

# Technical Service Bulletin 103

## Vessel Shimming Procedures

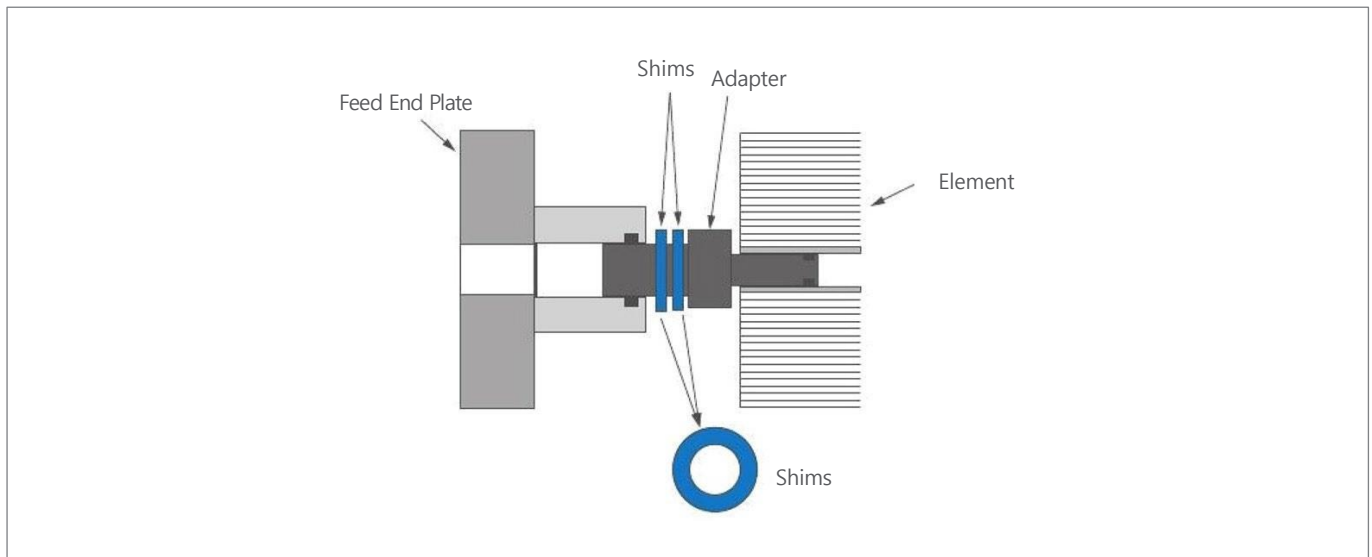
### Vessel Shimming

Because the face-to-face end plate dimensions may vary among pressure vessel manufacturers, NanoH2O strongly recommends that the element stack within the pressure vessel be shimmed to remove any excess slack. This slack can result in interconnector uncoupling and excessive stack movement during shutdown and start-up.

To ensure the removal of excess slack from the element stack within each pressure vessel, NanoH2O recommends the following method:

1. Install the REJECT-side end plate and thrust ring (if part of reject-side end-plate assembly), and push the element stack all the way toward the REJECT-end until the element stack is well seated against the REJECT-end end plate.
2. Prepare PVC spacers of varying thickness ranging from 3.17 to 9.52 mm (1/8 to 3/8 inches). These may be cut from a length of PVC pipe with a diameter that will fit over the feed-side adapter.
3. Install as many shims as necessary over the FEED-side inboard adapter until the end plate fits snugly against the shims while allowing the end plate to be installed. A gap of approximately 6.34 mm (1/4 inch) between the end plate and the shims is permissible and should not result in interconnector decoupling or other performance issues (Figure 103.1).
4. During the first month of system operation after startup, it is recommended to check the status of the membrane shimming and add shims if there is any space for shimming.

Figure 103.1



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