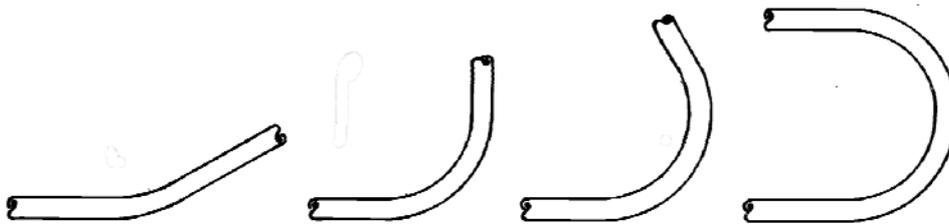




PIPE BENDING

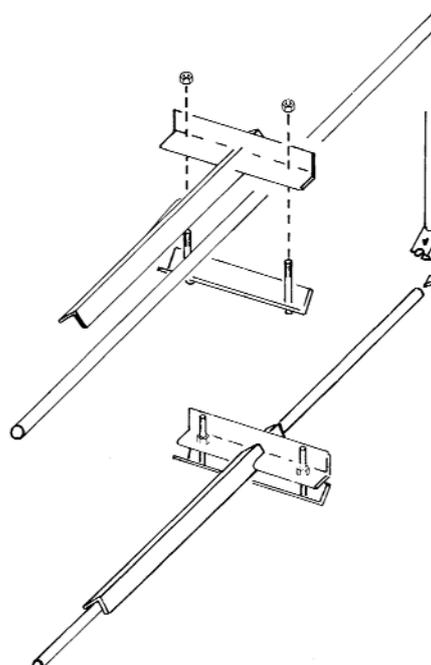
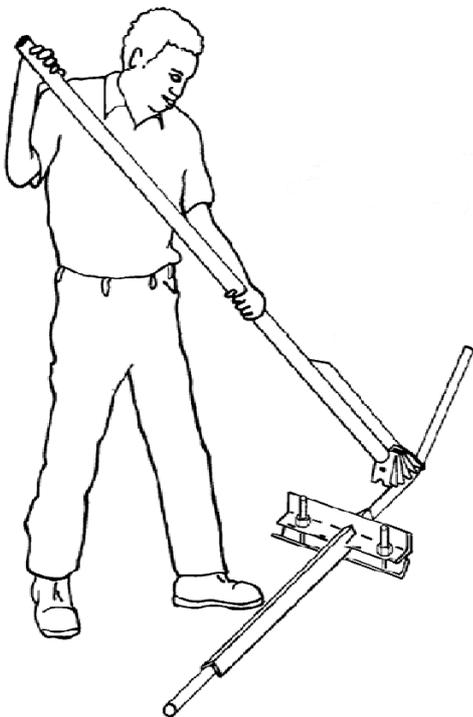
This technical brief describes the construction of a pipe-bending tool that you can make with only a small number of tools. It was originally built and field-tested by ITDG (now Practical Action) in Malawi, Zimbabwe and Botswana.



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

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

Operation of the bending 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. Once 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.

Fit the flat bar to the desired pipe

- 50 x 50 Flat bar

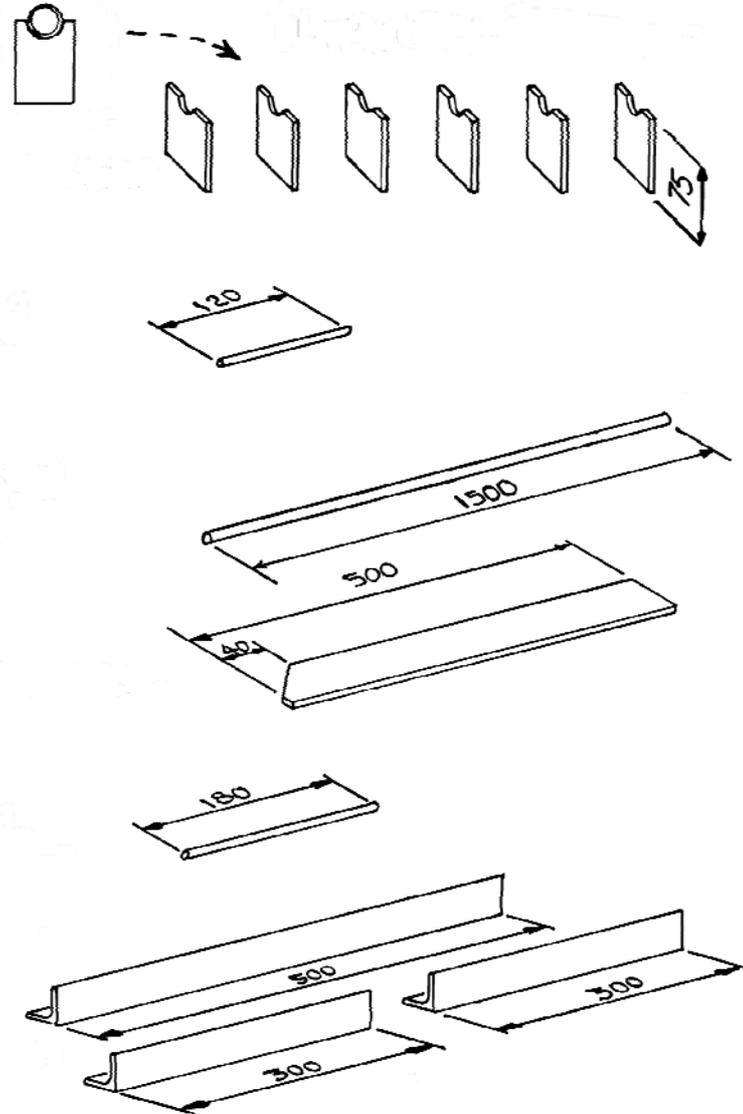
- Ø 8 Rod

- Ø ¾ " pipe

- 50 x 5 Flat bar

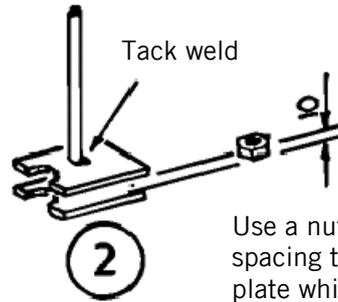
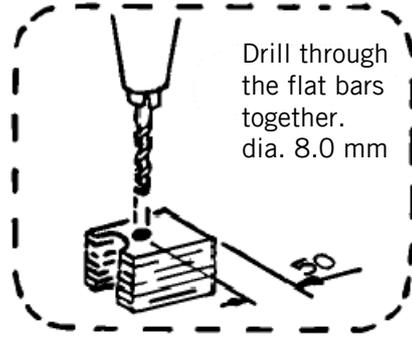
- Ø 8 Rod

- 40 x 40 x 5 Angle



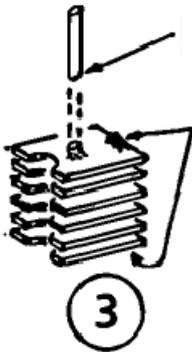
The manufacturing process

Tack weld

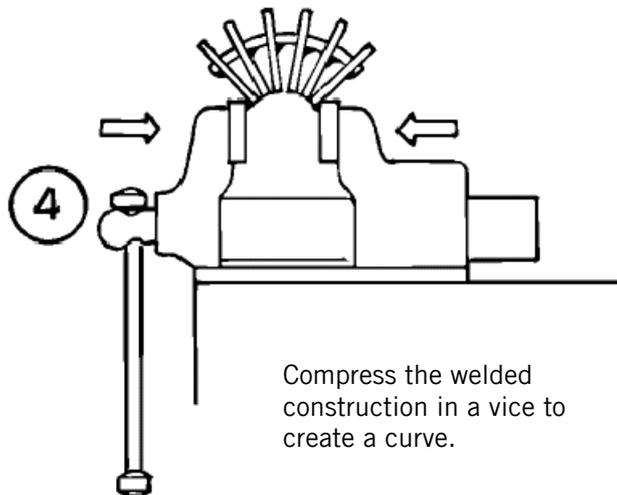
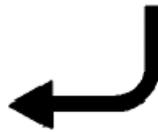


Use a nut for spacing the flat plate while tack welding them to the rod.

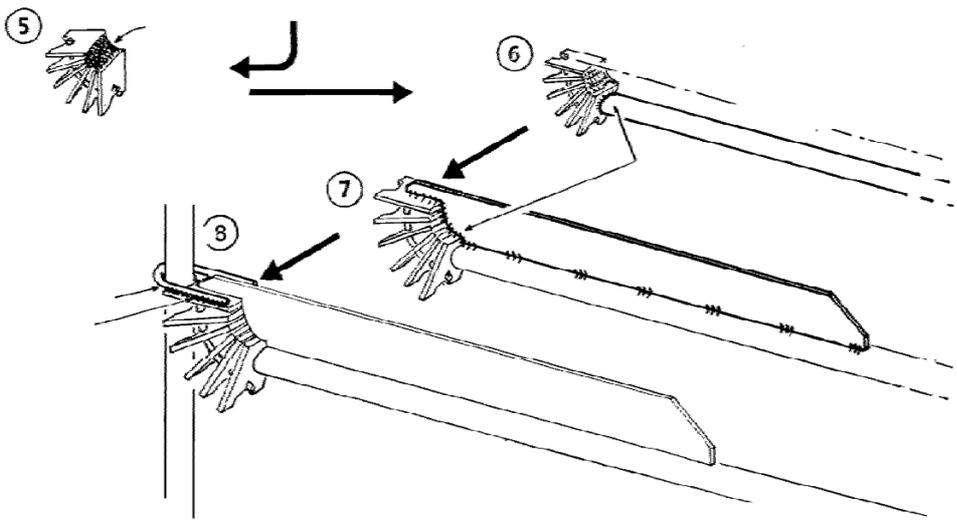
Cut off excess rod



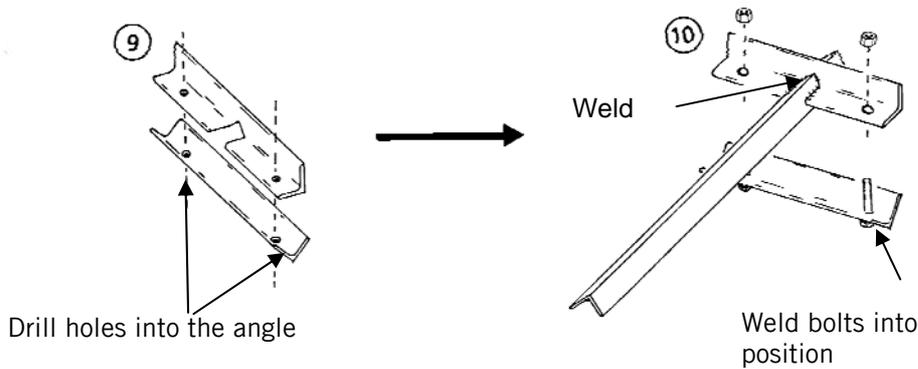
Tack weld



technical brief



The clamp



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 Hand-operated Hole-punch: Manual No 7*, Ted Stone & Jim Tanburn, ITDG Publishing
- *How to Make a Metal-bending Machine: Manual No 10*, R.D. Mann, ITDG Publishing

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Practical Action is a development charity with a difference. We know the simplest ideas can have the most profound, life-changing effect on poor people across the world. For over 40 years, we have been working closely with some of the world's poorest people - using simple technology to fight poverty and transform their lives for the better. We currently work in 15 countries in Africa, South Asia and Latin America.

technical brief