

# Making

# C I D D E R

# From Scratch



You don't have to own an orchard to make apple juice or cider – there are apples aplenty if you ask around your neighbourhood. Peter Willis explains how to make an apple scrapper and a press ... on a budget.





The bumper apple crop of 2011 provided an opportunity to realise my long-held dream of making cider. I learned valuable lessons that year, and in 2012 I made 25 litres of cider and 15 litres of apple juice from 80 kilos of apples. The equipment is relatively straightforward to make, but it takes time to assemble the necessary parts on a budget, so it's worth starting early. It's also worth asking around if (like me) you don't own an orchard – a surprising number of people will have surplus apples that they will be happy to let you have in return for a few bottles of juice or cider.

In this article I will concentrate on making the equipment. For user-friendly instructions on making cider, I recommend the Wittenham Hill Cider Portal: [www.cider.org.uk](http://www.cider.org.uk)

To make juice, you will need a 'scratter' and a press. A competent DIYer/scrounger can make them for considerably less than the cost of purchase, or for a cost comparable to that of a few weekends' hire.

### MAKING A SCRATTER

Numerous websites provide instructions for, or demonstrations of, scratter projects. Most scratters involve a revolving hardwood drum studded with screws. In exchange for the promise of a couple of bottles of cider, my brother-in-law turned a beechwood drum for me. I settled on a diameter of 150mm (6in) and length of 200mm (8in), although the dimensions don't seem to be critical. A local engineering company provided a length of surplus 25mm (1in) stainless steel tube, although in the end my brother-in-law happened to have both a pair of bearings and the matching shaft, which he fitted to the drum for me. Bearings (look for 'pillow block bearings') are readily available for a few pounds on eBay. If you don't have access to a lathe or a woodturning relative or friend, you could assemble a roughly shaped drum round a shaft, and use the bearings as the basis for something along the lines of a pole lathe.



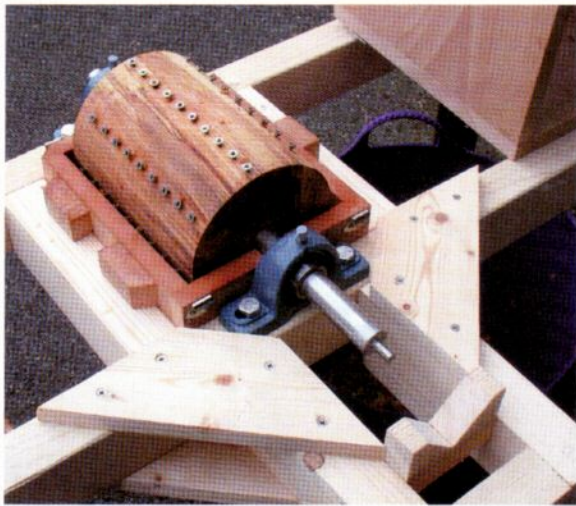
*Above:* Fermenting cider in demijohns.

*Far left:* Portable apple press made from fence posts and a hydraulic bottle jack.

*Below:* DIY apple scratter (chopper/masher) powered by an electric drill.







Above: Frame, drum and bearings.

Right: Screw depth gauge.



Below: Drum in hopper showing staggered screw pattern.

Bottom: Hopper (upside down) showing stainless steel sheets.



I screwed 4x40mm (1.5in) stainless steel countersunk screws into the drum, leaving the heads protruding by 5mm (0.2in). I arranged the screws in eight rows around the circumference, staggered so that each point was swept twice per rotation. The pattern seems to be unimportant, although the consensus seems to be to aim for a screw-head every 5mm (0.2in) along the length of the drum.

The drum sits in a wooden box, open top and bottom. A hopper sits on top of the box. Clearances are important: I allowed 5mm (0.2in) at each end of the drum, and 2.5mm (0.1in) between the screw heads and the front and back of the box (i.e. a total of 15mm (0.6in) on top of the diameter of the drum). I hand turned the drum several times before fixing, to ensure that there was no contact. I fixed thin stainless steel sheet, cut from an old dishwasher, to the bottom few centimetres of the inside front and back faces of the hopper, extending down over the upper few centimetres of the drum box. The steel sheet is probably unnecessary, but looks professional! Slots cut in the bottom edges of the sheet fit over stainless steel pan head screws, screwed with 1mm (0.04in) clearance under their heads, into the front and back of the drum box, a few centimetres below the drum centre line. This arrangement keeps the steel sheet firmly against the inside of the box so that it does not catch the rotating screws.

I made the box and hopper from a beech plank left over from some kitchen worktops, but marine or exterior plywood, or a laminate work surface or table tops, would do just as well. Pallet wood would do for the frame. My frame sits on a pair of chairs, but you could make a custom built support.

### ADD AN ELECTRIC MOTOR

Most of the scratters for which I found plans or videos on the internet were powered by an electric motor, typically of 1hp, via a belt to reduce the speed to the few hundred RPM that seem to be ideal in this case. I searched for a long time for a suitable motor. Although they are readily available new, they are expensive, and I couldn't find a second-hand one at all. A redundant electric lawnmower motor might also do the trick. I contemplated using some sort of hand crank and gearing, or a treadle arrangement like a pole lathe, perhaps with a flywheel and freewheel mechanism, but then thought of using my electric drill. Its 520W (0.7hp) power rating is not far off that of the 1hp motors generally used, and it has the great advantage of variable speed, which I set to a low setting, and the ability to connect directly to a shaft, via the chuck. I suspect that it strains the motor a little, and I would consider buying a £40 1,000W drill specifically for the task if I were intending to make much larger quantities of juice. An Residual Current Device (RCD) is of course an essential precaution.

### THE CIDER PRESS

The press was very straightforward. I made a rectangular frame from 100x100mm (4x4in) fence posts. You could use multiple smaller timbers, with whatever fastenings you can scrounge, but you should probably aim for a frame at least as solid as mine. Welded or bolted steel members would also be an option. Constrained by the available timbers, the internal measurements of my frame was 600mm (24in) wide x 540mm (21in) high. I would have preferred a slightly larger frame. Three lengths of 100x50mm (4x2in), with cutouts to fit over the bottom frame member, support the base plate. I explored using the inside of a dishwasher door as the base plate, and an old washing machine drum as a press cage (I would then have made up net bags for the pulp, and a circular follower to fit the cage, along the lines of commercially available presses), but my limited metal-cutting





abilities and tools made me go for wood.

I made the base plate from more of the beech plank, with plywood backing, and wooden strip screwed around the edges to retain the juice. A work surface or table top would also be ideal. A piece of blue plastic water pipe fits into a hole drilled in the edging strip, and leads the juice into a bucket. I sealed the base with food grade silicone sealant, although you may not need it if your joints are tighter than mine. You will need a few pieces of thick plywood, or other board, a little smaller than your base plate, and a former made of wooden strip a few centimetres deep, the same size as your plywood pieces. Finally, you will need some net curtain material. I bought 5m (16ft) of plain voile, 1.5m (5ft) wide, which I cut into 1m (3ft3in) lengths. To power the press, having rather gratifyingly bent the scissor jack from my car when testing the press last year, I bought a 2 tonne hydraulic bottle jack, costing around £15. A more powerful jack will increase the yield a little, but will of course also increase the strain on the frame.

### THE FUN BIT

The pressing process is very straightforward. First, wash your apples and cut out any badly rotten bits. You don't need to worry too much about bruises, wormholes, etc. Feed the apples into the hopper. Place a container under the box (a flexible garden tub, suitably scrubbed and sterilised, is ideal) and, with your drill set to a low speed, switch on. You may want a cover for the hopper – as the level drops, the apples bounce, and spray and apple chunks tend to fly. It goes without saying that you should keep fingers, children and animals well clear of the scatter – the idea is to produce apple pulp rather than mince!

Place the press base plate in the frame, and the former on the base plate. Spread a cloth over the former and heap pulp onto the cloth. Spread it out evenly, then fold the cloth over, slide the former off and place it on top of your first 'cheese'. Repeat the process until you have a tower of cheeses. Place a couple of plywood pieces on top of the tower, sit the jack on top and carefully apply pressure. You may need to slacken the jack off a few times and insert pieces of timber packing as the stack compresses. A couple of metal plates will prevent the jack from sinking into the wood. Juice will start to run into your container. Don't be alarmed if it is the colour of strong tea – it seems to lighten when fermented or pasteurised. I found that once I had squeezed out as much juice as I could, it was a good idea to fold each cheese in half and press the stack a second time.

### PASTEURISING

The squeezed pulp can go on your compost heap, or will delight your pigs. If you're planning to drink some of the juice rather than turn it into cider, and want it to keep for more than a few days, you can either freeze it or pasteurise it. I pasteurised all of my juice in order to kill any bugs, having collected most of my apples from the ground in a public space (with permission) this year. Pasteurisation is surprisingly simple and effective. I used empty wine bottles kindly donated by a local restaurant. I washed and sterilised them in the oven, filled them to nearly full and placed them in a water bath so that the temperature in the centre bottle reached 75°C, maintained that temperature for 30 minutes, then corked them. It's still drinking well in January, and will presumably keep for several more months.

As for the cider, it works out at about 7% alcohol, is flat and bone dry, but very appley. Well worth the effort! 🌱

*Peter Willis is occasionally inspired to design strange contraptions on the backs of envelopes, enjoying the challenge of reconciling the sometimes conflicting requirements of simplicity, elegance and efficacy.*



Top: Apple pulp in a press cloth.

Above: Building a stack of cheeses in the press.

Left: Pressing with a bottle jack.

Bottom: Home pasteurizing in a preserving pan.

