

STEAMER PLANS

Steam fixation gives the best colour yield of all fixation methods so it is inevitable that the serious fabric painter will eventually be enticed into owning steaming equipment. The following are some steamer options:

WOK STEAMER

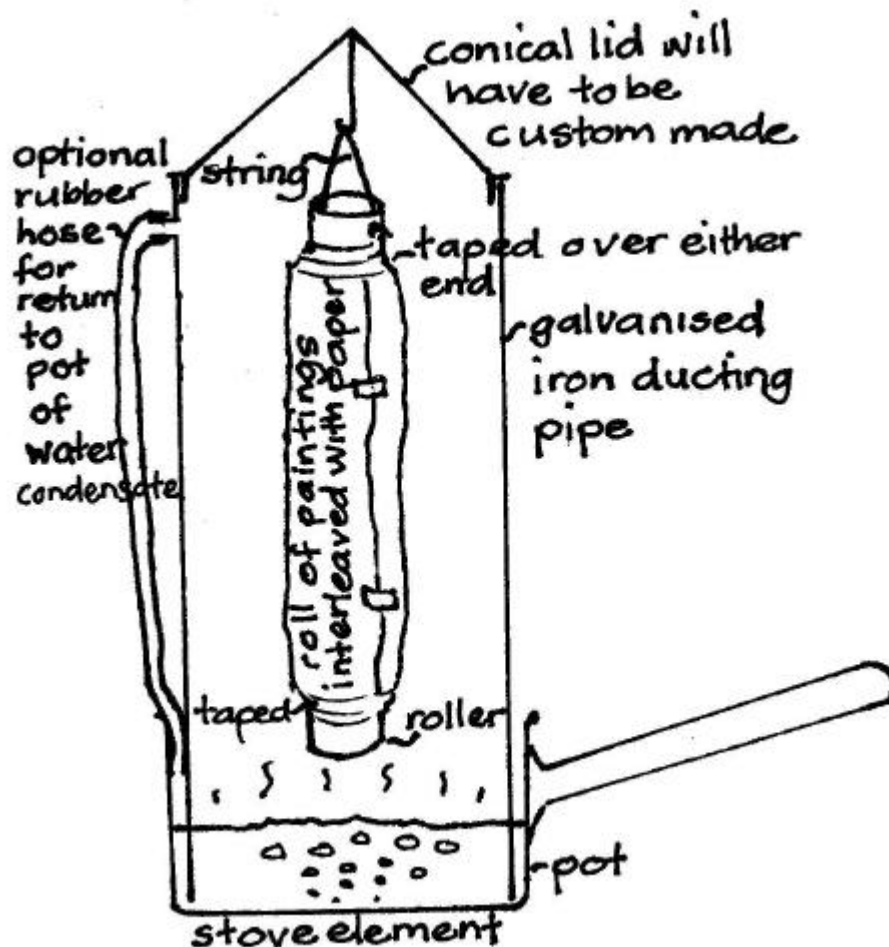
For this simple steamer you'll need a large cheap steel cooking wok and a bamboo Dimsum steamer basket to fit this wok. Chinese supermarkets are the best place to source these. Lay the dry unfixed painting flat between 6 layers of newsprint paper. 3 sheets on either side. The newsprint size should exceed that of the painting by at least 5cm on all sides and the 2 sheets touching the painting should be blank print-free newsprint. An alternative to newsprint is pure cotton. It's advantage, over paper, is that it can be washed and reused. Roll the painting plus newsprint into a cylinder about 8cm in diameter. Flatten this cylinder, tape either end closed, and coil it into a tight spiral parcel. Tie the coil with string to stop it from unravelling. Cut two circles of corrugated cardboard to fit inside the steamer basket. Put the coil between the two cardboard circles and place this in the steamer basket. Fill the wok with water up to 3cm below where the base of the steamer basket base sits inside the wok. Put the lid on the wok and boil gently for 3hrs. Top up the wok with boiling water from the electric jug whenever required. The most common pitfall with all types of steamer, is errant flows of condensation saturating the parcel and permanently watermarking the painting inside. To rectify this irreversible disaster, try placing a tin foil lid over the upper cardboard circle to guide condensation flow around the precious painting parcel.

RUBBISH TIN STEAMER

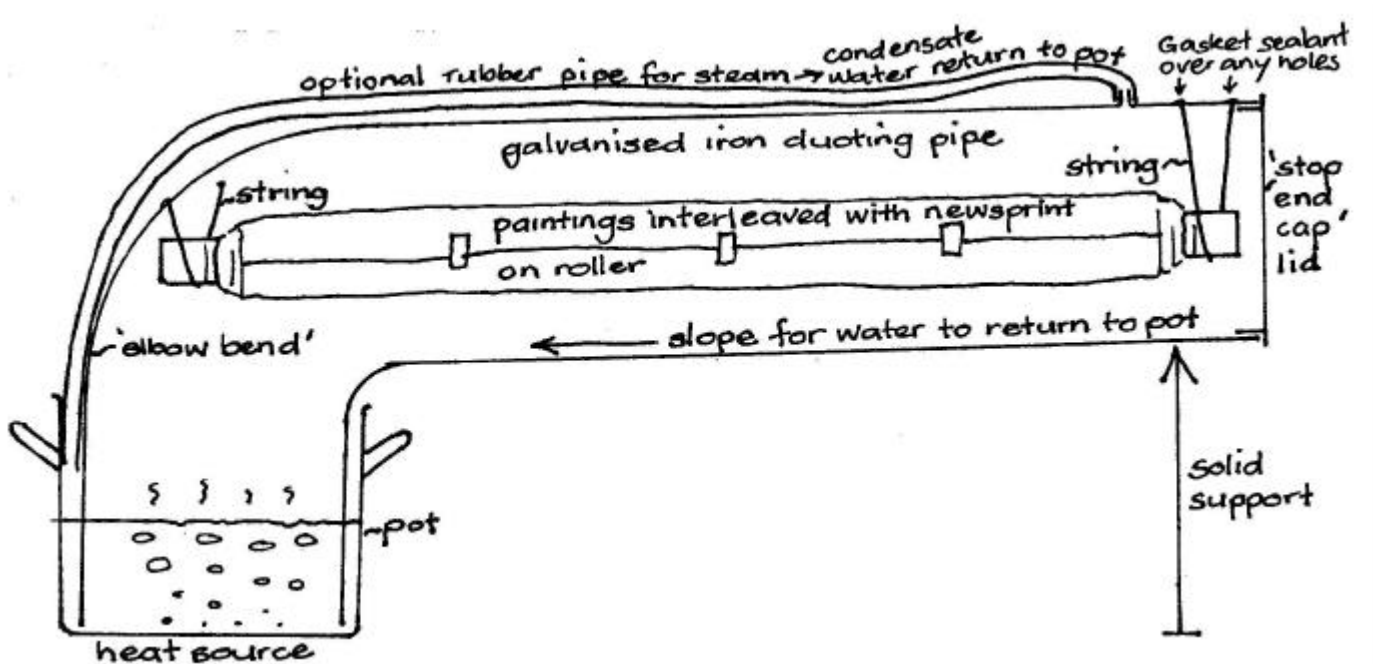
This is an inexpensive large version of a household vegetable steamer pot, which involves a modified 44 gallon steel drum. Halfway up the inside wall of the drum 3 lugs are screwed on, with self tapping screws. These lugs support a circular steel mesh shelf. As described above the paintings are parcelled and placed on the shelf, sandwiched between 2 large circular pieces of corrugated cardboard. The drum is filled to about 20cm deep with water and the lid is placed on top of the drum. As above, 3hrs of steaming is needed to satisfy fixation requirements. A double burner LPG gas cooker guarantees adequate steam output for such a large set up. Painting parcels can contain more than one painting each so long as every painting is separated by 3 layers of newsprint. Extremely large aluminium pot plus steamer sets can be found at chinese supermarkets. These sets provide a smaller, yet functionally similar, alternative at less than NZ\$100.

GALVANISED DUCT STEAMER DESIGNS (under NZ \$100)

- These designs are based on the use of galvanised iron air conditioning duct pipe. Locally it's supplied in 3 metre lengths, with options of 200, 225, 250 and 300mm diameters, which cost up to NZ\$50 per length. 'Elbow bends' and 'stop end caps' are also available to fit all of these large diameter pipes.
- For this type of steamer, the stove is the most convenient heat source and a pot is the simplest utensil in which to boil the water.
- A length of approx. 5cm diameter aluminium tube can be used to roll up the paintings interleaved with unprinted newsprint or fine cotton cloth.
- The simplest design is as follows. It is safe for up to an 800mm length of duct pipe to sit in the pot. Above this length, the design becomes dangerous, because it would be prone to toppling and the boiling water in the pot could cause burning injuries. The precariousness of this design can be overcome if a tripod support were fixed to the top of the duct pipe near the lid. Each leg of the tripod would stand on the stove top or bench top to prevent the steamer from toppling.



- For steaming full fabric widths of approx. 1.15m the above steamer design would be too tall and unstable. The following design would be more suitable for full width fabrics.

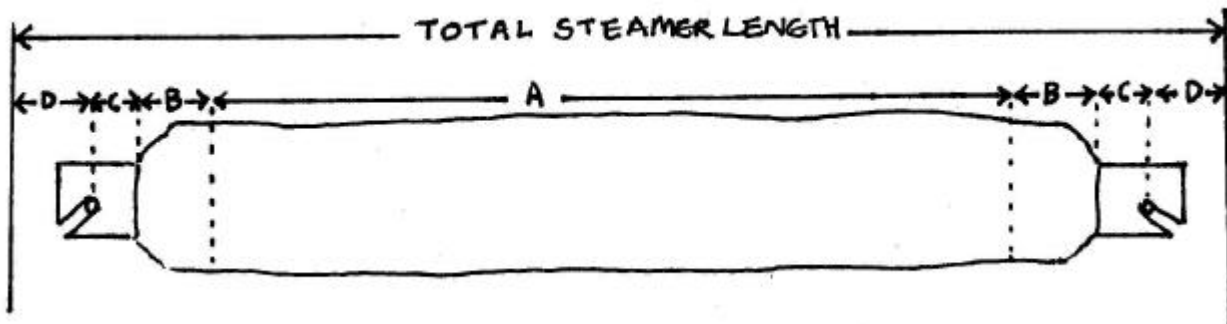


- This design would require a 'stop end cap' for an access lid and a 'right angle elbow bend' to convert the steamer from upright to horizontal as shown above.
- It is important that the lid end is raised a little above horizontal so that the steam condensate (water) reticulates back into the pot.
- The support, beneath the lid end, should be carefully made to provide a stable footing so that the steamer is not at all prone to toppling.
- As above, the same design aluminium tube roller is suitable for rolling the paintings interleaved with paper or cotton cloth.

Notes

- The above two duct pipe design steamers will allow quite a bit of steam to escape into the kitchen over the normal 3 hour steam fixation period therefore it may be wise to locate steaming operations in the back shed or garage. For this location a convenient energy heat source is an LPG gas ring burner.
- Put a full mark on the pot and make a note of how long it takes, on what stove setting, to almost boil away. You can then set your alarm clock and put it in your pocket so you'll know when the water needs topping up. Top the pot up with boiling water from the electric jug so that the steam production continuity is unbroken.

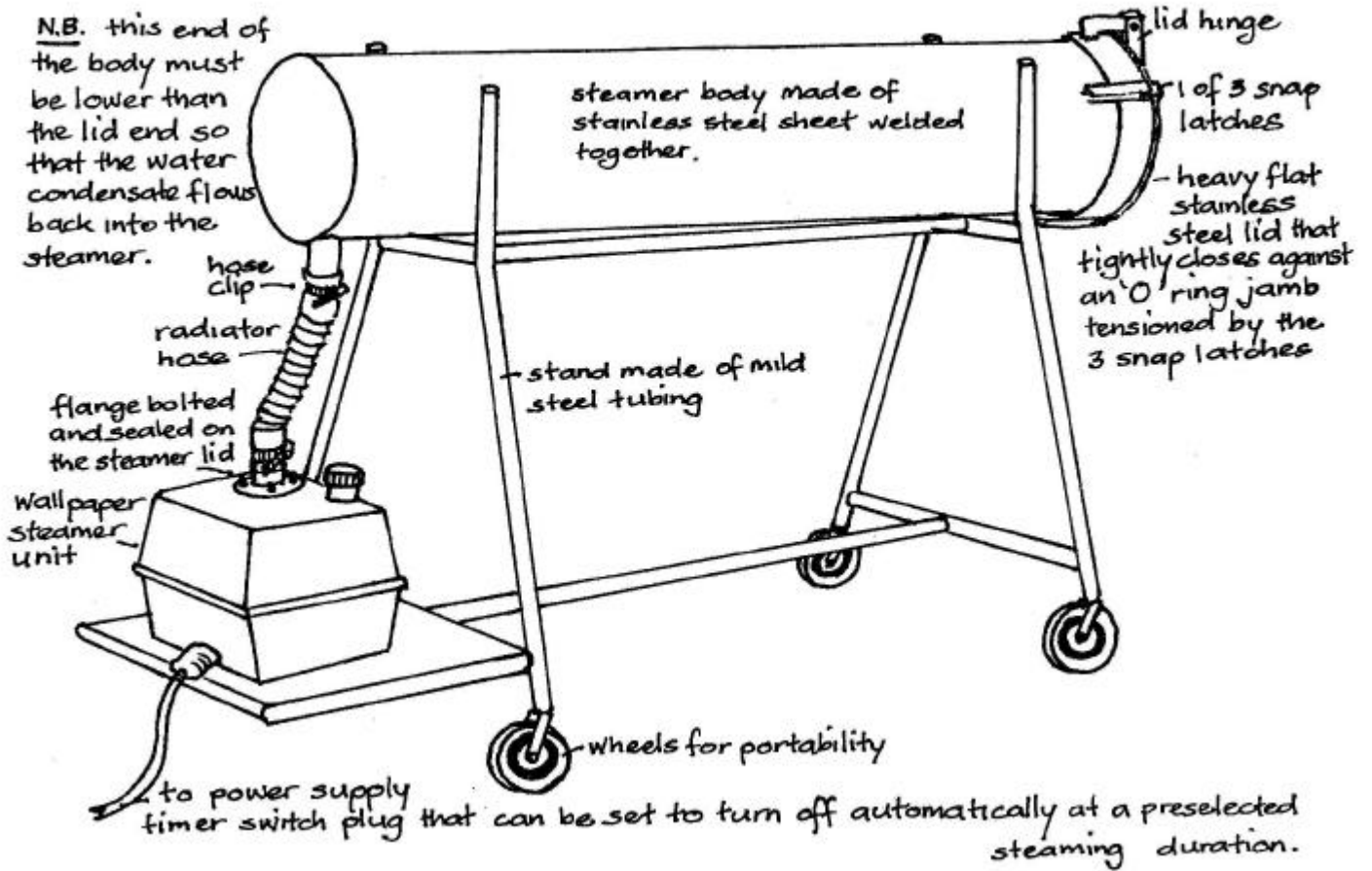
- Test run your steamer before loading it for the first time with precious paintings, so that condensation drips which could wet the roll can be isolated and fixed before they get a chance to cause unwanted watermarks on precious paintings.
- When deciding what dimensions to build your steamer instead of focusing solely on the maximum fabric width that has to fit into the steamer it is also very prudent to plan the steamer to accommodate standardly available newsprint widths (i.e. 870, 1200 & 1600 mm). It is very difficult to cut the end off a full roll of newsprint and equally painful to cut to size every length of newsprint that's utilised. While we're on the newsprint subject, I'm not convinced about the ecological thrift of newsprint as an interleaving barrier. Though I've always had the best results with paper, the fact that it can't be cleaned and reutilised when it gets too dye stained, is a bit alarmingly wasteful. People do use pure cotton fabric for this purpose, but the cotton has to be very dimensionally stable (not stretchy) and have a very soft flat weave because satin silk is particularly vulnerable to permanent marking if any irregularities are pressed against it during steaming. Cotton, of course, can be washed and reused. Anyway when deciding the length of your steamer first think of the maximum width of fabric that you wish to steam then the width of the interleaving newsprint or cotton required to generously cover that, then the roller margin (you can't always manage to get the roll rolled perfectly straight) then this all has to fit inside the steamer with the lid closed. So to calculate your steamer height or length, A, the max. fabric width + B, the newsprint or cotton overlap (at least 10 cm) + C, the roller length margin to accommodate rolling errors (at least 10 cm) + D, the margin required to close the steamer lid (10 cm) = the max. fabric width + 30 cm.



QUALITY STEAMER DESIGN

This steamer will cost about NZ\$2,000 to make. The steam source, is a wallpaper steamer normally used for removing wallpaper. 'Earlex' and 'Wagner' are good brands. They're powered by a 2,000w electric element and have a safety pressure release valve, and a boil dry element burnout protection mechanism built in. These units can be purchased from any large home decorating hardware specialist for about NZ\$180. The fabric steamer body and its stand, should be mostly made of stainless steel and this is best tackled by your local sheetmetal workshop at a cost of about NZ\$1,600. The sheetmetal shop will also have to cut a hole in the plastic lid of the wallpaper steamer and bolt a flange on it to feed the steam via a radiator hose into the stainless steamer. The unit should be made to accommodate 1600 mm newsprint and

QUALITY STEAMER



so it will handle a maximum fabric width of 1500 mm. Therefore the total steamer length will be approx. 1800 mm. It looks like this from side on.

