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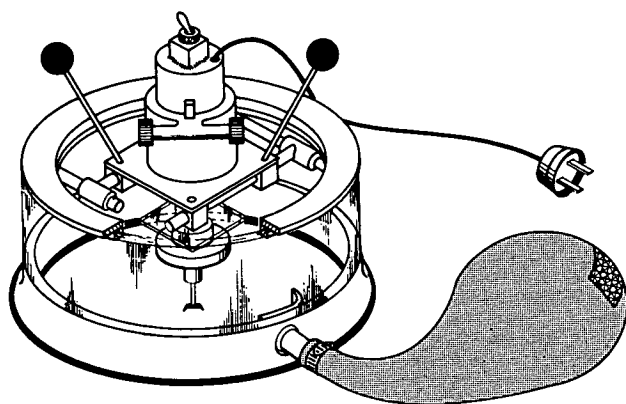
Brief 70-10313

# NASA TECH BRIEF



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## Universal Router Concept



A portable universal router, as shown in the drawing, could perform such tasks as cutting holes of large diameter and irregular shapes, machining recesses, and drilling holes with certain edge-distance limitations. Mounted perpendicularly above the workpiece is a high-speed electric router motor. The motor housing is mounted on the top of a cylindrical tool housing which rests on the workpiece. The housings are coupled so that the router may be moved in the x-y plane.

The router cutter is attached to and in line with the motor shaft. Cutter depth control is provided through a micrometer adjustment on the motor housing. Hole and recess size and configuration are controlled by a template mounted on the tool housing, and are limited only by the availability of templates and by the size of the router itself. Close tolerance control of hole dimensions, including square corners, is maintained by appropriate selection of roller size and cutting tool configuration. Rectangular and round holes may be cut without a template.

The cutting process is one of routing chips of a controlled size to assure ease of chip collection. An impeller on the router motor shaft directs the chips toward the chip collector. The router is attached to the surface of the workpiece by a suction gasket on the bottom of the cylindrical tool housing when operating in air, and by surface bonding when operating in a vacuum.

### Notes:

1. Although originally conceived as a tool for use in space, this router might also be employed as a general-purpose tool to aid in the on-site modification of large structures in construction trades or in heavy industry.
2. This development is in the conceptual stage only, and as of the date of publication of this Tech Brief, neither a model nor a prototype has been constructed.
3. No additional information is available. Specific questions, however, may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
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### 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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