The Facts About 25/75 Gas

25/75 gas—also known as G-Mix or Beer Gas—is a pre-mixed blend containing 25% CO2 and 75% nitrogen in a single cylinder. This blend was created to dispense nitrogen-infused beers like Guinness Stout but has been widely applied to other beers. **Applying 25/75 gas to regularly carbonated beers makes them go flat.**

Nitro Beers are Different

So-called "nitro beers" are injected with Nitrogen during the brewing process to create their impressive foam and settling appearance. They contain very low levels of carbonation - less than ½ that of normally carbonated beers. Nitro beers become over-carbonated and foamy if dispensed with straight CO2 and thus require a dispense gas with a lower percentage of CO2. (Nitro beers contain 1 to 1.4 volumes of CO2, depending on the brand. Normally carbonated beers contain 2.3 to 2.8 volumes of CO2 and some beer styles contain up to 4.0 volumes of CO2).

Regular Beers Go Flat on 25/75 Gas

In an attempt to simplify draught installations or to compensate for foaming issues caused by poorly balanced systems, many bars apply 25/75 gas to all their beers. This is a huge mistake and results in both significant waste and poor quality. Just as nitro beers become over-carbonated by pure CO_2, regular beers go flat when pressurized with 25/75 gas. That is because this blend simply cannot provide adequate CO_2 to maintain proper carbonation in a normally carbonated beer. For instance, 25/75 gas would have to be applied at an astounding pressure of 100 psi in order to maintain carbonation in a normal beer, a pressure well above the pressure rating of most system components.

Normally carbonated beers on long draw systems need a richer blend of CO_2, ranging from 60% to 90%, or possibly even 100% CO_2, depending on the parameters of the system.

Your Customers Notice the Difference

If you use 25/75 gas, all your beers will taste fine when first tapped. This is because a keg empties from the bottom and the beer at the top of the keg loses carbonation first. As the keg is drained, however, the beer being served becomes increasingly flat. While customers often can't put their finger on what's wrong, they inevitably know that something is not right and are unlikely to repurchase. To keep your customers happy and sales high, normally carbonated beers should be dispensed using a richer, more appropriate CO_2 blend.

The brewing industry opposes the use of 25/75 gas for dispensing regularly carbonated beers. See the backside of this sheet for more insight into this topic, or, for more complete information on what gas blends are appropriate for your beers, visit www.draughtquality.org.

Photo by Michael Lichter Photography

What goes into figuring out the right gas blend?

First of all, it's important to understand what leads to carbonation changes in a keg of beer. Once the first beer is poured, there is headspace inside the keg which is in contact with the beer. The temperature of the beer and the headspace pressure will then determine what happens to the carbonation level of the beer. There are three possibilities:

1. The carbonation level stays the same. For the given carbonation level of the beer, the temperature pressure combination is just right.

2. The beer loses carbonation. Either the temperature of the beer is too high for the given pressure or the pressure is too low for the given temperature. Either way, gas is escaping from the beer into the headspace, creating flat beer.

3. The beer gains carbonation. Either the temperature of the beer is too low for the given pressure or the pressure is too high for the given temperature. In either case, excess gas from the headspace is absorbing into the beer, causing it to overcarbonate.

This dynamic is quite simple when using 100% CO_2. It is essentially a balancing act of finding the correct balance of pressure and temperature for that beer's carbonation level. Stick with it and your beer will stay properly carbonated.

When we use a blend of CO_2 and Nitrogen, we introduce another factor: CO_2 percentage. Blend gases allow the use of higher operating pressures in longer system lengths without the risk of overcarbonating the beer. As we decrease the CO_2 percentage, pressures can be safely increased. The danger of beer losing carbonation still remains, though. If we lower the CO_2 percentage without a corresponding pressure increase, the beer will start to lose carbonation. This is, in fact, what happens with 25/75 gas. With 25% CO_2, the CO_2 percentage has dropped so far that the appropriate pressure increase would exceed the pressure limits of the draught system itself. It simply is impossible to use 25/75 gas without losing carbonation.

Most draught systems operate in a pressure/temperature range that requires a CO_2 percentage in the range of 60% to 90%. This range in percentages allows for the use of the appropriate corresponding pressure, thereby maintaining proper carbonation. To learn more complete information about how to figure gas blends, or to determine what might be correct for your draught system, visit www.draughtquality.org.

For more information on draught system cleaning or other components of a draught beer system, visit the Brewers Association's Draught Beer Quality Manual at: www.draughtquality.org