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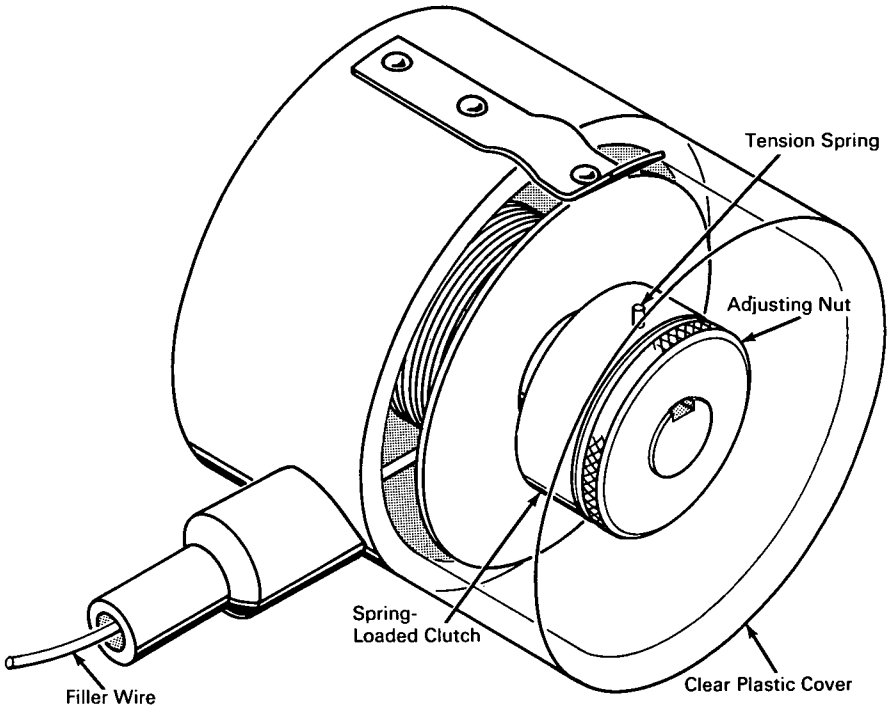
Brief 66-10236

NASA TECH BRIEF

Automatic Reel Controls Filler Wire in Welding Machines



The problem:

Present automatic welding equipment does not provide for takeup of the slack in the reel-fed filler wire when each welding operation is terminated. The springy wire frequently unwinds, snarls and slips over the reel flange and becomes fouled when the feed motor is restarted. Because of the rework caused by these problems, the quality of the weld may be affected.

The solution:

An automatic filler wire reel for use on automatic welding equipment. The reel maintains constant, adjustable tension on the wire during welding operations and rewinds the wire from the wire feed unit when welding operations are terminated.

How it's done:

A spring-loaded clutch mechanism has sufficient tension to maintain the filler wire in a taut condition during welding operations. The wire feed unit, however, has sufficient power to cause the clutch to slip and this feeds the wire smoothly to the electrode/workpiece area. Upon completion of the welding operation, the wire feed unit releases the wire and the clutch spring unloads, causing the reel to rewind

(continued overleaf)

the unused portion of filler wire. An adjusting nut in the reel permits setting of the clutch spring tension and travel limits to accommodate a range of lengths of wire plus wire feed unit power.

Notes:

1. Several of these units are presently being used on automatic welding equipment to fabricate hardware for the Apollo program.
2. This device is readily adaptable for use with existing automatic welding equipment without modifications.
3. Inquiries concerning this invention may be directed to:

   Technology Utilization Officer
   Manned Spacecraft Center
   Houston, Texas, 77058
   Reference: B66-10236

Patent status:

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

Source: Alma V. Millett
of North American Aviation, Inc.
under contract to
Manned Spacecraft Center
(MSC-416)