)

4) Label the wires that are attached to the element connectors. Take a picture of the wires with your cell phone. This will simplify installing the wires on the new lid. (Photo 3)

5) Remove the wires from the element connectors.

6) Raise the lid to the open position. (Important: Hold the top of the lid so that it can't fall. Have an assistant do this for you if you are not tall enough.) Disconnect the lid springs. The Paragon Ovation kiln has sheet metal tabs that hold the bottom of the springs. Remove the nuts and bolts that secure the tabs to the kiln. Leave the tabs on the bottoms of the springs. Once you disconnect the springs, the lid will feel much heavier. (Photo 4)

7) Lower the lid gently to the kiln.

8) Remove the hinge and/or spring assembly attached to the back of the lid. The assembly will probably stick to the kiln after removing the screws, because strands of sheet metal are pressed into the screw holes when the kiln is made at the factory. Loosen the brackets by tapping with a slotted screw driver.



Photo 1
I picked up the new lid from the Paragon factory and cushioned it with memory foam. Treat the lid as gently as you would a computer monitor.



Photo 2
Lay the new lid on a table. Cushion it with sheets of foam packing.



Photo 3
Label the wires attached to the element connectors before you remove the wires.



Photo 4
This photo shows two methods for disconnecting the springs on the Ovation kiln: 1) Remove the bolts holding the spring tab, shown on the left spring or 2) Remove the spring from the tab, shown on the other three springs. Method #1 is easier.

9) Remove the brackets that connect the front of the lid to the spring assembly.

10) Lift off the lid and lay it on a plywood table.

11) Carefully clean the top of the kiln. Wipe a hand over the top of the kiln walls where you will lay the new lid. Remove brick particles, small screws, or anything that could damage the new lid.

12) Gently place the new lid on the kiln, centered from side to side and front to back. If you are installing a Paragon Ovation lid, carefully lift the lid to make sure that the recess around the lid is centered between the walls of the kiln. Make sure the lid lies flat against the kiln all around. If part of the recess is not centered, the lid will not lie completely flat. The raised part of the inner lid surface will touch the kiln wall and cause a gap between the kiln and lid.

13) Install screws in the back lid hinge and/or spring assembly. (*Important:* The hinge of most kiln brands has slotted holes that allow the back of the lid to move up and down. Check the hinge to be sure there is no binding.) Install the hinge on the lid so the lid will be able to rise as the kiln heats and expands. (Photo 5)

14) Attach the screws in the spring assembly on the front of the lid.

15) Raise the lid and hold it securely in the raised position. If necessary, have an assistant hold the lid for you. Install the bolts that hold the spring tabs at the back of the kiln, then gently lower the lid.

16) Make sure the lid lies flat against the kiln on all sides. Lift the lid an inch and look inside the kiln to be sure the recessed area is centered in the kiln. If necessary, sand the edges of the raised inner area of the lid so that it doesn't touch the kiln walls. Then coat the sanded areas with kiln coating. (Photos 6 & 7)

17) Attach the relay-to-element lead wires to the element connectors on the new lid. Make sure the wires are tight.

18) Tighten the element connectors on the new lid. They must be tightened to the kiln manufacturer's specifications. Otherwise they could burn off later.

19) Install the element cover on the new lid that you removed in Step 3.

20) Push the kiln back into place near the wall and check to make sure that the kiln is level. Connect the kiln to the power.

21) Turn on the kiln and test the elements. When I replace a lid, I test the kiln with an ammeter. After the job is finished, I use an infrared thermometer to make sure all the elements are firing. The first time you fire the kiln with the new lid, fire it empty or with only glass test pieces. Loose kiln coating particles may fall from the lid during the first firing. (Photo 8)

Save the packing sheets that came with the new lid. They will be valuable if you ever transport your kiln to a different location. Place the sheets of packing between the lid and kiln body when moving the kiln.

GPO

Photo 5
If you are installing screws in brushed stainless steel, you will need to drill pilot holes as shown here.



Photo 6
The recessed area on the lid didn't quite fit the Ovation kiln, so I sanded one small section. A little sanding is normal.

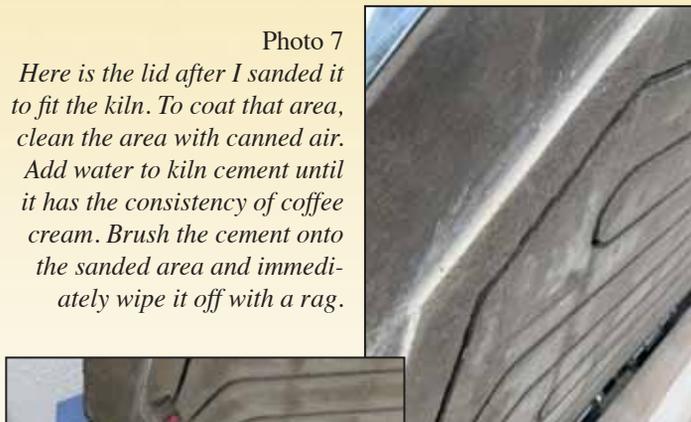


Photo 7
Here is the lid after I sanded it to fit the kiln. To coat that area, clean the area with canned air. Add water to kiln cement until it has the consistency of coffee cream. Brush the cement onto the sanded area and immediately wipe it off with a rag.



Photo 8
I used a Ryobi infrared thermometer to make sure all of the elements were firing.

Since 1977 when Arnold Howard began working at Paragon Industries, he has seen kilns evolve from switches to touch screen displays. He helped test the early glass kilns and wrote Paragon instruction manuals, newsletters, and advertisements.

Arnold has taught kiln classes at trade shows, Bullseye Glass in Portland, and in Australia and England. In September 2019, he started Howard Kilns, a repair and preventive maintenance business, to serve the Dallas-San Antonio, Texas, area. Arnold works on all brands of kilns. Feel free to contact him at arnoldhoward@gmail.com.



© Copyright 2020 by Glass Patterns Quarterly®.
All rights reserved.