A spiral-bound notebook with a light beige, textured cover. The metal spiral binding is on the left side. The text is centered on the cover.

Beer Hardware, Systems and Delivery

An Industry Standard



- Beer is the number one dispensed beverage in the foodservice industry.
- Commonly, draft beer is preferred by a wide margin for taste and product consistency.

Objectives of This Module

- To develop an understanding of the types of beer delivery systems available.
- To provide an overview of the hardware associated with each system.
- To help develop confidence in recommending a system based on a clients needs.
- To learn where to turn for assistance in system layout.

Systems Overview

- Several types of beer delivery systems are on the market, we will concentrate on:
 - Can and bottled beer
 - Draft beer from a keg box
 - Draft beer delivered by a long-draw system.



Packaged Beer Sales



- The easiest beer “system” is a cooler full of bottled or canned beer.
- Less expensive than draft systems, these bottle boxes hold product cold and ready for sale.

Packaged Beer Sales

- Almost any refrigerator will work, however units designed for package sales are made of heavy-duty components that stand up to the weight and abuse caused by large loads of cans and bottles.
- Some units will have solid or glass front doors, but most will be top loaded boxes. Large top loaded coolers can hold up to 1,000 cans or bottles.

Why Top Loaded Coolers?

- Top loaded coolers offer several advantages:
 - Higher capacity in the same square foot area vs. shelved systems since the product is stacked.
 - No doors to swing out into the busy traffic area behind a bar.
 - Less bending required by the bartender to retrieve the products



Back Bar Cabinets

- Solid-door back bar cabinets are a popular choice for lower volume establishments.
- Since shelves are used inside these units, there is more unused space resulting in less storage.
- Often, a back bar cabinet is used to store chilled back stock or specialty / low volume products – even condiments.
- Also specified when physical restrictions prevent using a top load cooler.



Display Coolers



- Display coolers are often used to highlight specialty or unique products.
- The glass doors are more expensive than solid doors.
- The capacity of a display cooler tends to be far less than a comparably sized top load cooler.

Keg Dispensers

- Keg coolers resemble back bar coolers, but they hold kegs rather than individually packaged product
- Sized to hold from one to five kegs.
- Towers with faucets plus all of the needed tapping equipment complete the package.



Kegged Beer

- Kegged beer requires tapping equipment for dispensing.
- CO2 is used to move the beer from the keg through the tap and lines up to the faucet.
- In general, kegged beer is fresher and more consistent than packaged beer.
- Cost per ounce is significantly less than packaged beer.



Bet You Didn't Know...



- Harry Ribble, the Founder of Rapids Wholesale, designed and patented the first direct draw keg dispenser.

Air Cooled Systems



- A keg cooler is a simple example of an air cooled delivery system.
- The beer is kept cold all the way to the faucet by circulating the cold air from the cooler up the faucet's tower.

Long Draw Systems

- Long Draw beer systems have several advantages for busy establishments
 - All of the kegs are kept in one large walk-in cooler
 - Kegs can be more easily hooked up in series to avoid running out at peak times
 - Less room is required in the service area for beer since the bulky kegs are elsewhere
 - Multiple service points can be supplied from one central keg cooling location



Two Types of Long Draw Systems

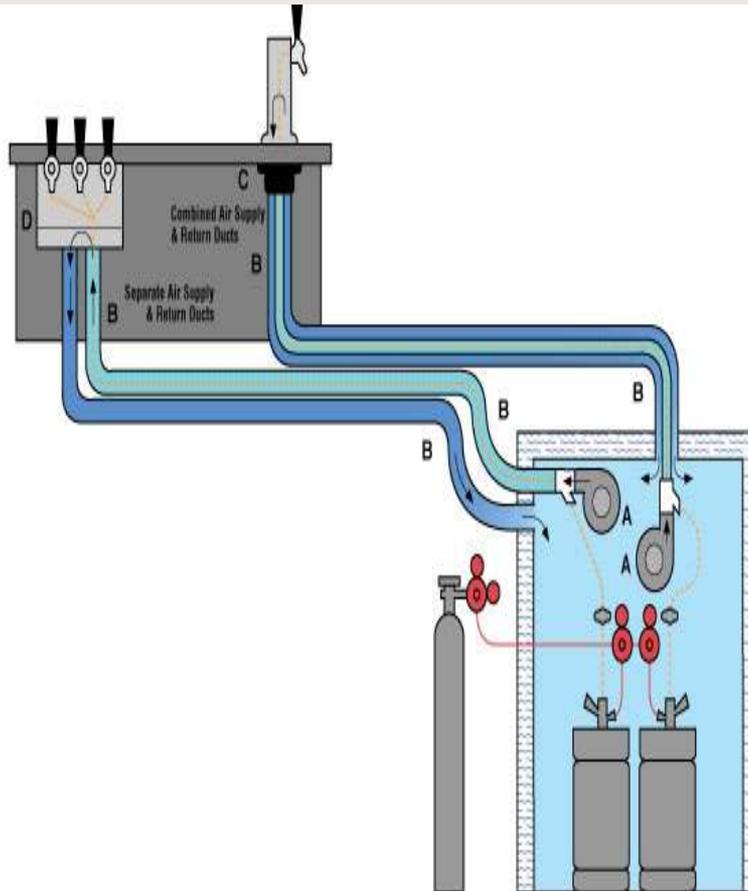
- Air Cooled

- Uses air shafts and blowers to move chilled air alongside the beer lines from the walk-in cooler to the faucet.
- Less expensive than a chilled glycol system
- Works best on relatively straight shaft runs and only for short, limited distances.

- Chilled Glycol

- Uses a cooling unit and a pump to move chilled glycol through lines that are bundled with the beer lines.
- Capable of longer run lengths and routes with many curves.
- More expensive than an air cooled system, but the benefit of ice cold beer at the faucet (no matter how far away) usually outweighs the cost factor.

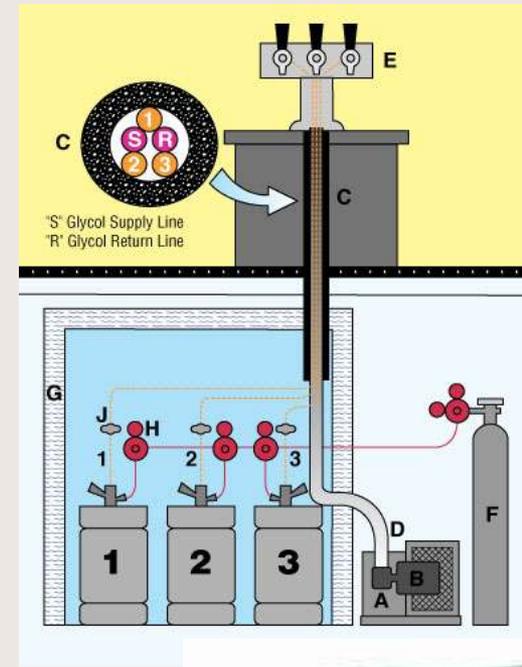
Air Cooled Systems



- Air cooled systems consist of an inner shaft that houses the beer lines nested inside an outer insulated shaft for the air return.
- Cold cooler air is blown through the inner shaft, cooling the beer lines all the way to the tower. The air then loops and returns to the cooler through the outer shaft.

Glycol Cooled Systems

- Instead of a double shaft assembly, glycol systems use one flexible shaft (called a trunk line) that bundles the beer lines closely in contact with the cold glycol lines. Shown as “C” at the right.
- Rather than using the cold air inside the cooler, glycol is chilled in its own refrigeration and pumping unit (A), then merged with the beer lines inside the cooler.



Cooling Blocks

- Before the glycol returns down the lines to be re-chilled, it passes through cooling blocks attached to each faucet. This makes sure that the beer is chilled all the way to the glass.



Hardware Common to Systems

- There are several pieces of hardware common to keg beer delivery systems.
 - A gas canister (usually CO₂) to pressurize and push the beer through the lines.
 - A tap to attach to the keg.
 - A regulator to set the correct gas pressure.
 - Various hoses, clamps and beverage lines to connect the hardware pieces.
 - Faucets and towers to fill the glasses.
 - Cleaning equipment to help clear the lines and assure sanitary beer delivery.

CO2 Cylinders

- CO2 cylinders hold the pressurized gas.
- Many sizes are available. The most common sizes are 2 ½ pounds to 20 pounds.
- Note: CO2 is not an explosive gas, but it is under high pressure. Therefore the tanks must be shipped empty.



Taps

- There are many types of taps, often called couplers.
- The tap attaches to the keg and has a system of valves and washers that allow the CO₂ gas to pressurize the keg which then forces the beer out through the coupler into the beer line.



Specialty Taps



- There are taps that have special purposes – too many to cover in this presentation – but one common type is the picnic pump.
- A picnic pump is a tap that attaches to the keg like any other, but it has a hand operated air pump to replace the pressurized CO₂ and a faucet attached to dispense the beer.

Regulators

- The regulator controls the amount of gas pressure that enters the keg.
 - Too much pressure causes foamy beer
 - Too little pressure causes flat beer.
 - Usually 9 to 13 pounds of pressure is required depending on beer type and the size of the beer lines.



Regulators



- Just as there are several types of taps, there are several types of regulators.
- Single gauge regulators measure the amount of pressure in the beer lines.
- Double gauge regulators measure line pressure, but also measure the pressure left in the CO2 bottle.
- Regulators can be wall mounted or threaded right onto the CO2 bottle

Half Way There!

- So far, we have a pressurized CO₂ cylinder, a regulator to set the CO₂ pressure going into the keg, a tap (or coupler) to hook the CO₂ to the keg and allow the beer to flow out.
- Now we have to get the beer into a glass.



Beer Lines



- We mentioned beer lines briefly when we discussed beer systems.
- Beer lines are the tubes that the pressurized beer flows through from the keg to the faucet.
- Beer line is available in many sizes and the choice is based on:
 - The type of beer
 - The distance it must travel
 - The gas pressure available to push the beer through the line
 - Please ask for assistance in determining the size of line for any given application.

The Faucet

- The faucet is the delivery point for the beer system.
- Faucets can be mounted in towers or wall mounted using shanks or tapping cabinets.



Beer Towers



- Beer towers are the most noticeable part of a beer system. Most sit on the front of the bar and there are many styles available.
- The choice of what tower to purchase is largely up to the customer's needs and tastes.
- Please note: some towers are designed exclusively for either glycol or air shaft cooling systems.

Drip Trays

- The last common component is a drip tray.
- Though not technically a part of the beer system, drip trays carry the overflow and drips from the faucet to a holding bottle or drain.
- Drip trays tend to be of two types:
 - Surface mounted
 - Recessed

Beer System Cleaning

- Beer lines are periodically cleaned to remove impurities and deposits that can cause beer to be flat or taste “off”.
- Most large systems are cleaned professionally, but smaller systems are often cleaned by the owner – especially keg boxes.
- The frequency of line cleaning is largely based on the volume of beer dispensed.

So, How Do You Clean a Line?

- Lines are cleaned by pumping a cleaning solution through them.
- Special cleaning solutions are used that remove mineral deposits followed by pumping water through the lines to clear out the solution.
- At right is a small hand operated pump for keg box use.



Other Common Beer Products



- Coil coolers are another common beer product
- These coolers have coils in them that connect between the beer line and the faucet.
- The cooler is filled with ice to cool the beer as it passes through the coils
- Another variation is a cooler that uses a cold plate to chill the beer.



Fittings and Tools

- There are hundreds of connections and fittings available; sized to accomplish almost anything required to move beer from one location to another.
- While most fittings and connectors are never replaced, washers are wear parts and need to be replaced frequently – usually during a cleaning cycle.



Long Draw System Design

- Rapids designs long draw systems at the customer's request. There are many factors that must be accounted for, and the complexity can be overwhelming to a novice. Rapids has Certified Draft Technicians on staff to assist with these projects:
- Please contact Loren at the Marion office for assistance in designing or setting up any long draw system.

Ask And Learn

- Learning about beer systems is fairly straight forward even with all of the choices that can be made. Don't be put off by the wide variety of parts and pieces. If you have any questions – just ask!
- Rapids Wholesale is well known as a source for beer dispensing equipment and advice. We are here to help at any step along the way!

