

# **MGNewell**

*We Make It Work Better.*

**CARBONATION  
NITROGENATION  
DECARBONATION**

## **LIQUID DEGASSING AND GASIFICATION SOLUTIONS**



**Providing sanitary processing equipment and customized services**

**Since 1885**



### **CO<sub>2</sub> Control of Beer**

*Adjust the carbonation level in beer. Sometimes natural fermentation does not create enough CO<sub>2</sub> for the end product which impacts taste and the head of a beer. On the same note, removal of excess CO<sub>2</sub> in over-carbonated beer is also an easy process.*

### **Nitrogenation of Beer**

*There is a niche market for stout beer where nitrogen is added to beer to improve the foam head on top of the beer.*

### **Liqui-Cel® Membranes**

Liqui-Cel membrane contactors are leading gas transfer devices, commonly used in carbon dioxide removal, deoxygenation, nitrogenation and carbonation. Capable of achieving <1 ppm CO<sub>2</sub> and <1 ppb O<sub>2</sub>, they provide precision in gas control.

Because of their cleanliness and predictability, Liqui-Cel membranes are the standard degassing technology in ultrapure water applications.

Due to the small footprint, lower installation costs and modular nature of the system, they provide flexibility and can be readily expanded to meet growing capacity.

Membranes come in multiple sizes so that you can maximize efficiency and performance while taking into account the desired flow rate and footprint requirements.

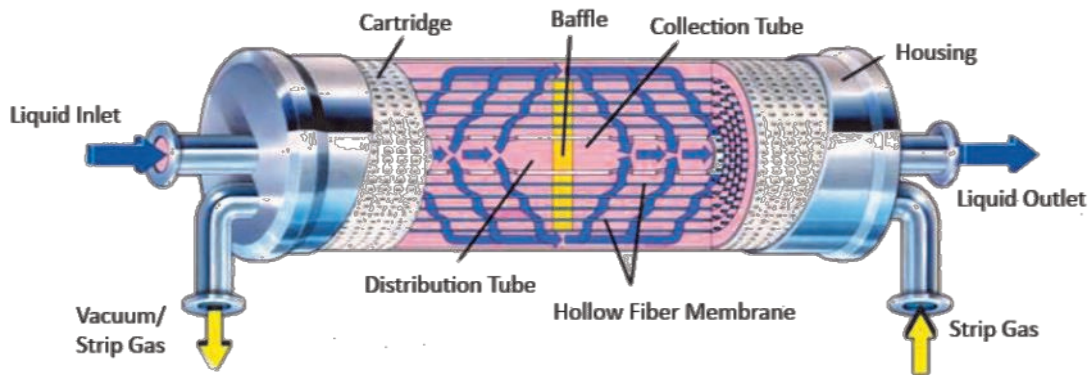
Need more info? Contact your local sales representative or visit our website at [www.mgnewell.com](http://www.mgnewell.com).



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*We Make It Work Better.*

**Liqui-Cel®**  
MEMBRANE CONTACTORS

# CREATE A SMOOTH BEER—A “KEG” BEER



## HOW IT WORKS

Liqui-Cel membranes use a microporous hollow fiber membrane to add and/or remove gases from liquids. The hollow fiber is knitted into an array and wrapped around a center tube inside of the membrane housing.

During typical operation, liquid flows over the outside of the hollow fibers while a vacuum, strip gas or both in combination, is applied to the inside of the fibers. Because the membrane is hydrophobic, it acts as an inert support that allows direct contact between a gas and liquid phase without dispersion. Applying a higher pressure to the liquid stream relative to the gas stream creates the driving force for dissolved gas in the liquid to pass through the membrane pores. The gas is carried away by the vacuum or strip gas.

## BENEFITS

- Modular design offers flexibility for future capacity and easy relocation within your plant.
- Maximized surface area/volume results in high performance and space efficiency.
- Fast equilibrium means quick start-ups.
- Different membrane size and material options provide tremendous flexibility.
- Simple operation means reduced instrumentation and maintenance requirements.
- Our systems are prepared by engineers who specialize in sanitary processing. Welding, piping and other fabrication processes are performed in-house at M.G. Newell by qualified technicians.
- Our systems meet and often exceed compliance to FDA, NSF or other industry standards. M.G. Newell follows best industry practices for wiring, installation, automation and fabrication.
- Controls can be skid-mounted or remote mounted. Each system comes with full utility support and documentation. All units are pre-wired, fully assembled, functionally tested and ready for installation.



## FREQUENTLY ASKED QUESTIONS

What is the cleaning process for the membrane?

- Cleaning is performed through a standard CIP process. We recommend 3% caustic followed by an acid rinse. Hot water (>180°F) for 15-20 minutes is also ok.

After cleaning, how do you store the membrane?

- If going more than 2-3 days between uses, we recommend that you drain and purge the system with CO<sub>2</sub> or N<sub>2</sub> for storage.

Where should the system be located in the brewing process?

- It is best used when performing tank-to-tank transfer, i.e. from your brite tank to a filling/holding tank. It can be put in front of your filler/kegger, however it is more difficult to control due to the stopping and starting on the filling line.

What are the flow rates for nitrogenation and carbonation?

- For most breweries, our standard filter membrane will run 5-15 gpm for either process. If higher flow rates are required, then we would change to a different membrane and possibly a different pump and valve combination.

Any issues running unfiltered beer?

- The preference is to run filtered beer, but you can run unfiltered as well. Unfiltered beers can cake up and clog the initial inlet. Unfiltered beer needs more frequent cleaning and backflushes.

How often should I change the membrane?

- With good CIP processes, a membrane will last 3-5 years when running a filtered beer. Unfiltered beer requires more cleanings which reduces the life of the membrane.

Once the beer is carbonated or nitrogenated, how do I store it?

- In the tank, put as much N<sub>2</sub> as the tank will hold. This will keep the dissolved N<sub>2</sub> in the liquid and not allow it to come out into the headspace. Bottle or keg as soon as possible.

Need more information? Email us at [sales@mgnewell.com](mailto:sales@mgnewell.com) or contact one of our locations.



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