

## appendix c

# figuring gauge pressure or blend percentage of CO<sub>2</sub> / N blend

\* Mathematical analysis

$$a = \left( \frac{b + 14.7}{c} \right) - 14.7$$

a = psi of the gas

$$a + 14.7 = \left( \frac{b + 14.7}{c} \right)$$

b = ideal gauge pressure of straight

c = % of CO<sub>2</sub> in the gas

$$(a + 14.7) * c = b + 14.7$$

$$((a + 14.7) * c) - 14.7 = b$$

$$(a + 14.7) * c = b + 14.7$$

$$c = \frac{b + 14.7}{a + 14.7}$$

- To figure the correct keg pressure for a custom CO<sub>2</sub> / N blend, use the following procedure:
  - You must first know the average carbonation level, in volumes, of the beers you are balancing.
  - You must know the CO<sub>2</sub> percentage in the blend to be used.
    1. Using the average carbonation level, figure the ideal gauge pressure of straight CO<sub>2</sub> from the chart in the CO<sub>2</sub> – Figuring the correct pressure section.
    2. Use the following equation, where
      - a. a = psi of the gas blend
      - b. b = ideal gauge pressure with straight CO<sub>2</sub>
      - c. c = % of CO<sub>2</sub> in the gas blend (as a whole number; i.e., 60% CO<sub>2</sub> = 0.6)

$$a = \left( \frac{b + 14.7}{c} \right) - 14.7$$

Examples:

$$a = \left( \frac{b + 14.7}{c} \right) - 14.7$$

$$a = \left( \frac{12 + 14.7}{0.7} \right) - 14.7$$

$$a = \left( \frac{26.7}{0.7} \right) - 14.7$$

$$a = ( 38.1 ) - 14.7$$

$$a = ( 23.4 )$$

a = psi of the gas

b = **12** straight

c = **70%** in the gas

- To figure the correct blend for a custom CO<sub>2</sub> / N blend, use the following procedure:
  - o You must first know the average carbonation level, in volumes, of the beers you are balancing.
  - o You must know the operating pressure at which the kegs will be poured.
    1. Using the average carbonation level, figure the ideal gauge pressure of straight CO<sub>2</sub> from the chart in the CO<sub>2</sub> – Figuring the correct pressure section.
    2. Use the following equation, where
      - a = psi of the gas blend
      - b = ideal gauge pressure with straight CO<sub>2</sub>
      - c = % of CO<sub>2</sub> in the gas blend (as a whole number; i.e., 60% CO<sub>2</sub> = 0.6)

$$c = \frac{b + 14.7}{a + 14.7}$$

Examples:

$$c = \frac{b + 14.7}{a + 14.7}$$

$$c = \frac{12 + 14.7}{22 + 14.7}$$

$$c = \frac{26.7}{36.7}$$

$$c = 0.728 = 72.8\%$$

a = psi of the gas

b = **12** straight

c = **70%** in the gas