

# Assembly Methods

## Manual Installation

Manual installation on an individual or low production basis is accomplished as follows:

- Separate the ring coils and insert one end of the ring into the groove.
- Wind the ring by pressing down around the circumference until the entire ring is inserted into the groove.

Housing:



Shaft:



## Semi-Automated and Automated Installation

For higher speed and automated assembly operations, simple tooling or assembly fixtures can be designed.

External installation on a shaft can be accomplished with a plunger and tapered plug. The plug, angled at approximately 6 degrees, is centered over the shaft end. A loose fitting plunger pushes the ring into position over the tapered plug. An arbor press or air cylinder is commonly used to automate this assembly operation.



# Assembly Methods

Internal retaining ring installation is accomplished in a similar manner. A tapered bore, which acts as a ring contracting guide, and a plunger pushes the retaining ring into position. Tooling for ring installation should have hardened working surfaces to minimise wear.



Using Screwdriver



Using Dental Pick



## Removal

Smalley Retaining Rings are supplied standard with removal notches to enable easy extraction from a groove.

The notch is provided to form a small gap between the ring end and the shaft or housing, permitting a blunt object to be inserted at the end of the ring to pry the free end out radially and up.

- Insert a screwdriver or dental pick behind the removal notch.
- Use the tool to pry out the first end of the ring.
- Manually spiral the ring around until it is free from the groove.

## Tooling

TFC's Spirolox Retaining Ring removal tool, part number XRT-107, fits between the layers of a multiple turn retaining ring in order to access the removal notch.

The end of the tool bit is slotted for the tip of the notch end to pass through. Once inserted, the ring end may be pulled out radially and up.

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