



section I

draught equipment and system configurations

among draught systems, we find three general types based on equipment and design: temporary systems, direct-draw systems and long-draw systems. In the course of this manual, we'll look closely at the layout, operation and maintenance for each system. In Section I of this manual, we present four chapters that focus on system components from faucets to tubing connectors and see how they are assembled to create different systems. Along the way, we'll review important features of each component that can help prevent operating problems or beer quality issues in your system.

Before we jump into the components themselves, let's review some key concepts by looking briefly at the three sub-systems for draught: gas, beer and cooling.

Gas

Draught systems use CO₂ alone or mixed with nitrogen in varying proportions depending on the requirements of the system and the beers being

served. When properly selected and set, dispense gas maintains the correct carbonation in the beer and helps to preserve its flavor. In most draught systems, the dispense gas also propels beer from the keg to the faucet. Because the dispense gas comes into direct contact with the beer, it must meet strict criteria for purity. And because of the damage it does, compressed air should never come in contact with beer.

Beer

Most draught systems use the gases mentioned above to drive beer from the keg, through tubing and to the faucet where it will flow into the customer's glass. During the journey from keg to glass, we want to protect the beer from anything that would compromise its flavor or alter the carbonation created by the brewery. The beer should flow through proper beer lines and avoid any contact with brass parts that would impart a metallic flavor. We also want the beer to flow at a specific rate and arrive with the ideal carbonation level.

The key to getting this all right is balance between the applied gas pressure and the resistance provided by the tubing and fixtures the beer passes through during its journey to the bar.

Cooling

The cooling system should hold beer at a constant temperature from keg to glass. Any change between the temperature of the cooler and the temperature of the beer leaving the faucet leads to dispense problems such as foaming. In a simple direct-draw system a refrigerated cabinet maintains the temperature of the keg and provides cooling to the beer as it travels the short distance to the faucet. Many long-draw systems use a walk-in refrigerator to cool the kegs, plus chilled glycol that circulates in tubes next to the beer lines all the way to the faucet, to ensure that the beer stays cold all the way to the glass.

For each draught dispense system, suitable equipment and designs must be chosen for each of these three components—gas, beer and cooling. In Section I of this manual we'll examine the equipment used in draught systems and the various system designs commonly employed.

Chapter 1 examines nine components common to nearly all draught systems, things like couplers, faucets and beer lines. Understanding these basic elements will help you operate every draught system you encounter. Of course, additional components play a role in sophisticated systems—we'll introduce and discuss those as we encounter them in Chapters 3 and 4. Once we've reviewed the common draught components, we'll be ready to see how they get used in various system designs.

The simplest draught systems serve a temporary need. We find these systems at picnics, beer festivals and other short-term events. In **Chapter 2**, we cover

Draught Beer Dispense Systems

temporary systems

- Picnic Tap
- Jockey Box

direct draw

- Keg Box
- Walk-in Cooler

long draw

- Air Cooled
- Glycol Cooled
- Beer Pump

the design, set up, use and maintenance of the two main systems: picnic taps and jockey boxes.

Moving to permanent draught installations, direct-draw systems offer the simplest approach. In **Chapter 3**, we'll talk about the anatomy of a keg box or "keg-erator" and discuss how this basic approach is implemented in a walk-in cooler design. Both here and in Chapter 4, we'll find some new components beyond the nine "standards" from Chapter 1. In each chapter, we'll learn about the new components before looking at the anatomy of the overall system.

Permanent installations where the kegs cannot be located near the serving bar require long-draw draught systems. **Chapter 4** delves into the anatomy and operation of air-cooled, glycol-cooled and beer-pump approaches to long-draw dispense. ■