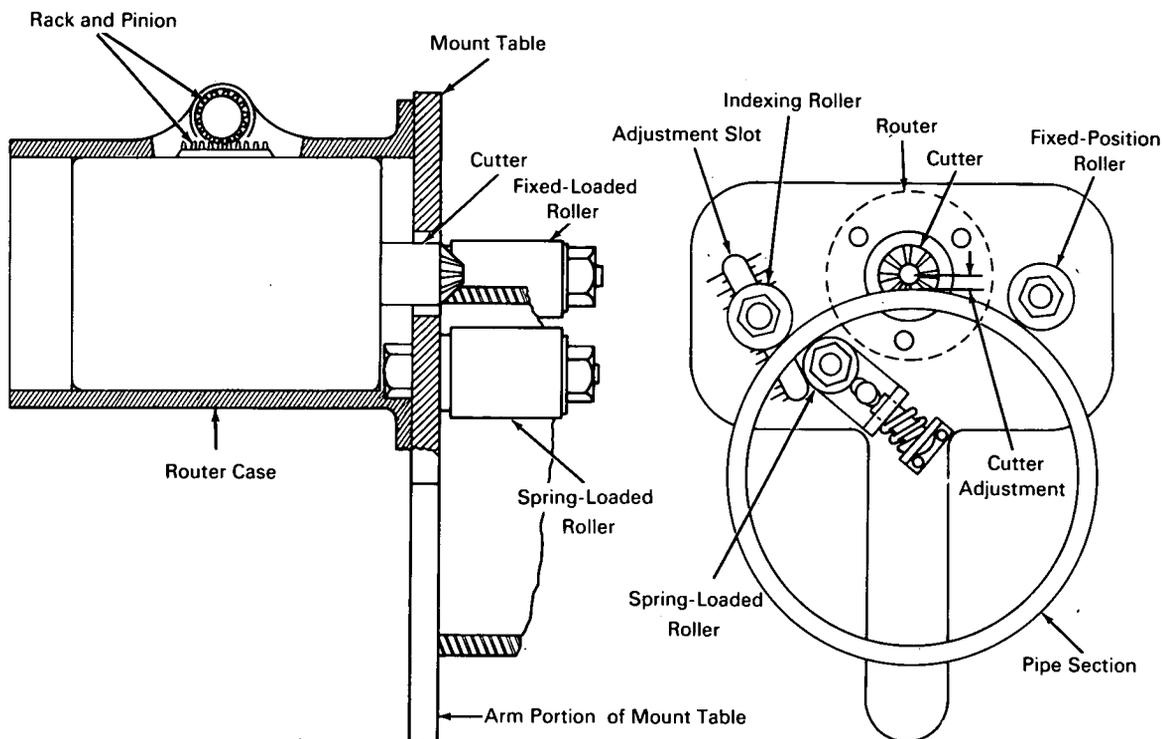


NASA TECH BRIEF



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Weld Preparation Tool for Pipes and Tubing



The problem:

To devise a tool for precise field preparation of piping or tubing for weld joining. Weld joint geometry on the ends of large diameter piping or tubing, is normally prepared by hand filing, torch cutting, grinding, or machining. These techniques require either relatively cumbersome track-guided or center-chuck-guided devices or require that the pipe section be transported to shops for machining with large equipment. Present field equipment is generally cumbersome or imprecise, and the use of shop equipment is often expensive and time consuming.

The solution:

An improved scarfing tool, consisting of a mountable, roller-guided assembly, which can convert a conventional routing machine for relatively precise field preparation of pipes for welding. This tool is inexpensive, highly portable, and designed for operation by personnel having a minimum of training and skill.

How it's done:

The innovation is shown in simplified form in the figure. The mount table and a series of rollers form

(continued overleaf)

a guiding assembly which, when attached to a conventional router or similar device, converts the tool into a pipe or tube weld-joint preparation device.

The mount table is attached by recessed screws to the router case. A fixed-position roller, bolted to the mount table, and an indexing roller, attached to the table by a shaft-bolt through an adjustment slot, are used to adjust and maintain the radial depth of rout. Use of an appropriate cutter or grinder tool, adjusted to the proper depth by the rack and pinion, permits preparation of the precise geometric configuration required. The spring-loaded roller and the arm portion of the mount table are aids to the operator in maintaining the machine in proper position during the operation.

Notes:

1. This innovation could be of interest to companies with field installations requiring the preparation of large, weld-joined piping systems such as those used in process plants, refineries, and water or petroleum pipelines.

2. No additional documentation for the invention is available.
3. Technical questions may be directed to:
Technology Utilization Officer
Kennedy Space Center
Kennedy Space Center, Florida 32899
Reference: B68-10551

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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(KSC-09955)