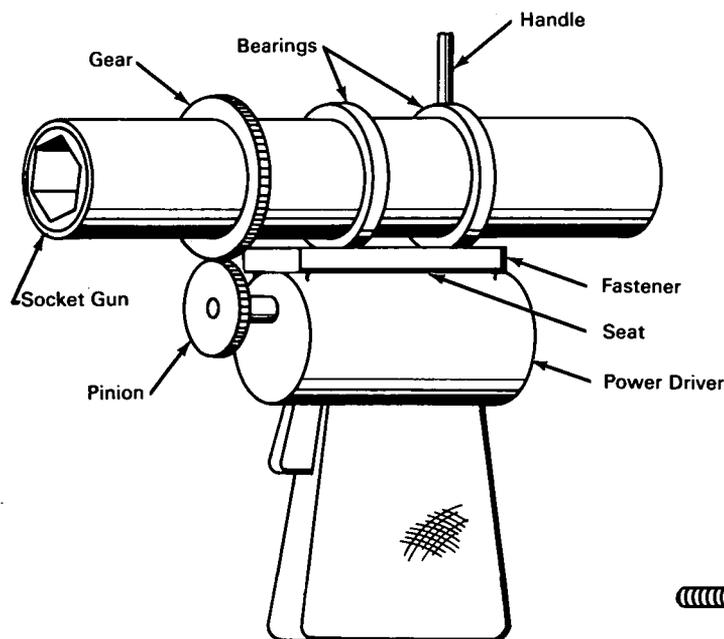


# NASA TECH BRIEF



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

## Modified Power Tool Rapidly Drives Series Torque Bolts



Series Torque Bolts



### The problem:

To drive a series of longitudinally attached torque bolts into place with greater speed than can be achieved by using hand tools or complex power tools. Series torque bolts are connected longitudinally so that when the first bolt in the series is driven into place the next bolt back in the series is engaged by the driver. When the driven bolt acquires the proper torque it is sheared from the series.

### The solution:

A feeder attachment that fits on a standard power driver with little conversion. The feeder attachment

allows the loading of a series of bolts and then positions individual bolts in the driving head for assembly as required.

### How it's done:

The feeder attachment consists of a socket gun, bearings, a fastener, and a gear. A seat attached to the power driver holds the feeder attachment firmly in place.

The pinion on the power driver meshes with the gear on the periphery of the socket gun. When the power driver is triggered, the entire socket gun rotates in the bearings and exerts a torque on the heads of the

(continued overleaf)

series-connected bolts that have been loaded into the gun. The bolt being driven into the workpiece separates from the series when the applied torque exceeds the shear strength of the joint at the driven bolt head.

The socket gun is equipped with a spring to force the bolts to the nozzle of the gun and a stop to retain the bolts until they are ready to be released.

**Notes:**

1. The socket gun may be modified to accommodate different types and sizes of bolts.

2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center  
P.O. Box 1537  
Houston, Texas, 77001  
Reference: B66-10054

**Patent status:**

1. No patent action is contemplated by NASA.

Source: North American Aviation, Inc.,  
under contract to  
Manned Spacecraft Center  
(MSC-221)