This technical brief describes the construction of a pipe-bending tool that you can make with only a small number of tools. It was originally built and field-tested by ITDG (now Practical Action) in Malawi, Zimbabwe and Botswana.

You will need the following equipment to produce the pipe pending tool.

- a drill,
- a welding machine
- a metal saw

Operation of the pending tool is relatively easy. The pipe that you wish to create a bend in is placed in the clamp and the two nuts are tightened to ensure that the pipe does not slip. One the pipe is clamped up the bending arm can be slipped onto the pipe and positioned appropriately. The long arm of the tool makes the job of bending the pipe easy.
The components
The components required to make the pipe-bending tool are listed below. They should be made from mild steel. Dimensions are in millimetres unless otherwise stated.

- 50 x 50 Flat bar
- Ø 8 Rod
- Ø ¾” pipe
- 50 x 5 Flat bar
- Ø 8 Rod
- 40 x 40 x 5 Angle
The manufacturing process

1. Tack weld

2. Drill through the flat bars together. dia. 8.0 mm

3. Use a nut for spacing the flat plate while tack welding them to the rod.

4. Compress the welded construction in a vice to create a curve.

Cut off excess rod
The clamp

Drill holes into the angle

Weld

Weld bolts into position

References and further reading

- How to Make a Foot-operated Workshop Drill: Manual No 2, Paul Smith, ITDG publishing
- How to Build a Folding Machine for Sheet Metal Work: Manual No 3, Rob Hitchings ITDG Publishing
- How to Make Cutting Shears for Sheet Metal Manual No 4, Rob Hitchings, ITDG Publishing
- How to Make a Pipe-bending Machine: Manual No 5, Michael Walsby, ITDG Publishing
- How to Make a Metal-bending Machine: Manual No 10, R.D. Mann, ITDG Publishing

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