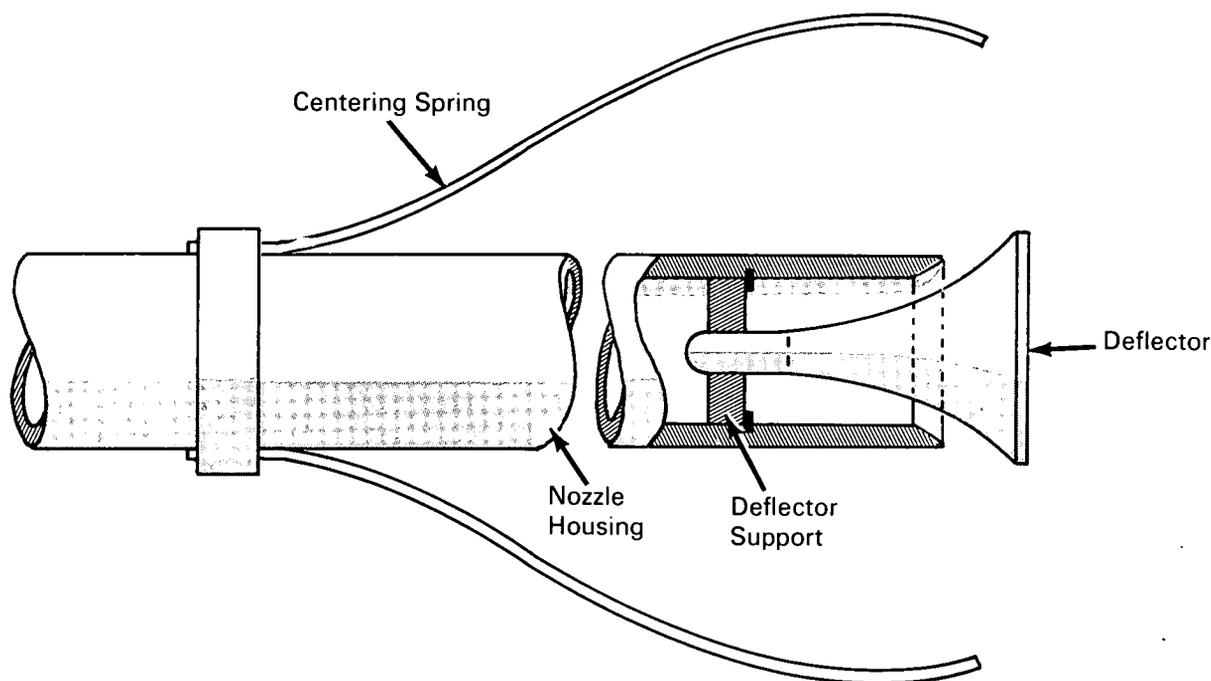


# NASA TECH BRIEF



NASA Tech Briefs are issued to summarize specific innovations derived from the U.S. space program, to encourage their commercial application. Copies are available to the public at 15 cents each from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151.

## Grit Blasting Nozzle Fabricated from Mild Tool Steel Proves Satisfactory



### The problem:

To devise a method for removing extremely tenacious and discolored scale on both the outside and inside surfaces of tubes of Inconel 718. The tubes were to be used for the distribution of gaseous oxygen (GOX). Conventional abrading techniques, such as chemical, electrochemical, and vapor blasting, proved unsatisfactory in removing the scale from the outside of the tubes. Further, no existing equipment was available to descale the inner surfaces, as the size of the tubes varied from 4-inch diameter by 2-foot elbows, to 4-inch diameter by 13-foot offset shapes.

### The solution:

Descal the tubes by dry blasting with glass beads through a nozzle that has been fabricated to fit existing equipment.

### How it's done:

The nozzle assembly, which includes a deflector and a means for centering the nozzle within the tube to be descaled, is fabricated from mild or unheat treated tool steel (conventional blast nozzles are usually made of carbide steel). The tubes are dry blast honed with glass beads of -100 mesh, +305 mesh.

(continued overleaf)

**Notes:**

1. The inside of the nozzle is coated with polyurethane and the deflector with a commercially available liquid urethane rubber to prevent their surfaces from being abraded during the blasting operation.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
Marshall Space Flight Center  
Huntsville, Alabama 35812  
Reference: B66-10597

**Patent status:**

No patent action is contemplated by NASA.

Source: J. E. McFarland and B. Turbitt  
(M-FS-1420)