

KEYSTONE TOOLS
625 Poppy Way
Broomfield, CO 80020
(303) 469-1220

OPERATING INSTRUCTIONS - KEYSTONE CMW-2 CLOCK MAINSPRING WINDER

MOUNTING: This tool is shipped with vise bar (Ref. #6) attached, for mounting to your vise. If you desire to mount directly to your bench, to the wall, or to a board for "C-clamping" to your bench, remove the vise bar with an Allen wrench and use the 4 mounting screws provided. **IMPORTANT:** If mounted directly to bench, wall, or board, you **MUST** provide a drilled hole directly below tool body so that anchor pins (Ref. #8 and #16) will adjust below tool. Hole should be 1/2" diameter by 1-1/4 deep (minimum). Tool may be mounted for left or right hand operation, as you prefer.

LOOP END SPRINGS: Install loop end anchor pin (Ref. #8) in body as shown in Figure 1. Insert square of your mainspring arbor into the chuck and tighten **SNUGLY BY HAND ONLY**. Be sure you grip only the square of the arbor. Easiest way to tighten (or loosen) chuck nut is to slide locking bar (Ref. #7) past the handle which effectively holds handle while tightening or loosening chuck nut. Hook loop end of mainspring over anchor pin projection (Ref. #10) with set screw (Ref. #9) **LOOSE**. Insert and hook the inner coil of mainspring onto winding arbor. (NOTE: Inner coil of mainspring should **ALWAYS** fit an arbor snugly and hook **POSITIVELY**. Close inner coil with pliers, if necessary, to insure this.) Now raise anchor pin as high as is reasonably possible and tighten set screw snugly. Wind spring in proper direction until a clamp can be placed over the spring. You may wish to lock the handle at this point to allow both hands free to place clamp. Unlock handle and let spring down into the retaining clamp.

WHILE WINDING, OR LETTING DOWN ANY SPRING, ALWAYS GUIDE THE SPRING WITH YOUR FREE HAND TO PREVENT THE SPRING FROM "BALLING OUT". Place the palm of your hand over the spring with fingers on one side, thumb on the other side. Spring will wind easily if you just guide it.

HOLE END SPRINGS: These springs are always installed in barrels. To remove from barrel, select a steel retaining ring from the nest of 11 provided. Use a size that is a little smaller (at least 2mm) than the barrel I.D. Slip the selected sleeve over the chuck with notched end of sleeve facing the spring and place as far as possible toward the handle and out of the way for now. Install hole end anchor pin (Ref. #16) in tool body as in Figure 2 and let it drop to it's limit with set screw loose. Position barrel into barrel clamp with barrel hook (that hooks the outer coil of the mainspring) in the top, or 12 o'clock position in the clamp. Tighten **ONLY SNUGLY** since gripping surface will hold without

distorting shape of barrel. It is best to grip the smooth section of barrel (not the gear teeth). Hook inner coil of spring onto spring arbor being sure it is hooked positively, chuck square portion of arbor into chuck and set barrel clamp onto the anchor pin and raise the anchor pin until arbor is CENTERED in barrel. Tighten set screw. Wind spring in proper direction, being sure that spring does not "ball out" by again using free hand and thumb to guide spring during winding. When wound tightly, slide locking bar through handle to allow both hands to insert retaining ring into barrel with notched section going past the barrel hook completely into the barrel. EXTREMELY IMPORTANT: Rotate the retaining ring IN THE DIRECTION OF THE COILED SPRING so to leave as much "tail" as possible of the outer end of the mainspring before it is unhooked. If too much tail is left, it can be easily handled. Too little will give you trouble at some time. We'd like to see a MINIMUM of 1" but prefer 1-1/2". Now unlock handle and let spring down into the retaining ring and proceed to unhook the spring from barrel. (Sometimes a small screwdriver inserted into the barrel will help.) When unhooked, remove clamp with empty barrel by lifting off from anchor pin and setting aside. Now raise anchor pin as high as is reasonably possible, hook hole end of spring over the anchor pin, unlock handle and proceed to unwind spring with your free hand to prevent "balling out". Installation is just the reverse of the above procedure.

SOME HELPFUL INFORMATION:

If you have a movement that has a broken, or damaged ratchet or clock spring and you cannot wind the spring to put a retaining clamp on the mainspring for disassembly, chuck the arbor into your mainspring winder and allow the movement plates to rotate against the body of the tool while you wind the spring so a retaining clamp can be placed over the spring for disassembly.

This tool is designed to use your arbor that is in your spring. There are many times when you will find that arbor to be difficult or impossible to use (such as Seth Thomas 124 and 124A). We provide an optional set of 4 universal arbors and adapter for these instances. We recommend them for any application where you will need a positive arbor during winding or letting down.

We have done all possible to make a safe, easy to use tool for most every application. Mainsprings are powerful and can be dangerous. PLEASE use every safety precaution to avoid injury. If there are any questions about the operation of this tool, please permit us to assist in every way.

Thank you,

KEYSTONE TOOLS

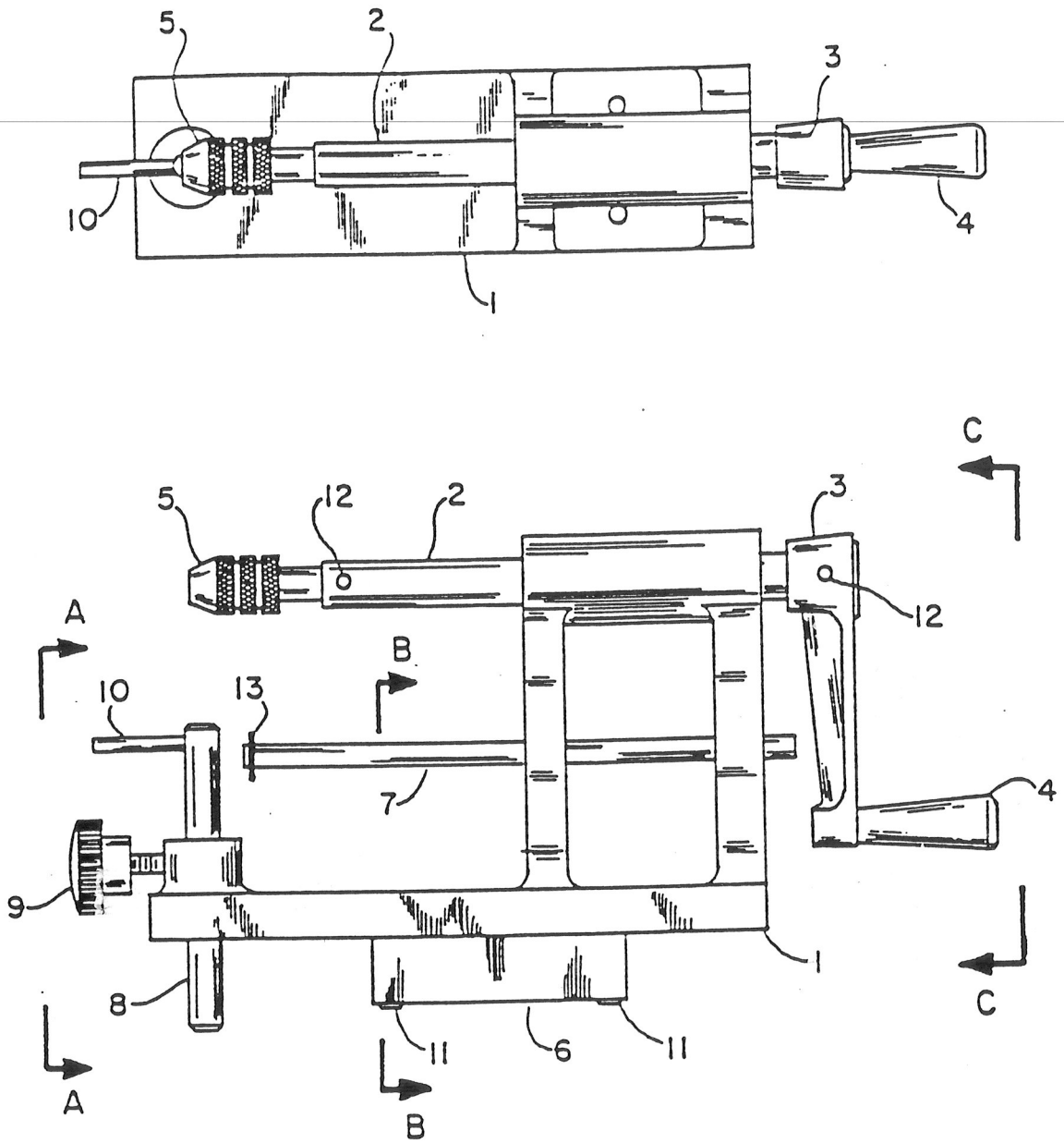
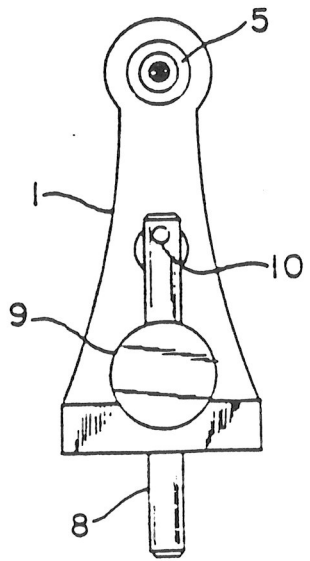
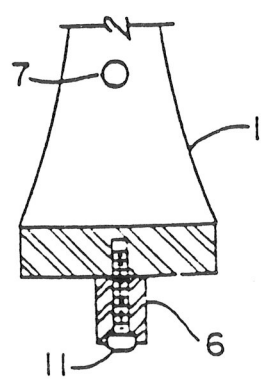


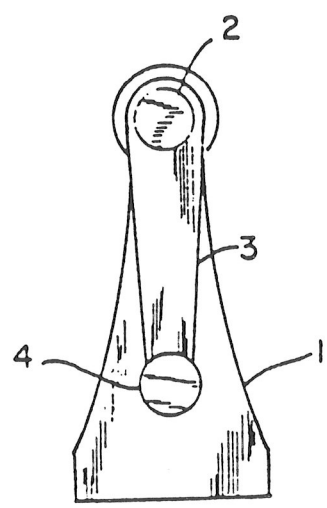
FIG. 1



VIEW A-A



SECTION B-B



VIEW C-C

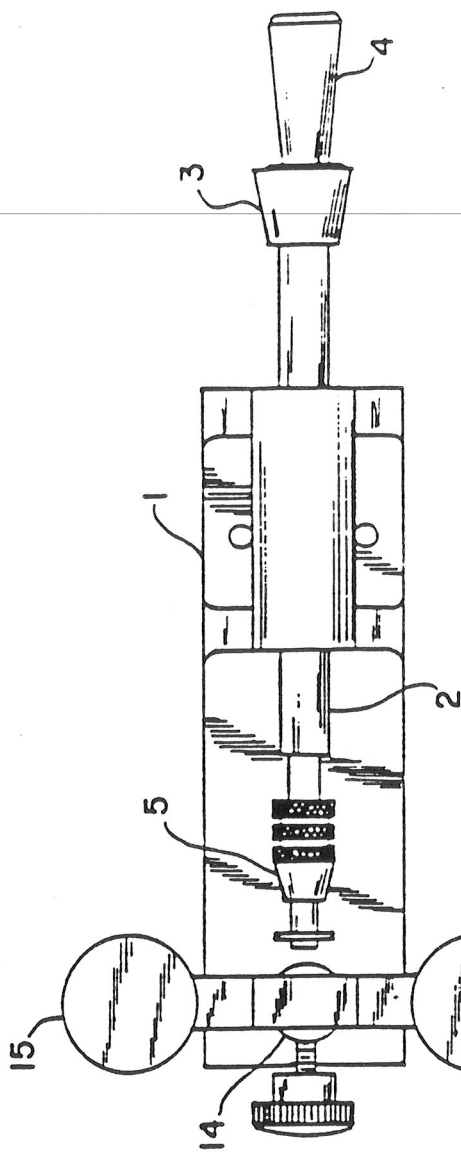
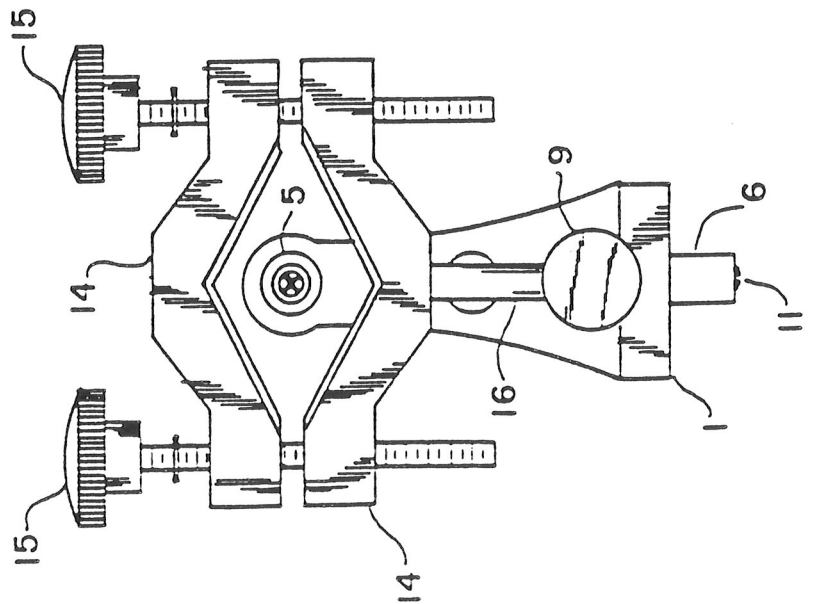
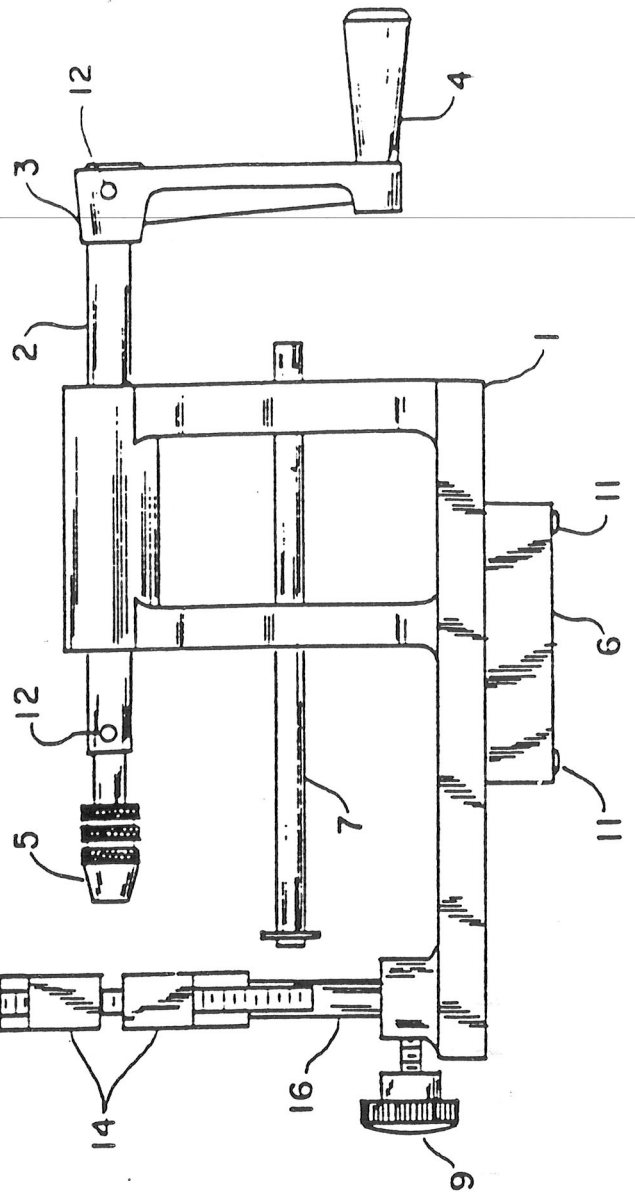


Fig. 2



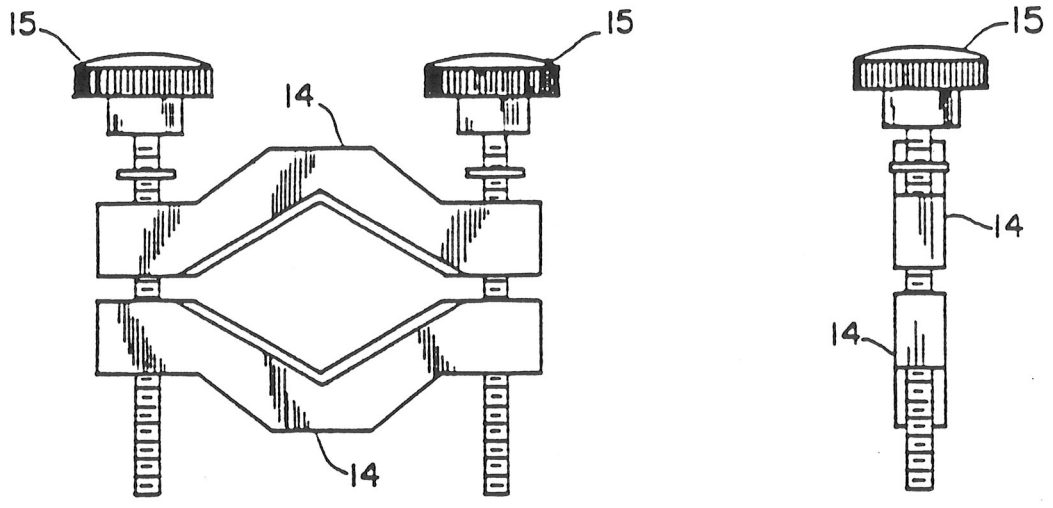
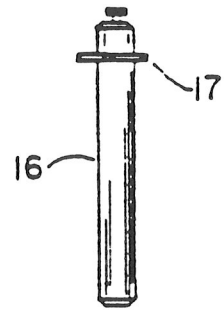
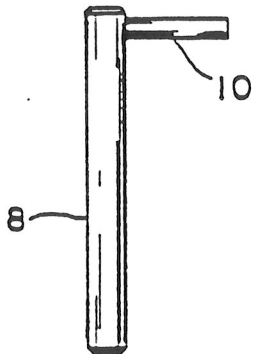
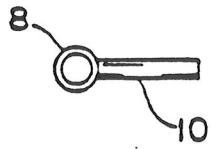
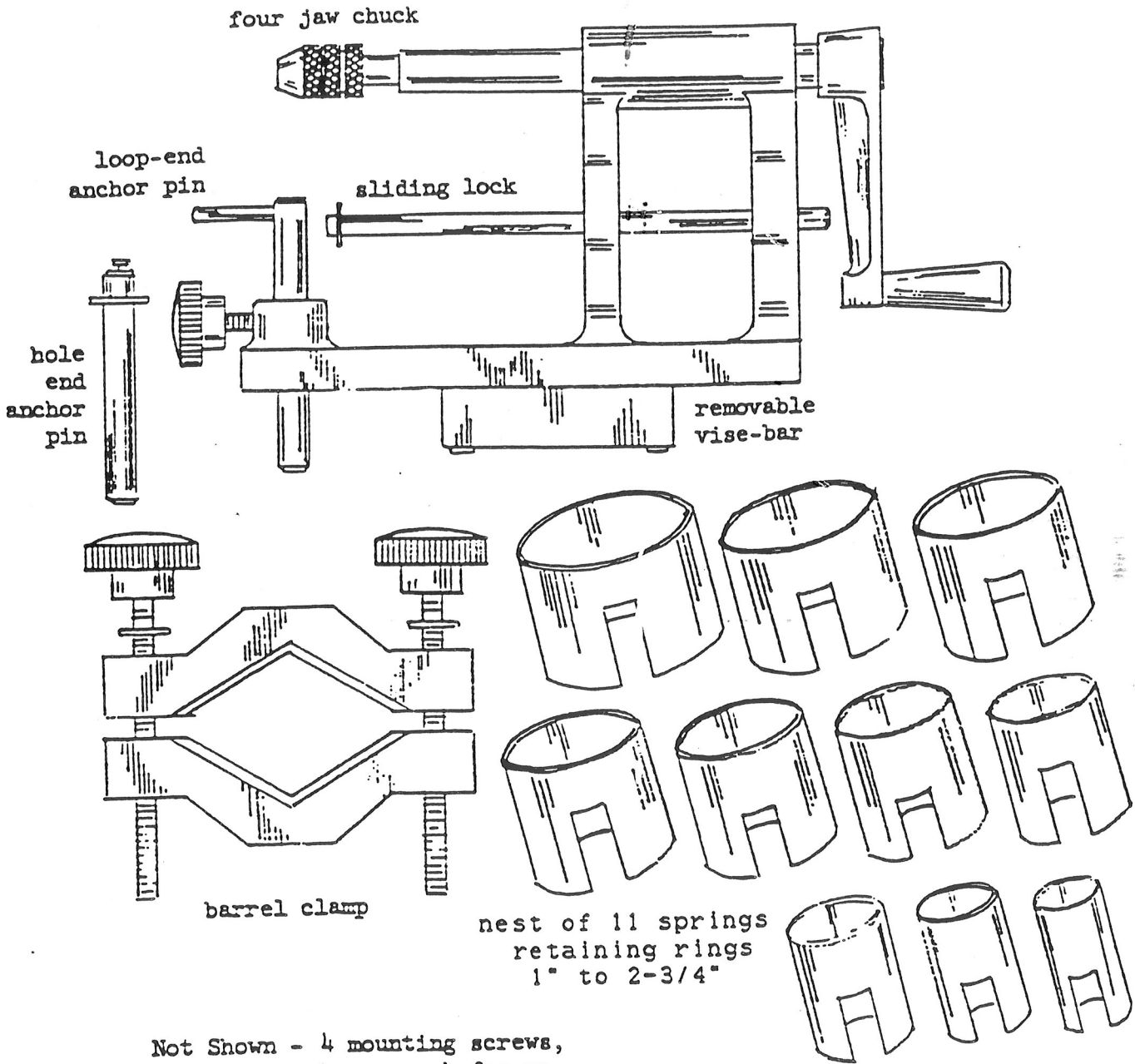


FIG. 3



KEYSTONE CLOCK MAINSPRING WINDER
MODEL CMW-2

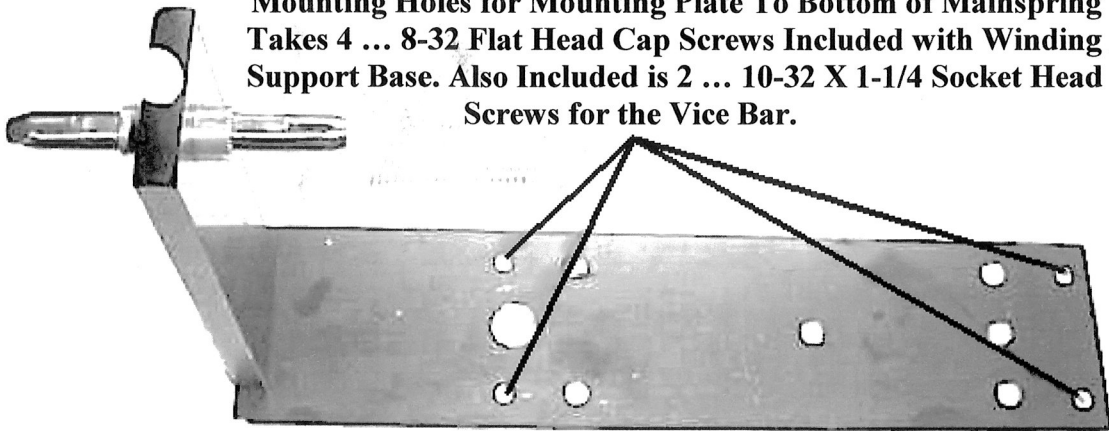


Not Shown - 4 mounting screws,
hex wrench for re-
moving vise-bar.

KEYSTONE MAINSPRING WINDER ACCESSORIE WINDING ARBOR SUPPORT

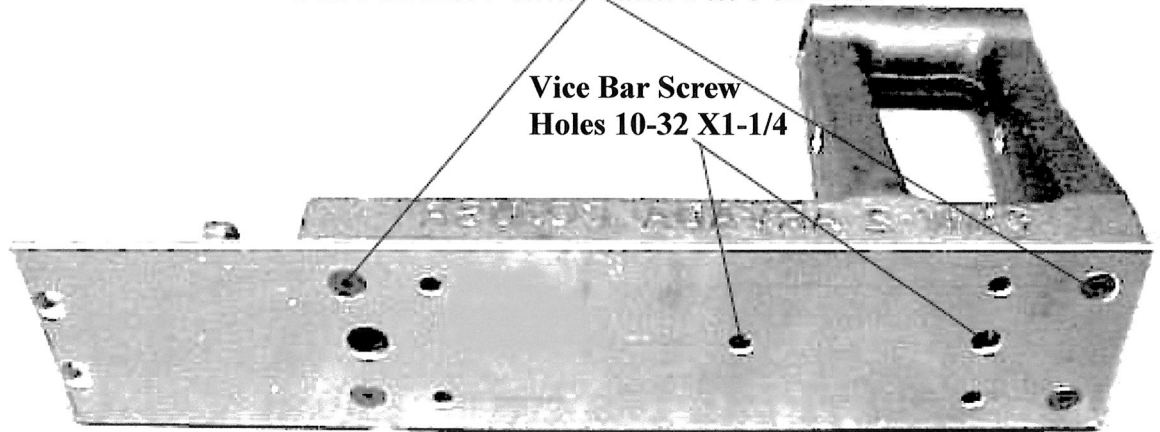
Installation Instructions For CMW-2

Mounting Holes for Mounting Plate To Bottom of Mainspring Winder
Takes 4 ... 8-32 Flat Head Cap Screws Included with Winding Arbor
Support Base. Also Included is 2 ... 10-32 X 1-1/4 Socket Head Cap
Screws for the Vice Bar.



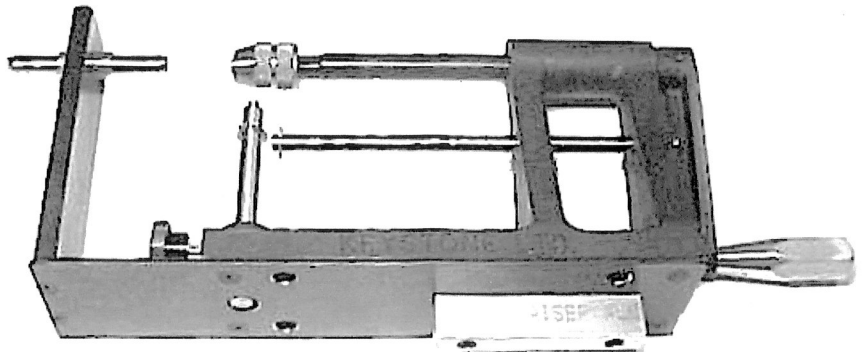
4 Mounting screws to mount to bottom of Mainspring Winder

2 ... 8-32 X 3/4" 2 ... 8-32 X 1/2"



To install Winding Arbor support base remove the Vice Bar from the bottom of Mainspring Winder Place Winding Arbor support base on bottom of winder. Reinstall the vice bar along with the support base using the 10-32 X 1-1/4" screws. Then drill the 4 mounting holes with a # 29 drill and tap holes to 8-32. The 2 holes by the Hole End and Loop end pins can be drilled all the way through the base. The 2 holes in the back of the tool going into the web part of the tool need to be about 3/4" of a inch deep.

THANK YOU
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If you have any questions.



Assembled View