

# Toasting & Charring Machine for Whisky Barrels

**This Machine is suitable for toasting & charring the inside of wooden barrels from 190 to 550ltr.**

The process is carried out horizontally as this is much more energy efficient than vertical systems. Substantial fuel savings are obtained, and burn times are reduced as more heat goes into the cask, rather than being wasted to the atmosphere.

It is also of considerable importance, that the temperature profile across barrels is much more uniform when heated horizontally, compared to a substantial

difference from bottom to top when heated vertically. Whereas both ends must be removed for Vertical Charring, the Schoolhill Horizontal System permits barrels to be charred with only one end removed and this end can be toasted or charred at the same time.



## *Description*

The machine handles most sizes of barrel from American Bourbon Barrels up to large Butts and Puncheons. A loading arm raises casks onto the storage rack from the floor, where they are individually released and transferred to the charring station. The burner lance feeds into the barrel, which is rotated over the flame to provide a uniform char on the inside surface. Speed of rotation, flame strength, and burn time are adjustable, to achieve the required depth of char. When the cycle is completed casks are automatically extinguished, then ejected from the machine by means of a mechanical arm. The burners have an automatic ignition system, and an air blower boosts the flame to ensure correct combustion within the cask. The gas and air mix can be adjusted to provide optimum burn conditions. A burn timer can be set to adjust cycle times depending on the charring depth required.



## **Computerised Temperature Feedback (optional extra)**

Preheating or “low temperature toasting” is becoming much more important now within the Whisky industry. Where this is a requirement the machine can be supplied with a computerised P&ID temperature feedback loop, and this Schoolhill system provides an accuracy of temperature control, which was impossible to achieve with previous technology. With the temperature feedback system, inside temperature is measured at the wood surface, and real time information is fed back to the computer, which instantaneously adjusts the gas and air mix on the lance burner. Multi-stage burn sequences may be programmed by a combination of temperature and time to provide exactly the right profile for your maturation requirements. Cycle times may be varied depending on the preheat, toasting hold time, and charring depth required.

## Background

Considerable research has recently been carried out within the Scotch Whisky Industry which is revolutionising the heat treatment of wooden barrels. Previously whisky barrels were reconditioned by a DeChar and ReChar operation without much attention being paid to the wood heating process. Tests carried out by the Scotch Whisky Research Institute have demonstrated the value of low temperature “Toasting” to release desirable flavour elements, from within narrow temperature bands. Similarly undesirable elements are minimised by this tighter temperature control. The computerised Schoolhill Toasting System is being used successfully today by forward looking Whisky Distillers who strive for much higher levels of quality control.

When charring machines are ordered with this option, the whole process is controlled by the very latest state of the art Allen Bradley PLC system, and all functions are controllable from a colour touch screen. When operating in full auto cycle very little intervention is required, and the system needs only 1 operator to press the “load barrel” button.

Real time temperature profile graphs are provided by the computerised display, and the data for each individual cask is saved to a memory card, which may be downloaded via network connections to your desktop PC and imported to an EXCEL spreadsheet for data analysis. Hence all data is recordable against individual barrels or batch numbers for future reference, and this represents a quantum leap in barrel charring technology.

Croze shields are available for different barrel sizes, and these are inserted into the cask prior to the burn sequence.

Where longer input storage racks are required, the gravity feed rack may be replaced with a powered conveyor.

This equipment may also be set up and programmed for Toasting Wine Barrels, and for customers having a preference not to use gas, Schoolhill can provide alternative heat sources using wooden chips or electrically powered infra red .

**Expected production is 70 /100 casks per day depending on Toast/Char requirements.**

*We are always pleased to discuss your requirements and quote for any types of machines you may require.*