

# PORTER SPRING WINDER

## Operating Instructions

### READ CAREFULLY BEFORE OPERATING

**CAUTION:** After winding a spring, the handle must be "backed off" or reversed a number of turns before removing the spring. This is important - failure to do so will cause the spring to whiplash as the wound-in tension is suddenly released, possibly injuring the operator.

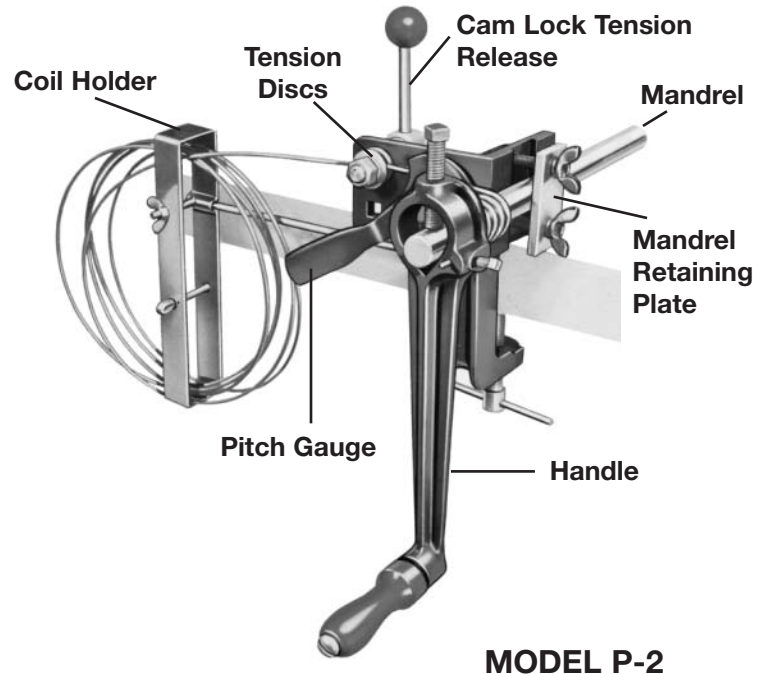
This same "wound-in" tension causes the spring diameter to enlarge as the tension is released. Therefore, select mandrel size slightly smaller than the inside diameter of the finished spring. The amount of spring-back varies with wire size and spring diameter and is best determined experimentally.

### HOW TO WIND EXTENSION SPRINGS

1. Clamp spring winder solidly to bench or in a vise.
2. Place coil of spring wire in coil holder.
3. Select mandrel of size slightly smaller than I.D. of spring as mentioned above and lock in handle with set screw. On Model P-2, use small light weight handle on mandrels up to 1/4" diameter only.
4. Insert mandrel in "V" groove and tighten retainer plate wing bolts to hold mandrel snugly, yet allowing it to rotate freely.
5. Pitch gauge is backed away from mandrel to all low clearance for wire to wind freely.
6. For left hand coil, place tension stud in top hole. Thread wire through hole in tension stud between tension discs then over mandrel. For right hand coil, place tension stud in bottom hole and feed wire under mandrel.
7. With pliers, bend wire at right angle about 1-1/2" from end and insert bent end of wire in small hole in handle and lock with set screw.
8. Adjust tension on tension discs with wrench as required. On Model P-2 cam lock tension release handle should be in the up or locked position when tension is adjusted.
9. For left hand spring, turn handle in clockwise direction to wind spring. For right hand spring, handle is turned counter-clockwise.
10. To remove spring, reverse handle a number of turns to release tension. Release set screw holding wire, loosen wing bolts holding mandrel and remove handle and mandrel assembly. Cut off spring with nipper.
11. To repeat, replace mandrel as above. Move tension release handle to down position, feed wire through and secure to handle as above. Reset tension by moving handle to up position. On utility Model P-1, loosen nut on tension stud, after noting its position, and reset tension by tightening to the same position after rethreading wire.

### HOW TO WIND COMPRESSION OR TORSION SPRINGS

1. Mount mandrel, thread wire and secure to handle as in making extension springs.
2. Before winding any coils, bring pitch gauge into contact with mandrel. Pitch, or distance between coils, is determined by the width of the tapered face of the pitch gauge bearing against the mandrel, and may be varied by rotating the pitch gauge handle. For left hand coils, pitch gauge handle is down; for right hand coils, up. Tighten pitch gauge nut.
3. Left hand springs are wound by rotating handle clockwise, right hand, counter-clockwise.



4. After spring is wound, tension is released by backing off handle a number of turns and spring is removed as in making extension springs.
5. If closed ends are required, wind at least two complete turns as in making extension springs, then reverse handle slightly to release tension. Insert pitch gauge between coils to obtain required pitch and wind spring as above. Before last two or three coils are wound, pitch gauge is disengaged and last turns are wound closed.

### GENERAL

The tension release mechanism on Model P-2 can be thrust forward when in the unlocked position to completely release tension on the wire for advancing the wire when rethreading. Tension is instantly reapplied at exactly the same setting by moving the handle to the up or locked position.

End hooks or loops can be formed on springs to 1/2" O.D. with Hook-Kon Tool. See folder enclosed. When wire is too large to cut with multi-power nippers, notch the wire with a grinding wheel and bend to break, or pre-cut wire in this manner to length necessary to wind one spring.

Flat springs may be wound by using a mandrel which is slotted to receive the end of the wire. The wire is fed between two washers of diameter slightly greater than the finished spring diameter and secured in the slot. The spring is then wound coil on coil until finished.

### LUBRICATION

A few drops of oil on the mandrel bearing surfaces before winding springs is advisable. The moving parts on the tension release mechanism and the face of the cams should be oiled occasionally, as should all screw threads.

**Order Parts from Distributor from which your Porter Spring Winder was purchased or from:**