

Quality

Beer temperature

Why is it important?

Customers will walk away - 34% of consumers will go to a **different outlet** if quality is poor

Customers will order something else - 49% of consumers will **not order** the same drink if quality is poor

Customers will **pay** for the best - 53% of consumers will pay more for a good quality product

Research has shown that when you have this knowledge on the handling and serving of beer, sales can increase by 3% (British Beer and Pub Association) and yields improve by up to 7% (Cask Marque). (3)

Cask Ales

To experience all the aromas and tastes that the brewer wants you to, cask ale must be dispensed at the correct temperature. If the beer is too warm, then unpleasant and unplanned aromas will be given off, too cold and the clean, fresh, vibrant tastes will be lost.

The recommended dispense temperature of the majority of brewers is between 11 - 13°C. Cask Marque audits to a required range of 10-14°C allowing a little leeway.

Some cask ales are meant to be dispensed at lower temperatures, particularly summer beers. These have been specially brewed in order that no chill haze occurs at temperatures where other cask ales might be affected. (4)

Chilled cask 7 -11°C

Standard lagers and keg products

Standard lagers and keg should be dispensed around:

- Lager and cider 5 - 9°C
- Keg ale and mild 6 -12°C
- Stout 5 - 9°C

Extra Cold Products

The trend these days is towards colder products and many pubs and bars will be using glycol cooling systems and flash coolers in order to dispense 'extra cold' products. These are normally dispensed between 1 - 5°C depending on the equipment. (4)

These temperatures are only a guide. It is expected that all brand specifications will fit within these ranges but if in doubt, consult the individual brewer's specification. They will vary with throughput.



Tips:

1. iDraught can identify any drinks served too warm, pinpointing any issues with brands or warm dispense at certain times.
2. Are the warm beers due to faulty equipment or cellar cooling? If so iDraught will be highlighting to you the equipment (if monitored) that is causing the issue.
3. iDraught will send you an alarm if your equipment or cellar cooling fails, allowing you to then proactively address the issue before your customers are aware.
4. Are the temperatures the cause of any over pouring/wastage issues – iDraught reports on the temperature of every drink, so you can identify any link!

Beer Dispense

Pouring yields

Increase profits by reducing wastage

Did you know that filling one drip tray per day with waste beer is equivalent to almost £1,400 per year at £2.50/pint* in a typical ten tap account, this could cost you up to £14,000!

Imagine how much money can be wasted due to poor pouring practices, fobbing caused by dirty lines, high cellar temperature and casks or kegs that have been on sale for too long.

*1.5 pints per drip tray @ £2.50/pint (Net) @ 365 days per year (2)

Tips:

1. iDraught can identify any poor pouring practices! Highlighting when drinks are being over poured! Who is wasting your beer? Identify the instances and use the data as an incentive to re-train your staff.
2. Is the wastage caused by dirty lines? If so then iDraught will be highlighting to you the lines that require cleaning.
3. Is the wastage, equipment or cellar cooling related? If so iDraught will be highlighting to you the equipment (if monitored) that is causing the issue.
4. Always use a clean, undamaged glass for every order (2)
5. Where possible, ensure that glasses display appropriate branding. Research indicates that most customers prefer branded glassware and it significantly improves product presentation (2)
6. Use nucleated glasses to ensure good head formation. Hold the glass at the base during pouring, avoiding contact with the brim(2)
7. Make sure that the customer has a proper measure. Industry good practice is that 95% of the volume of a pint is liquid, with the head accounting for no more than 5%. There may be regional customer preferences and you should always try and satisfy customer requirements. If a customer requests a top-up you must oblige (2)
8. Store glasses upside down on sheets of plastic lattice; this allows fresh air to circulate within the glass. (2)
9. DON'T refill a used glass, for two reasons: (2)
 - a. It's unhygienic, bacteria from customer's saliva will be passed to the tap spout
 - b. A used glass suppresses the release of gas bubbles; reducing head retention and making the beer appear lifeless.
10. DON'T use warm glasses straight from the glass washer, beers will fob if the glass is warm (2)
11. DON'T use glasses that are still wet inside, the beer head will collapse rapidly(2)
12. DON'T store wet glasses upside down on hard surfaces because the trapped moisture generates unpleasant smells and off flavours. (2)

To calculate your losses at the drip tray look at the table or use the iDraught benefits calculator on the main page.

Wastage in £s per year (£2.50 per pint, one drip tray holds 1.5 pints)

		Drip trays of beer wasted per tap									
		1	2	3	4	5	6	7	8	9	10
Taps on bar	1	1369	2738	4106	5475	6844	8213	9581	10950	12319	13688
	2	2738	5475	8213	10950	13688	16425	19163	21900	24638	27375
	3	4106	8213	12319	16425	20531	24638	28744	32850	36956	41063
	4	5475	10950	16425	21900	27375	32850	38325	43800	49275	54750
	5	6844	13688	20531	27375	34219	41063	47906	54750	61594	68438
	6	8213	16425	24638	32850	41063	49275	57488	65700	73913	82125
	7	9581	19163	28744	38325	47906	57488	67069	76650	86231	95813
	8	10950	21900	32850	43800	54750	65700	76650	87600	98550	109500
	9	12319	24638	36956	49275	61594	73913	86231	98550	110869	123188
	10	13688	27375	41063	54750	68438	82125	95813	109500	123188	136875
	11	15056	30113	45169	60225	75281	90338	105394	120450	135506	150563
	12	16425	32850	49275	65700	82125	98550	114975	131400	147825	164250
	13	17794	35588	53381	71175	88969	106763	124556	142350	160144	177938
	14	19163	38325	57488	76650	95813	114975	134138	153300	172463	191625
	15	20531	41063	61594	82125	102656	123188	143719	164250	184781	205313
	16	21900	43800	65700	87600	109500	131400	153300	175200	197100	219000
	17	23269	46538	69806	93075	116344	139613	162881	186150	209419	232688
	18	24638	49275	73913	98550	123188	147825	172463	197100	221738	246375
	19	26006	52013	78019	104025	130031	156038	182044	208050	234056	260063
	20	27375	54750	82125	109500	136875	164250	191625	219000	246375	273750

Figure 1 - Beer wastage table (net price)

Beer Dispense

Types

Keg Beer types

In a modern bar this term can be taken to cover all lagers, stouts, draught ciders and those bitters not served using a traditional beer engine. All of these drinks have several common points:

- They are all pasteurised
- They are pre-filtered
- Served chilled using a pressurised gas system this pushes the beer through the pipes to the bar.

The barrels themselves are generally of stainless steel construction and can hold either 5.5 gallons (25 litres) for low-volume sale beers, 11 gallons (50 litres) as a standard size or 22 gallons (100 litres) for high-volume sales in large pubs. (Though barrels in sizes 10 and 18 are also available)

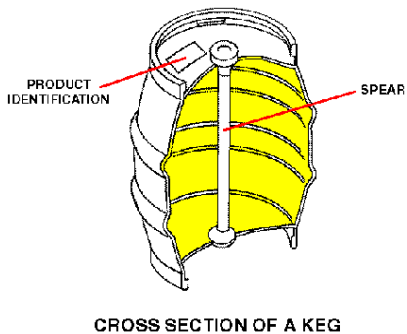
There are two different gases used in the service of keg beers:

Carbon Dioxide

Carbon Dioxide can be used to dispense lagers, keg bitters and ciders. It maintains the quality of the beer as it is dispensed and is used to propel the beer from keg to tap. The pressure of Carbon Dioxide is set to achieve equilibrium pressure in the keg, this protects quality by ensuring the beer does not become flat or over carbonate (fobbing). Length and height of run are then factored in to provide the driving force. For long runs gas or electric pumps may be required.

Mixed Gas

This is a mixture of Carbon Dioxide and Nitrogen which may come in mixes of 70/30 (bitters and stout) 60/40 or 50/50 (lagers and cider). The use of mixed gas enables far higher pressures to be used as Nitrogen is not as readily absorbed by the beer. This reduces the need and expense of additional gas or electric pumps except in extreme cases. The Nitrogen also reduces fobbing and gives the beer a tighter creamier head.



The mechanics behind the serving of a keg beer are as follows:

- The barrels are positioned vertically - each barrel is hermetically closed and pressurised in the brewery prior to delivery.
- Running down the centre of the barrel is a long 'spear line' basically a hollow metal tube through which the beer is drawn up into the pipes connecting it to the bar.
- The barrel is also connected to a high-pressure gas bottle (via reducing valves). As previously stated, this gas is used to propel the beer up through the pipe work to the bar .
- On opening the 'tap' on the bar, the beer then flows up through the lines, is chilled down to specification en-route and is served.



The general cellar set-up for the serving of keg beers varies from pub to pub and is dependent on the number of different beers sold and their types. However, each keg has a single connector on its top, which connects the keg to both the appropriate tap(s) on the bar and to a pressurised gas ring main running around the cellar. Each and every brewery has their own unique type of coupling to stop publicans inadvertently connecting another brewery's beer to a particular tap in the bar.

Keg fittings

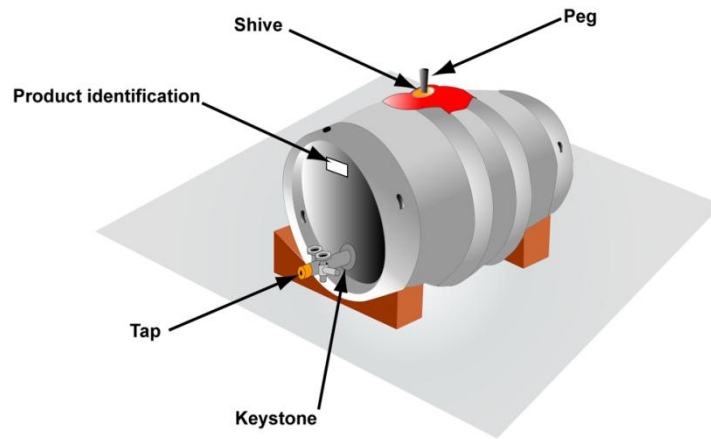


Sankey Fitting



Grundy Fitting

Cask-conditioned Beers (Real Ales)



In the 'good old days' the only beers available in the UK were cask-conditioned. These beers, although lauded by organisations such as CAMRA (The Campaign for Real Ale) do require much more work on the part of the licensee and this work (or lack of it in some cases) plays an important role in the quality of the beer itself.

The beer itself is delivered to the pub in a partially-finished condition and once placed in the cellar undergoes a secondary fermentation process - this breathes life into an otherwise 'immature' drink.

The barrels used are unpressurised and must be placed in a horizontal position prior to use (unless using a siphon system). The end of the barrel is fitted with a simple wooden (or plastic) bung, and a second bung is located midway along the side of the barrel. The days of wooden barrels have unfortunately almost entirely gone and nowadays, for economic reasons, most real ale casks are stainless steel.

The beer is served through muscle-power alone, with no pressurised gas system and is usually not run through a cooler (although cask coolers are becoming more common). Each barrel is connected directly to an insulated plastic pipe running straight from the cellar to a manual 'beer engine'.

The Beer Engine

The 'beer engine' or hand pull is the traditional method of serving real ale. The device is simply a lever, fixed to the bar, connected to a cylinder and piston (usually of ½ inch capacity) directly below the bar counters. Pulling on the lever pushes beer out of the cylinder into the glass, whilst pushing back on the lever, through the technical masterpiece of a simple non-return valve, draws more beer up through the pipes and refills the cylinder.

Although the cylinder is generally insulated, this system does have the major drawback that if a beer is not served for a length of time (overnight) then the first half pint of beer drawn from the pump does tend to be too warm - and in most pubs the barman will discard this half pint.

Preparing a 'Real Ale' for Service

This is the most complicated part of a landlord/landlady's job .If they get it wrong, or neglect their duties, then a pub can rapidly lose clientele and reputation.

- From the moment of delivery until a barrel is emptied, constant attention must be paid to a barrel of real ale and various steps are requisite in the serving of a decent pint. On delivery - The barrel must be immediately placed in a horizontal position on a stillage –generally a wooden rack, designed specifically to hold the barrel securely in a virtually horizontal position (usually slightly angled towards the front of the barrel).

This must be done immediately as there is still a great deal of sediment suspended in the beer. Every time the barrel is agitated the sediment takes longer and longer to settle - Thus, if a barrel is left any length of time before being prepared for service, the additional movement of placing the barrel on the stillage means that it will take much longer to 'clear' and be ready to serve.

- Soon after the barrel is placed on the stillage it must be vented. This process involves piercing a hole in the bung, now on the upper surface of the barrel, allowing air to enter the barrel and starting the process of secondary fermentation.
- To stop foreign bodies (such as insects) and air entering the barrel, you insert a porous, softwood peg into the hole



- 24-48 hours later a steel or plastic tap is driven into the bung on the end of the barrel.

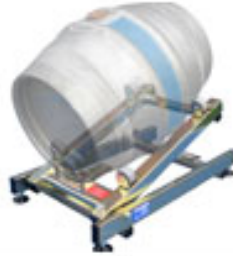
The reason behind the timing is simply that the sediment in the beer has had time to fall to the bottom of the barrel and is therefore less likely to fall onto the tap within the barrel and thus be drawn up into a glass. The 24 hour delay between tapping and service is to ensure that any sediment disturbed by the process has time to re-settle.

- Prior to service - The barman should draw off a quantity of beer from the tap in the cellar to ensure its clarity if it isn't clear then it shouldn't 'be served!
- If a barrel has cleared (thus is ready to serve) but is not yet required. Then the softwood peg should be removed and replaced by a non-porous, hardwood peg - Thus sealing the barrel and preventing air contamination.
- Prior to each service period in the bar the wooden peg should be removed from the barrel - Otherwise the action of the beer engine builds up a partial vacuum in the barrel making it virtually impossible to pull a pint. However, the peg must be replaced at the end of each service period (when the bar closes for the night).

If kept correctly, a barrel of real ale should easily last from ten days to a fortnight once delivered - however, once it has been connected up and is being served it should be sold within three days.

To avoid wastage as the level of beer in the barrel falls, the barrel may be *gently* tilted forwards and held in place by wooden chocks - Thus reducing the amount of beer wasted at the end of a barrel.

Automatic stillage



Automatic Tilting Stillages are designed to gradually tilt as beer is dispensed from a cask. As beer is drawn the weight of the barrel reduces allowing the stillage springs to gradually open and tilt the cask. The smooth tilting action coupled with an efficient final tilt angle helps to save money by reducing beer wastage to a minimum.

They are a labour-saving way of dispensing cask ale which can also cut down wastage and increase profits.

- Ensure that the auto tilt is set up correctly, in particular the balancing mechanism, which varies by container size; refer to manufacturer for specific instructions
- Clean auto tilts when changing a cask, using water and a hard brush. This prevents slime accumulating, which could infect the beer. It also decreases the risk of corrosion to the tilt mechanism.

Cooling Equipment

Coolers

Behind-bar Coolers/Shelf Coolers



This method is usually found in smaller bars (or those serving a small number of beers).

The beer is fed up to the bar area through insulated plastic tubing and through a small chilling device situated under the bar counter itself. The chilling device is simply a metal box containing a fridge compressor system used to chill a tank of water. Up to two beer lines can be connected to each cooler and each beer runs through a copper 'serpentine' immersed in the water bath - beers can be served at differing temperatures by the simple method of varying the length of the copper tubing immersed in the bath. The beer runs from the cooler directly to the tap, a matter of a few inches of pipe, and should thus be at the perfect temperature for service.

The advantage of this system is its simplicity, the major disadvantage for larger bars is that multiple coolers behind the bar take up a great deal of space and release a great deal of heat.

Tips:

1. iDraught monitors the final temperature of the product – if your cellar cooler and your remote coolers are showing as fine, but your beers are warm and you have under shelf cooling then check here.
2. Keep it clean. The grilles can easily become blocked. They should be kept clean with a soft brush or, ideally, a vacuum cleaner.
3. Check the unit is topped up with water - there is a topping up point in the top and an overflow.
4. They are designed to run all the time so make sure they are kept switched on.
5. Remember! If the grille is blocked with dust the cooler will use more energy and at the same time be less efficient.

The Central Cooler/Remote cooler/Python System

A single, much larger, cooler is situated in the beer cellar. The pipes from each individual barrel are then run directly into the cooler and through their own individual copper coils.



From there, a 'python' is run up to the bar. A python is a pre-bundled set of insulated plastic tubes, each one individually colour-coded to ensure identification. Pythons can contain eight, 16 or even 32 separate beer lines in a single bundle. In addition to the individual beer lines, chilled water is pumped from the cooler through the python in a closed circuit system with its own larger diameter pipes.



Behind the bar itself, the taps are connected by simply cutting into the outer insulation of the python, identifying the correctly coloured pipe and connecting it to the appropriate tap.

Tips:

1. **Keep the area around the remote free from stored items such as crisps and bottled drinks.** The space is there for a reason - to enable air to circulate around the unit. Half covering the grilles on the side means half the cooling capacity.
2. **iDraught will monitor the temperature and your summary page will alert you if you have any issues**
3. **Remotes are designed to run all the time so make sure they are kept switched on.**
4. **Check the remote is topped up with water/coolant.** There is a top-up point on the top of the cooler with an overflow. The water should just cover the ice bank and coils. If there is a glycol top-up point make sure the unit is topped up with the correct strength of glycol. This not only ensures cooling works but for external 'heat dump' systems it also protects the system from freezing up.



Top up point

Cellar cooling & the cellar environment



Check your cellar cooling is working properly. It should give a cellar temperature of 11 to 13 degrees centigrade and run for a maximum of 16 hours out of every 24 hours. Make sure fan grilles are free from dirt and if there is a fan or "heat dump" outside the pub, then make sure nothing is stored nearby. Leave it switched on at all times - the control system will call in the cooling when required. Some cellars will actually get too cold in the winter and a good cellar temperature control cooling systems (CTC) are designed to heat the space up to 11-13c. However some are just cellar cooling only and will allow the temperature to drop very low. Cask beer is especially susceptible to damage from cold leading to a chill haze. (5)

Tips:

1. **Keep the cold air in:** Cellar cooling is designed to keep the cellar space cool. It is not designed to cool the rest of the pub! Keep doors and windows closed as much as possible. (5)
2. **iDraught will monitor the temperature and your summary page will alert you if you have any issues**
3. **Keep it clean at all times** – Cellar, drains and sumps (Including any spillages)
4. **Ensure it has good lighting**
5. **Ensure it only contains beer!** – You must use it for the purpose it was intended
6. **DONT! turn cellar cooling off to save money**, it will cost far more in wastage due to fobbing and lost sales. This is unless you have automatic timers.
7. **During winter months heating may be required to keep the beer at the correct temperatures**

Line cleaning

Best practice

Beer lines should be cleaned on a regular basis. For pasteurised keg beers this is generally recommended to be done weekly. However, for unpasteurised cask beers again weekly line cleaning is essential but ideally you should flush through the beer line with clean water each time you change a cask.

A weekly cleaning regime has been show to grow volumes by circa 2% (1)

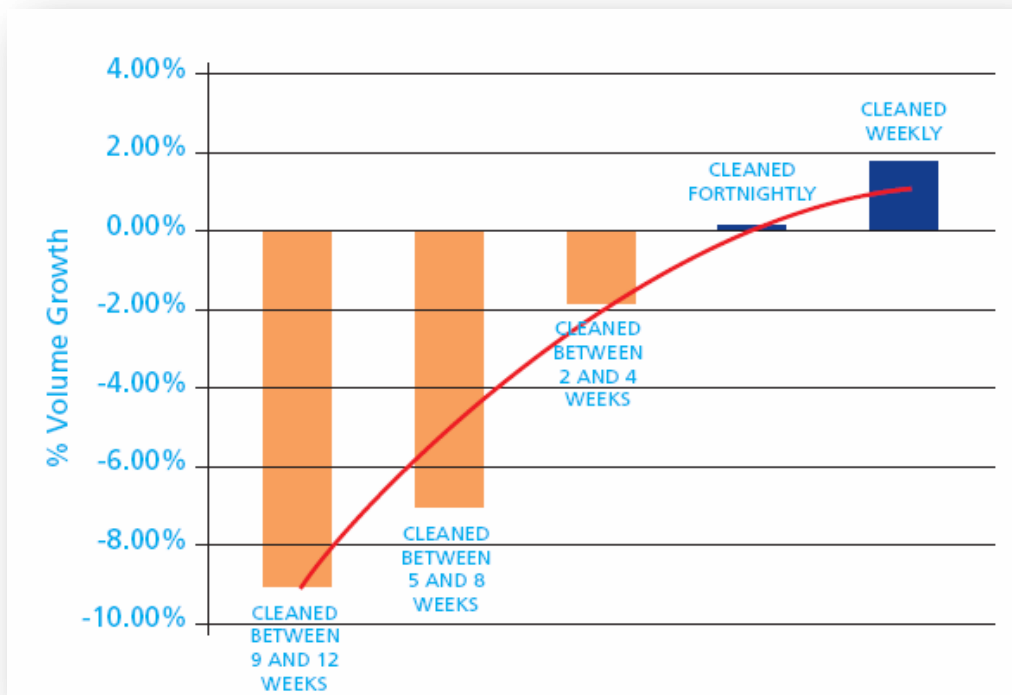


Figure 2 - pubs that line clean every seven days are more likely to show volume growth

This is done to avoid/clear any yeast build up in lines which may affect the taste or general quality of a product they are serving. It also prevents fobbing which is caused by a release of gas from the beer while in the beer lines.

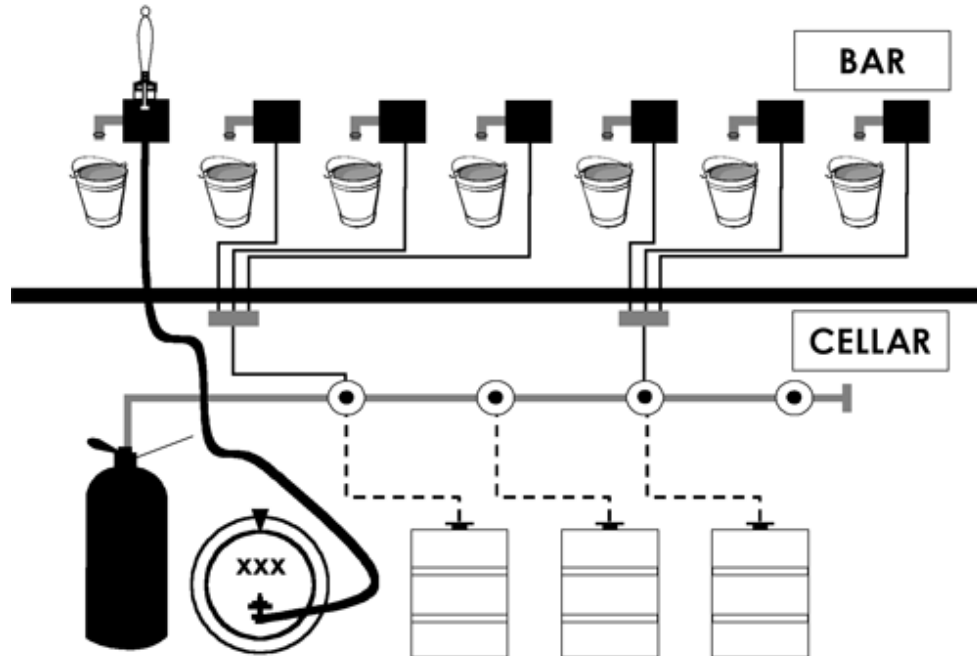
The process for cleaning keg products;

1. Connect keg fittings to the cleaning main, closing all secondary valves.
2. Fill cleaning bottle with clean water.
3. Connect cleaning bottle to cleaning main and open cleaning secondary valve.
4. Flush the system with water, removing beer first from the fob detectors, then at the bar.
5. Add correct amount of cleaning fluid, to the line cleaning bottle, as recommended by the manufacturer.
6. Fill the dispense system with cleaning fluid, first bleeding off the fob detectors. Leave for 10 minutes.
7. Pull through more cleaning fluid (approx 1 pint on each line – this agitates the fluid to encourage any yeast is removed).
8. Leave for a further 10 minutes
9. Repeat steps 7 and 8 until the system is fully clean.
10. Rinse cleaning bottle and flush through the system with clean water (a minimum of 10 pints of fresh water on each line – this may vary dependant on length of run).
11. Reconnect keg fittings to kegs and open secondary valves, closing cleaning secondary valve.
12. Pull through beer flushing out all the water

The process for cleaning cask products;

1. Flush through with clean water
2. Pull through pipe cleaning fluid
3. Leave for 10 mins
4. Pull cleaning fluid through a further 2 times leaving for 10 mins each time
5. Check system and if clean, pull through a minimum of 10 pints of fresh water, ensuring all traces of cleaning fluid are out of the lines.
6. Reconnect beer
7. Pull through beer pushing out all the water.

The manual method of line cleaning:



Tips:

1. Avoid cleaning your lines on the "peak trading days", so there is no risk of interrupting beer dispense when you are busy. Skipping cleaning risks quality so make sure you make the time to do it.
2. Don't forget, though the iDraught system will remind you of any lines that are overdue a clean it will not clean them for you.
3. Also clean the following; coupling heads, cleaning sockets, line primes, pipes, taps, spouts, creamer disks, sparklers and drip trays.
4. Goggles, Gloves and protective clothing should be worn as pipe cleaner is corrosive
5. A "Danger line cleaning in progress" notice must be displayed in the bar in an appropriate place during the process.
6. No line cleaning solution should be in lines during trading hours.

Throughput

Best practice

Cask Beers (Real Ales)

Sell a cask within three days of putting on sale.

Why?

Cask ales have a product life of up to 35 days from the date they leave the brewery. Once connected to the bar for serving it will deteriorate after 3 days due to exposure to airborne yeast, bacteria and oxygen in the cellar.

Tips:

1. Manage orders of cask ales so that these containers can be sold within 3 days of being placed on sale.
2. Use double cask taps (one container to two beer engines) to ensure containers are emptied more quickly
3. Aim for a minimum stock level of 3 days to allow the beer to 'condition' (see section 4.5) and a maximum of 10 days to avoid the beer being sold after its Best Before date
4. Carry out stock rotation in the cellar, using the oldest stock first





Keg ales

Why lose underused taps?

Taps which are infrequently used result in compromised quality.

Taps located outside bar 'hotspots' – hits staff productivity.

The cost of the fount; line cleaning costs; cooling costs etc.

Tilled yield

Best practice

After all the hard work of ensuring the customer receives the perfect pint, the last thing anyone wants is to give that product away for free or at the incorrect price!

Till deficits don't always mean you have a theft issue, it maybe the product has been cross rung, it may have been poor till discipline or it may have been un-logged wastage e.g. kitchen use/incorrect drink poured.

Using iDraught you can now match the drinks poured to those tilled, any discrepancies will be immediately visible, and this enables you to engage the issue with your staff with all the information you need.

Tips:

1. Find out when it is happening. Use 'Yield' tab and click on Till Yield graphs for hourly views.
2. Can you see a pattern against Staff rota?
3. Is another product in surplus at the same times indicating cross ringing?
4. Formulate an action plan with targets for reduction – week on week.
5. Discuss and share the reports with your staff.
6. Target staff to reduce any till yield losses.
7. Provide additional training on till discipline if necessary.



References

1. EBC Paper: Draught beer quality - challenges and opportunities - David Quain
2. Profit Through quality – BIIAB
3. Morning Advertiser 14/02/2007
4. Cask Marque
5. Innserve website