

Ratcheting Interior Snap Ring Tool

Applications:

- Installation and removal of internal (shallow or deep) snap rings
- Service repairs in electrical and mechanical systems, particularly useful in the automotive industry, air conditioning system maintenance, and for glovebox applications

Benefits:

- Easy to use and low cost
- Increases work efficiency saving time and labor
- Designed to reach deep into piping/machinery
- Automatically pinpoints snap ring holes with the turn of a wrist
- Reduces loss and/or flight of snap rings caused by tension
- Two-handed operation enables ergonomic ratcheting

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Summary:

Installation and removal of internal snap rings is often a difficult, time-consuming process. Although there are numerous devices on the market designed for applying and removing snap rings, most of them lack the capability to pinpoint the snap ring holes automatically. This can be a major problem for those working on internal snap rings, causing loss of efficiency. Some devices currently being sold are incapable of accessing internal snap rings deep in piping or machinery without considerable alteration to the housing of the machine or pipe. Additionally, many existing devices are potentially hazardous. For example, some tools can cause dangerous projectiles, pinching, and poking, each of which can be unacceptable in certain environments.

In response to these problems, Los Alamos National Laboratory mechanical technicians have developed the Ratcheting Interior Snap Ring Tool designed specifically for internal snap ring applications. This device can be used to remove internal snap rings quickly and efficiently with only a turn of the wrist. The tool is designed to be used in tight spaces with or without gloves. The two-handed ratcheting design allows for relatively effortless installation and removal of snap rings. It is designed to grab and hold a snap ring until it is mechanically released, with a touch of a button, in its proper place. The slender tubular body allows the device to fit deep into piping or machinery with ease. The design eliminates the poking and pinching hazards of generic snap ring pliers. A simple modification of the mechanical chucks allows the device to fit any size snap ring.

Development Stage:

This technology has been reduced to practice; however, further development is required to achieve a commercial-ready product.

Patent Status:

Patent pending.

Licensing Status:

This technology is available for exclusive or non-exclusive licensing.



The Ratcheting Interior Snap Ring Tool is designed for efficient installation and removal of internal snap rings.