

Membrane Element Replacement

Replacement of Obsolete 7169-G501 Membrane with 8501-G501 Membrane in 7162 Mark I Dehydrator

I. Secure and tag out the dehydrator.

WARNING

The unit contains air pressure up to 125 psig. Failure to remove this pressure before beginning work could lead to death or injury to the worker.

- a. Close the inlet air valve and the outlet air valve, external to the dehydrator. This isolates the unit from its air source.
- b. Secure and tag out the air lines, external to the unit.
- c. Open both selector/isolation valves (1) and both outlet valves (2).
- d. Open both manual drain valves (3) until both pressure gauges (4) read zero. This bleeds air pressure from the piping sections and components between the inlet and outlet valves, to prevent injury to operators or maintenance workers.

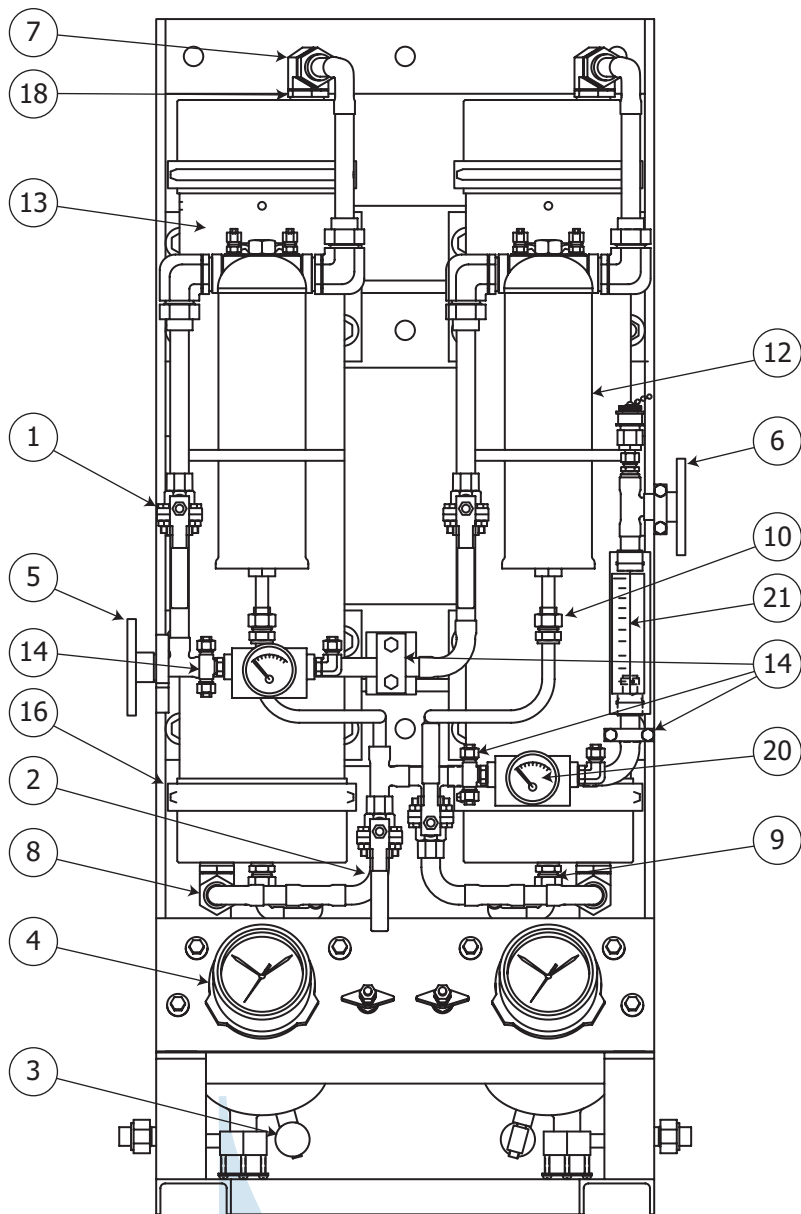
II. Disconnect the piping.

- a. Disconnect the unit inlet (5) and outlet (6) flanges.
- b. Disconnect the two membrane inlet unions (7).
- c. Disconnect the two membrane outlet unions (8).
- d. Disconnect the two membrane purge unions (9).
- e. Disconnect the filter drain union (10) of the membrane to be replaced.
- f. Remove the screws (11) securing the filters (12) to the fronts of the membrane housings (13).
- g. Remove the four pipe clamps (14) securing the filter piping to the frame and remove the filter piping, all in one piece.

III. Replace the membrane assembly.

For the membrane being replaced:

- a. Remove the mounting screws (15) securing the membrane assembly to the frame and remove the membrane assembly.



Howell Laboratories, Inc.

188 Harrison Rd.
Bridgton, Maine 04009
(207) 647-3327

(888) 744-8359

FAX (207) 647-8273

Align the outlet piping if necessary:

CAUTION

DO NOT remove the outlet head or the membrane!

- b. If necessary, loosen the outlet head clamp (16) of the new membrane assembly enough (about one inch) to allow the head to turn. Carefully rotate the brass outlet head to make the membrane assembly "right-handed" or "left-handed" as needed.
- c. Loosen the jam nut (17) to allow the membrane outlet elbow to align properly with the mating piping.

CAUTION

To ensure a good seal while preventing damage to the membrane elements, use only a light coat of silicone grease MIL-S-8660C on all piping O-rings.

Install the membrane assembly:

- d. Install the new membrane assembly. Tighten the mounting screws (15).
- e. Reconnect the membrane outlet union (8), using a new O-ring M83248/2-019.
- f. Reconnect the membrane purge union (9), using a new O-ring M83248/2-015.
- g. Loosen the jam nut (18) a little to allow the membrane inlet elbow to align properly with the mating piping. Reconnect the membrane inlet union (7), using a new O-ring M83248/2-019.

Reconnect the piping:

- h. Reinstall the filter piping. Secure it with the four pipe clamps (14) and the mounting screws (11), but do not tighten the pipe clamps or screws yet.
- i. Reconnect the two filter drain unions (10), using new O-rings M83248/2-008.
- j. Tighten:
 - the filter piping mounting screws (11)
 - the four pipe clamps (14)
 - the jam nuts (17) and (18) at the inlet and outlet elbows of the new membrane assembly
 - the membrane outlet head clamp (16).
- k. Reconnect the inlet (5) and outlet (6) flanges, using new gaskets 22501/6679-02.

III. Restart the unit.

- a. Close the manual drain valves (3).
- b. Make sure the purge outlets (19) are not blocked. If the purge outlets are blocked or restricted in any way, the dehydrator will not dry air properly.
- c. Open the air inlet valve, external to the dehydrator.
- d. Open the air outlet valve (2) for the air path you wish to use.
- e. Slowly open the selector/isolation valve (1) which corresponds to the open inlet valve.
- f. Check the pressure gauge (4) for the air path you just pressurized. It should read between 80 and 120 psig.
- g. Check the filter pressure drop indicator (20) for the air path just placed in service. Pressure drop should not exceed 5 psi.
- h. Check the outlet flowmeter (21) reading. It should read between 0 and 48 scfm.
- i. If any aspect of startup or operation is not as described, troubleshoot in accordance with the technical manual.

