

How to bend copper pipework accurately and efficiently

By simply using the table below and following the accompanying instructions, with a little practice you will bend copper tube accurately with minimal wastage; ideal for college students completing the famous copper 'frame' in the workshop.

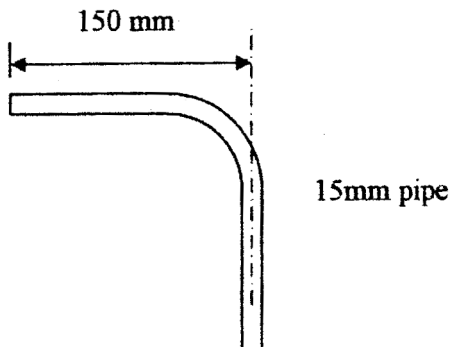
McKeown's Table

	90°	60°	45°	30°
15mm Tube	70mm	46mm	35mm	23mm
22mm Tube	100mm	66mm	50mm	33mm

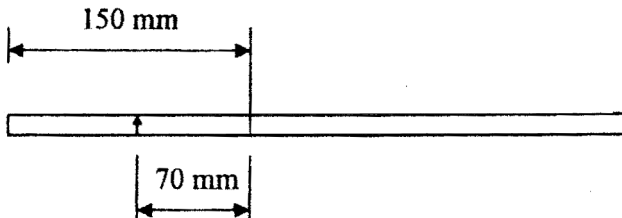
The following examples easily explain how to use the table above for bends that are commonly used in 'day to day' plumbing, heating and gas installations.

Example 1

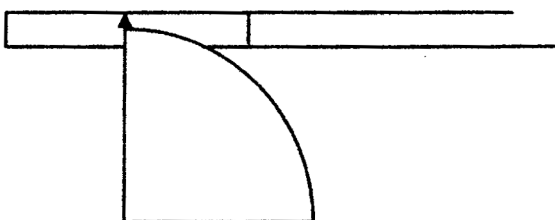
How to pull a 90° bend in 15mm copper with a centre line 150mm from the end:



Measure from the end of the pipe 150mm and mark with a pencil. Look at the table for the corresponding measurement for a 15mm 90° bend (70mm). Now measure 70mm back from your first mark and use your pencil to mark an arrow at this point:

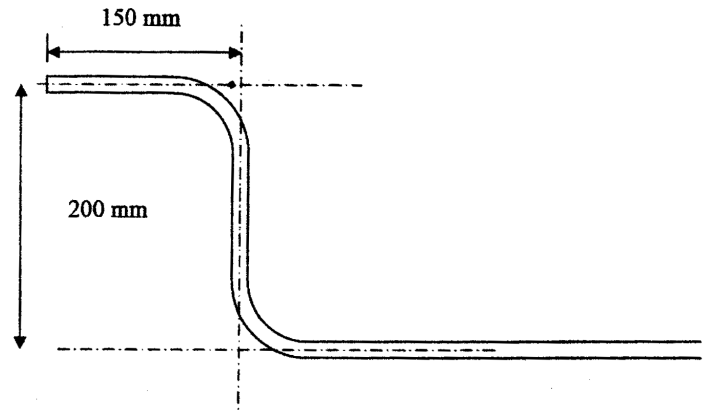


Now place the tube into the bender; aligning the arrow with the edge of the curved former:



Finally place the guide in the bender and pull the bend to 90°.

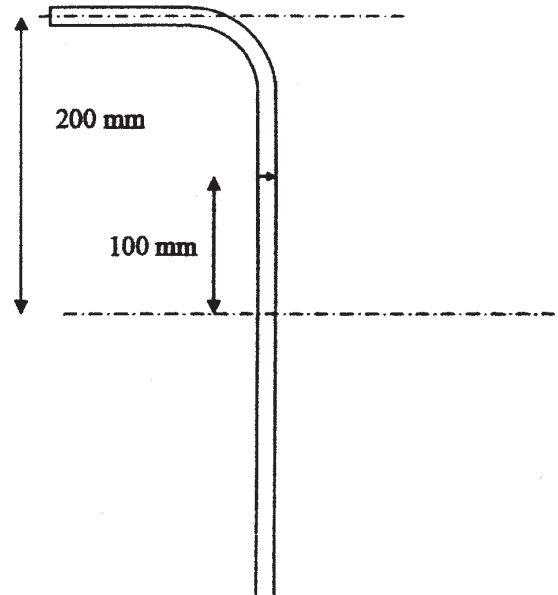
Example 2



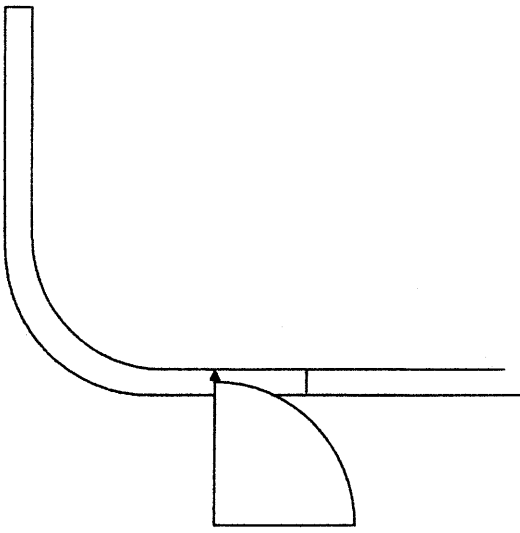
To pull the above 'set' using 22mm pipe; first measure 150mm from the end of the pipe and draw a line at this point. Look at the table for the corresponding figure for a 22mm 90° bend (100mm). Now measure 100mm back from the original mark and use your pencil to draw an arrow at this point

Next place the pipe in the bender with the arrow aligned with the edge of the curved former as before, place your guide into the bending machine and pull the bend to 90°.

After you have pulled the first bend, mark the pipe where the centreline of the required second bend would cross the pipe. Refer once again to the table and measure 100mm back from the mark and draw an arrow:

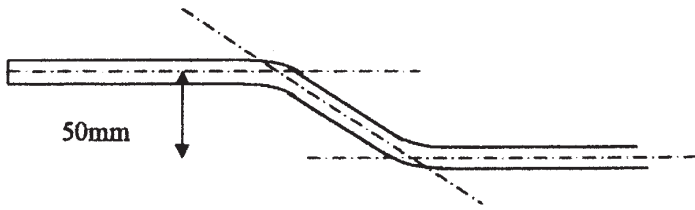


Place the pipe in the bender so that the arrow is aligned with the edge of the curved former, place your guide in the bender and pull the second bend to 90°:

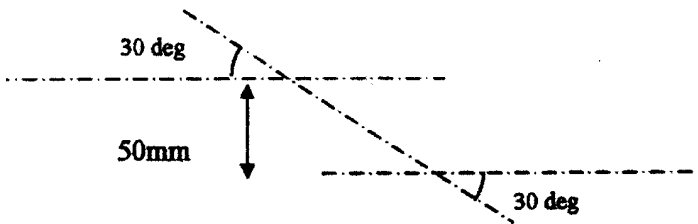


Example 3

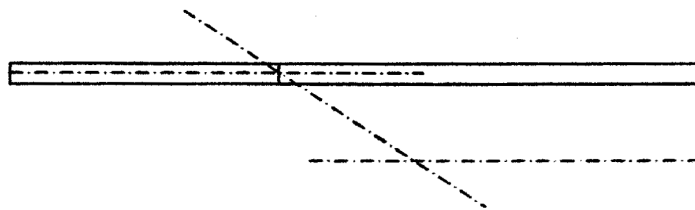
How to bend a 50mm 'off-set' at 30° in 15mm tube:



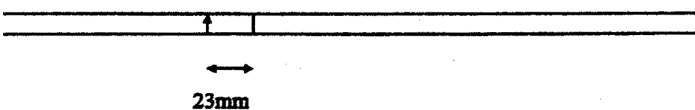
First of all; make a template of the required bend either on a work-bench or a piece of card/paper as illustrated below:



Place the pipe over the first centre line and mark the pipe where the lines intersect:

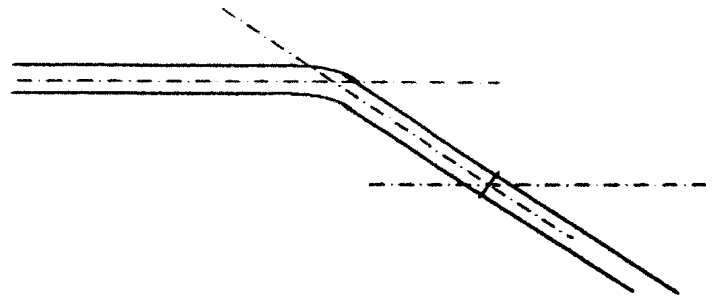


Look at the table for the corresponding figure for a 15mm 30° bend (23mm). Now measure back 23mm from your original mark and use your pencil to draw an arrow at this point:

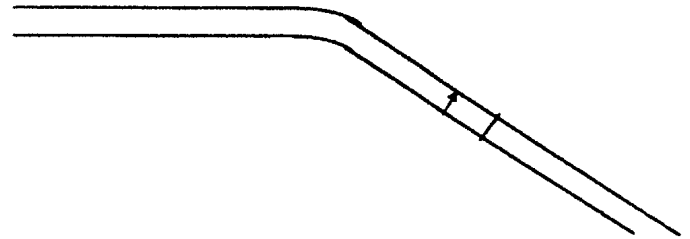


Now place the tube in the bender so that the arrow is aligned with the edge of the curved former, place the guide in the bender and pull the bend to 30°.

Lay the pipe over the template and mark a line on the pipe at the intersection of the next bend:

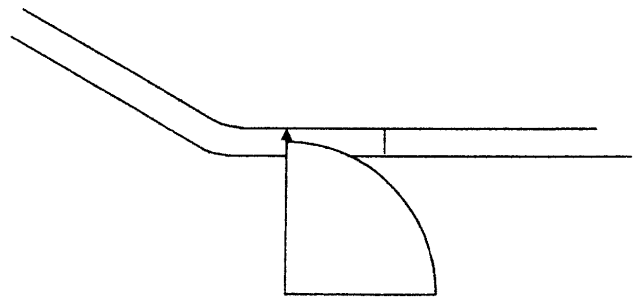


Using the same figure from the chart as before, measure 23mm back from the last mark on the pipe and mark this point



with an arrow:

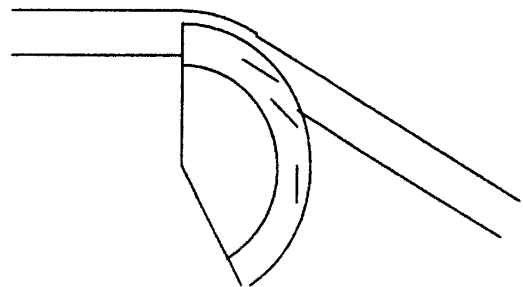
Place the pipe into the bender so that the arrow is aligned with the curved former; this is where you will



start forming the second bend:

Finally place the guide in the bender and pull the bend to 30°. Your completed bend should now correspond with the centre lines on your template.

Some bending machines have marks on the edge of the



curved former to assist with bending to 30° (top mark), 45° (middle mark) and 90° bottom mark as follows: Pull the bend so that the centre line of the pipe is in line with the mark on the former.

If you are training for a career in the plumbing and heating industry and wish to know more about membership of the CIPHE, please phone the Membership Department on 01708 463108 or email membership@ciphe.org.uk

