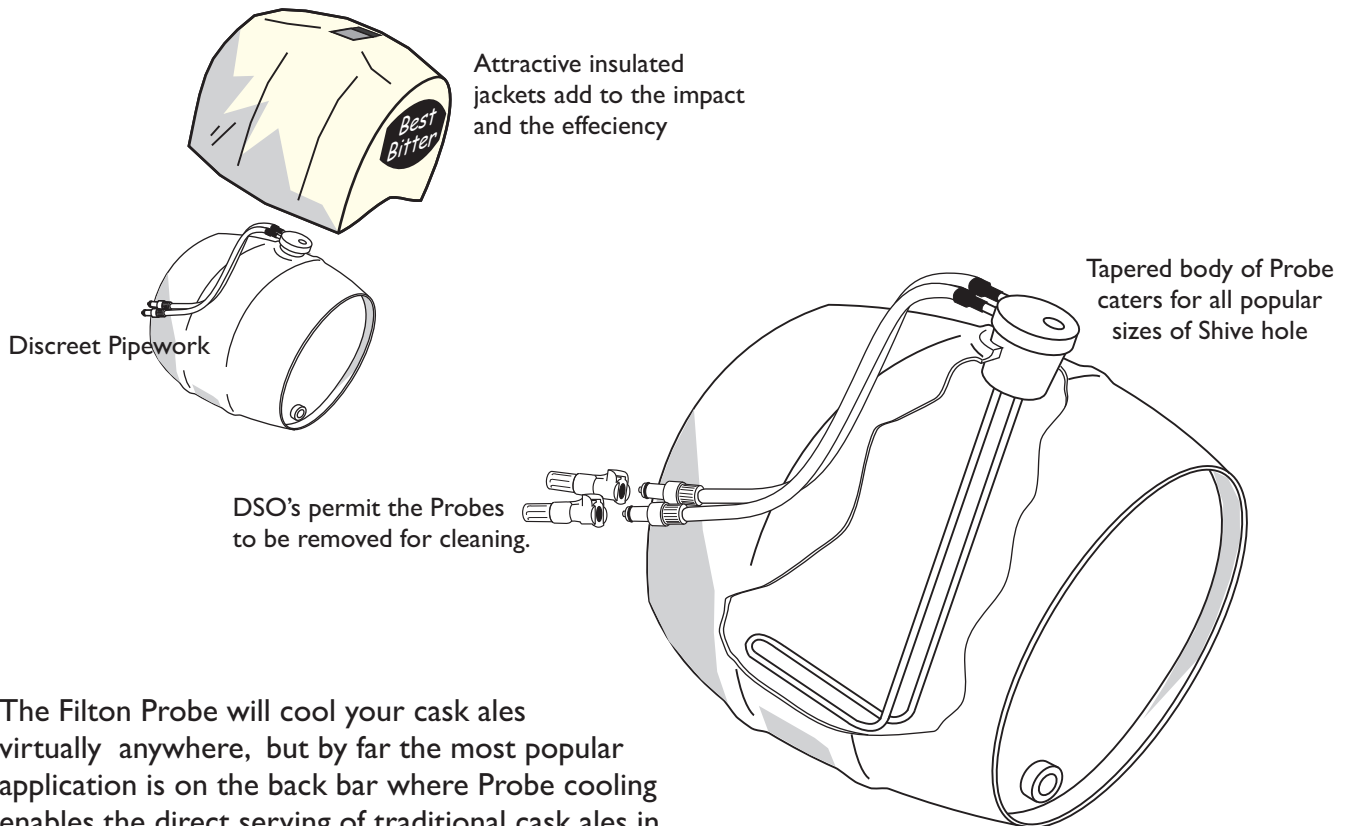


# COOLING PROBE FEATURES

The principal of Probe cooling is long established and the benefits of energy efficiency and performance are well accepted. The Filton Probe adds to this a degree of hygiene, flexibility, versatility, discretion and ease of use that mark it out as a new design standard.



The Filton Probe will cool your cask ales virtually anywhere, but by far the most popular application is on the back bar where Probe cooling enables the direct serving of traditional cask ales in otherwise very difficult environmental conditions.

Ale from the cask is as good as it gets, exactly as the head brewer intended it to be, No line cleaning, no line losses and a high profile point of sale feature that says 'We serve beer at it's best' and with the superb beers available today, beer at it's best is an excellent product and very popular with customers.

The simplicity of Probe cooling makes it a very affordable and reliable system. The Probes can be supplied complete with refrigeration unit and pipework for self assembly or on their own for installation by technical services.

Because of the DSO's (double shut-off valves), each Probe can be removed for cleaning without affecting the other casks. Probe maintenance is simple, just clean thoroughly after each use the same as you would your cask taps.

Using Filton cooling Probes does not mean you have to change the way you care for your beers, apart from removing the shive (we provide a special tool for this) you can treat your beers as you normally would, using traditional hard and soft spiles, but if you prefer, the Probe will also accept the popular Race Cask Ventilator..

Temperature control is an important feature of Probe cooling. Using the adjustable thermostat on the standard shelf cooler, you can control the temperature of cooling water supplied to the Probes and alter the temperature as necessary to meet with changing demands through the year.



**FILTON**  
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PROBE TECHNICAL.CDR

# COOLING PROBE TECHNICAL SHEET

Filton cooling probes are intended for the cooling of cask conditioned ales.

## General

Probes are available in two sizes:

The 9 gal probe suits cask sizes 9g, 10g and 11g (50ltr).

The 18 gal probe suits cask sizes 18g and 22g (100ltr).

The tapered Probe body fits Shive hole sizes from 2" to 2 1/8" dia (50.8mm to 54.0mm dia)

## Construction

Probe head moulding -	Food grade polyurethane, 90deg shore with 11mm dia through spile hole
Cooling element -	5/16" (7.9mm) Dia x 23swg seam welded 304 stainless steel
Connecting lines -	6mm I/d 30deg shore silicone x 450mm (9g) or 550mm (18g) long
Probe side connectors -	1/4" Acetal valved with ferrules fitting
Supply side connectors -	1/4" Acetal valved with disconnect button, 3/8" push-in fitting

## Extremes

The Probe assembly may be damaged if it is subjected to temperatures above 100 deg C or below -10 deg C Probe assemblies are type tested to 20psi. We recommend the maximum working pressure should not exceed 10psi (0.7bar). The materials used in the Probe assemblies are resistant to most commonly used chemicals. Tests have been conducted with strong solutions of some beer line cleaners with no detectable affects.

## Probe Performance

*Assumes ambient of 26 deg and final beer temperature 12 deg - Delta T = beer to cooling water*

<u>9 gal initial cooling</u> -	Delta T = 20deg - 107 watts
<u>9 gal steady state cooling</u> -	Delta T = 6 deg - 32 watts
<u>18 gal initial cooling</u> -	Delta T = 20deg - 170watts
<u>18 gal steady state cooling</u> -	Delta T = 6 deg - 51 watts

## Average Initial Cooling Requirements

*Cooling to 12 deg in 24 hrs from 26 deg in 26 deg ambient*

<u>9 gal uninsulated</u> cask -	49 watts
<u>9 gal insulated</u> cask -	35 watts
<u>18 gal uninsulated</u> cask -	87 watts
<u>18 gal insulated</u> cask -	57 watts

## Steady State Cooling Requirements

*Maintaining 12 deg in 26 deg ambient*

<u>9 gal uninsulated</u> cask -	35 watts
<u>9 gal insulated</u> cask -	12 watts
<u>18 gal uninsulated</u> cask -	53 watts
<u>18 gal insulated</u> cask -	18 watts

## System Capacity

The numbers of casks that can be cooled from one refrigeration unit depends on the output of the unit. Typically a shelf type cooler will provide around 336 watts. Consideration should be given as to whether or not the casks are to be insulated (we would always recommend that they are) and allowance for the fact that some casks will be in steady state cooling whilst others are being initially cooled. We recommend working below the theoretical maximum limits because of unaccountable variables such as cooling water flow rates, localized air movements, pipe runs etc. Using a standard shelf type cooler with 4mtr lift pump, we would suggest a maximum of 3 x uninsulated firkins or 2 uninsulated kilderkins cooled at one time, or 6 x insulated firkins or 3 x insulated kilderkins cooled at one time.

The performance data is derived from calculation. Heat transfer to the cask is based on Wong's principle of cylinders in cross-flow. All temperatures are given in degrees Centigrade. Filton do not accept responsibility for the performance of probe coolers used as part of a multi cask system. All information provided here is Filton copyright 2002. Filton terms and conditions apply to all quotes, transactions and goods supplied. Patent application number. 0326285.4



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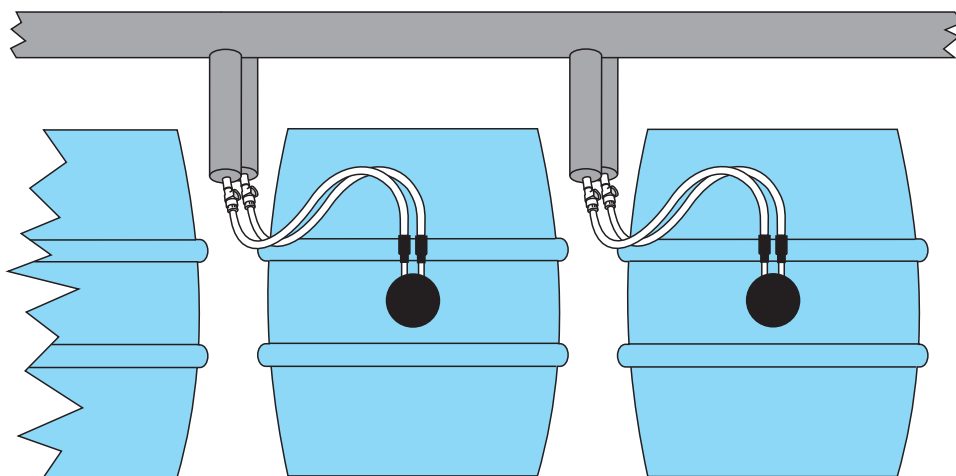
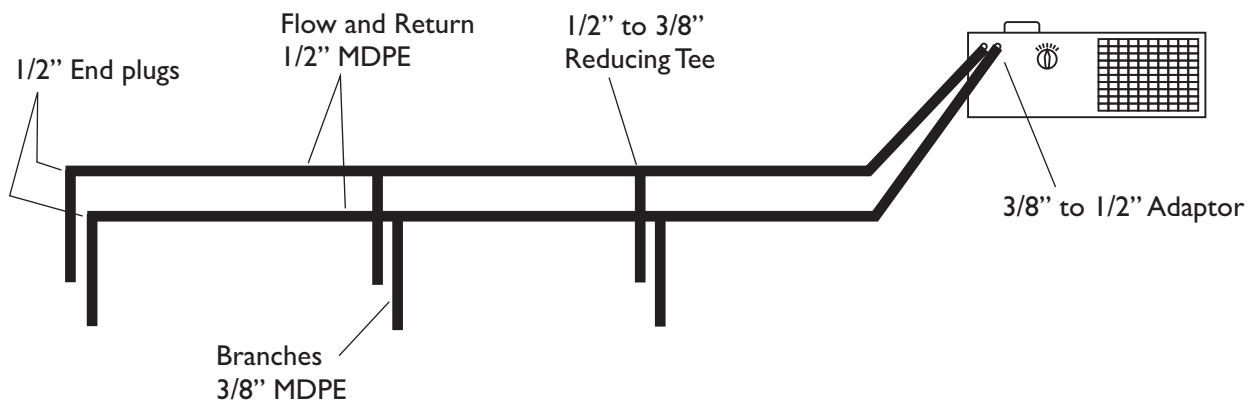
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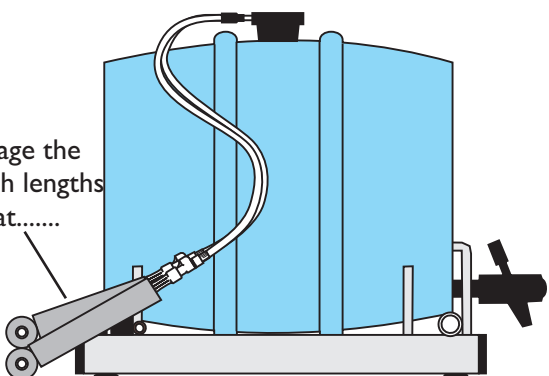
# PIPEWORK

There are many different ways to make up the pipework but it is imperative that whatever tubing and fittings you use, you must configure it in parallel (as shown below) not in series. Only when the Probes are piped in parallel will they all receive the same temperature water, and only then can Probes be removed without stopping the flow to other Probes.

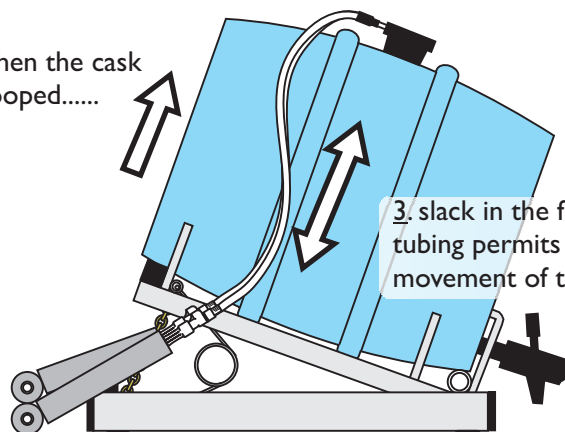
The sketch below shows the configuration, tubing and push-on fittings most commonly used to make up the pipework. All pipework should be fully insulated. We advise that the insulation on the branch (probe end) is sealed against water ingress, either with the purpose made Filton insulation shrouds (suitable for 15 x 9 Insulation) or with insulation tape.



1. Gauge the branch lengths so that.....



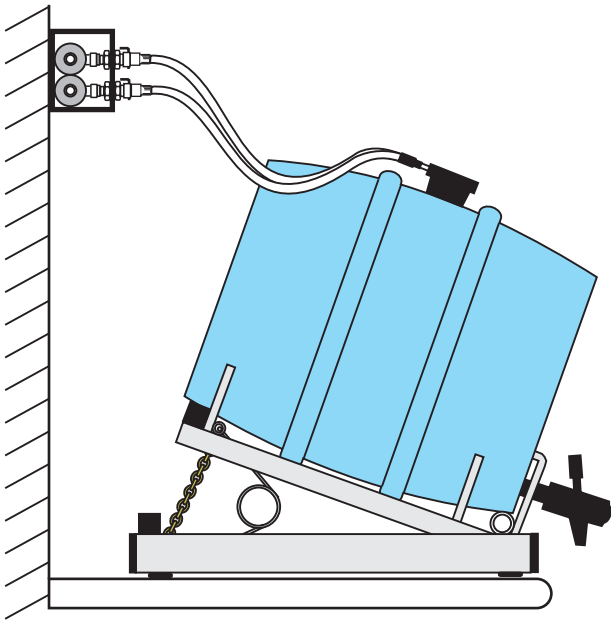
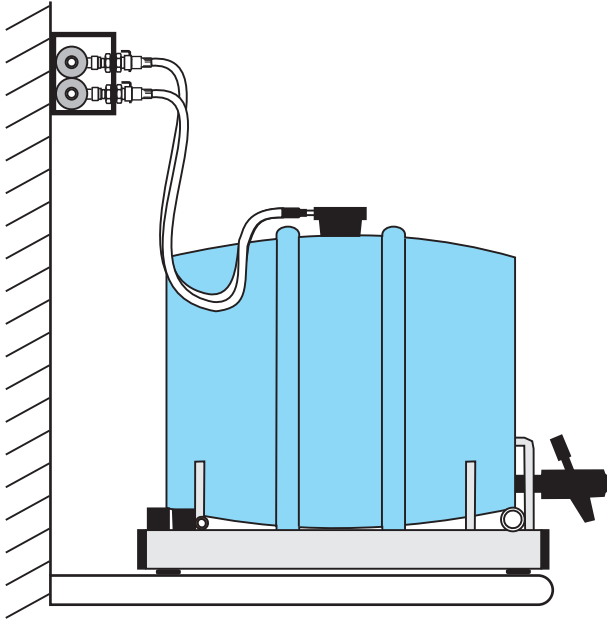
2. when the cask is stooped.....



3. slack in the flexible tubing permits free movement of the cask.

# ALTERNATIVE CONFIGURATIONS

Bulkhead fittings (special order)  
mounted in over-cask trunking

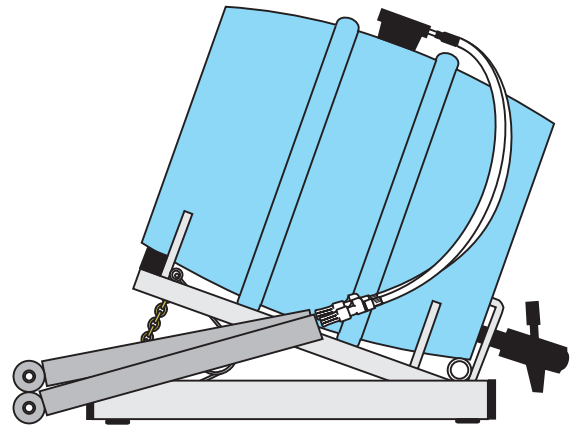
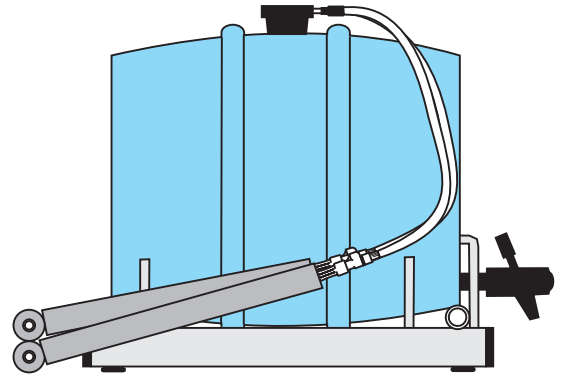


The installation is a little more involved with this method, but it offers great advantages. The fittings are easily accessible and the pipework is kept clear of the counter and protected in trunking.

The Jacket can be put on the cask first and the Probe inserted through it, or the Jacket can be put on after the Probe by passing the supply tubes through the top hole in the Jacket.

With the standard Probe (as shown) the supply tubes will remain outside the Jacket and uninsulated (to enable proper cleaning). Alternatively, Probes can be supplied with detachable tubes, this permits the tubes to be insulated thus preventing any potential problems with condensation, and the probe can then properly cleaned.

Reverse Probe  
(foot still points to rear)

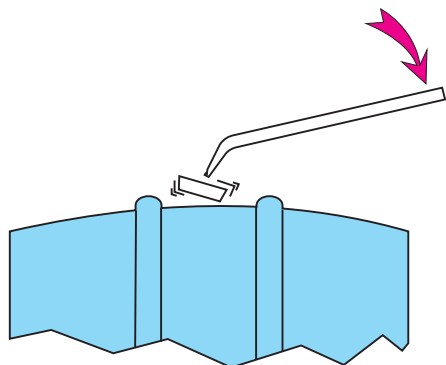


This method places the connectors near to the front of the cask where they are easier to use, and because the tubes fall close to the normal pivot point of a stooped cask, the tubing barely moves as the cask tilts.

The Jacket will cover the supply tubes so no additional insulation is necessary but a special 'Reversed Probe' is required, this is a special order item.

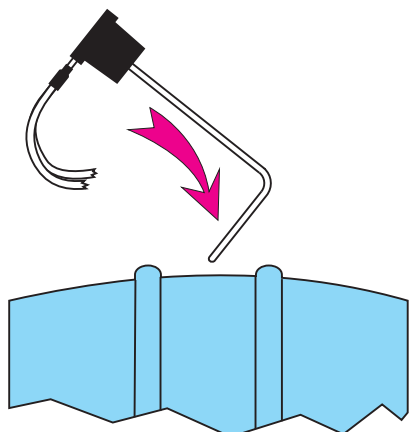
# USING THE FILTON PROBE

## Five simple steps



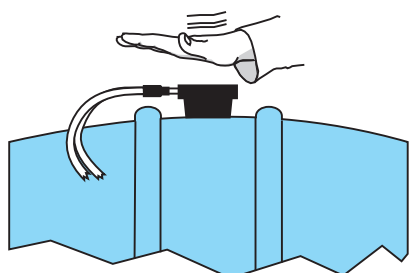
### Broach and Remove the Shive

After putting the cask in position you can clean the Shive and broach as normal. Although It's often a good idea to leave the cask for a short while before broaching to reduce the risk of losing condition if the beer is lively. Once broached the shive may be prised out with the special Shive extractor. Take care to avoid dropping pieces of Shive into the cask.



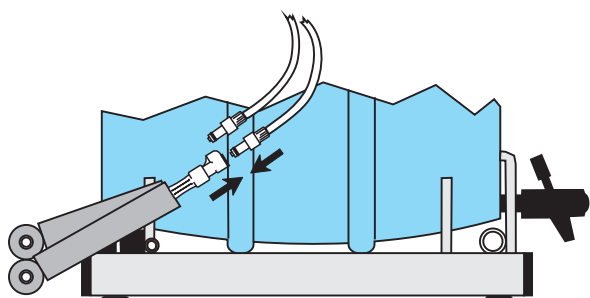
### Insert the Probe

The probe should be inserted with the foot to the rear of the cask. In some circumstances (depending on how the pipework is configured) the supply tubes to the Probe would be outside the Insulating Jacket, in this event, put the Insulating Jacket on before inserting the Probe.



### Secure the probe

The Probe requires only a light pressure to effect an air tight seal in the Shive hole, often the best way is to simply strike the probe with the palm of the hand.



### Connect the water supply

Snap together the fittings on the probe and the supply pipework. There is no right or wrong way, either fitting to either fitting is ok.

**Put on the Insulating Jacket** and you are done. The cooling time depends greatly on the start temperature of the beer, the room temperature and the setting on the cooler, but you can normally expect the temperature to have reached serving point in less than 24 hours.

**IMPORTANT** Be very careful not to set the temperature on the cooler too low, you may over cool the beer or even turn it cloudy. Start with a warmer setting and decrease it as necessary until you find the point that gives you the serving temperature you prefer.

**Cleaning.** Always ensure Probes have been cleaned thoroughly before inserting into a new cask. We suggest cleaning in a dishwasher after each use and weekly in a beer line cleaning solution. Failure to clean thoroughly could contaminate the cask.

**Maintenance.** No routine maintenance is required with the Probe, but the 'O' rings on the DSO valve may become brittle in time and require replacing. The cooler should be kept topped up with water and the condenser grill routinely cleaned of dust. We recommend the regular addition of a growth inhibitor to the cooler water to prevent fungal growths which can block the pipework.