



## Mini Lathe Tweaks & Enhancements Kit<sup>™</sup>

The mini lathe Tweaks & Enhancements Kit<sup>™</sup> includes some inexpensive parts that make a big difference to the use of the mini lathe. Installing all the kit components should take no more than 20 minutes.

Thumb screws for the change gear cover	These thumb screws let you remove and replace the change gear cover without using tools.
Boot for the F/O/R switch	This rubber boot prevents swarf and liquid from getting into the F/O/R toggle switch.
Hardened nuts for the 3-jaw lathe chuck	These nuts get used a lot, and tend to round over with use. The hardened nuts should last a lot longer.
Button head crank handles	Button head screws prevent sore knuckles when turning the compound rest and cross slide feed handles.
Spring for the tailstock clamp	The spring helps to keep the locking foot from turning and jamming the tailstock as you move it.
Self-locking setscrews for the gib adjustments	These setscrews have a nylon strip embedded in the threads so they won't move under vibration. You can forget the locking nuts.
Self-locking cap screws for the saddle retainers	You can make this adjustment and then forget the setscrews that are supposed to lock the adjustment.
Lead screw chip guard	Helps prevent swarf from entering the control box and shorting the motor controller.

## ***Before You Start***

1. Unplug the power cord.
2. Remove any cutting tools from the lathe.

## ***Installing the Thumb Screws for the Change Gear Cover***

1. Locate the following items in the kit:
  - Two plastic press-on knobs
  - Two plastic bushings
  - Two M5x55 socket head cap screws
2. Using an arbor press or vise, press the plastic knobs onto the socket head cap screws.
3. Slide one bushing all the way on each socket head cap screw.
4. One at a time, replace the two socket head cap screws that hold the change gear cover on with the new cap screws and knobs.

## ***Installing the Boot for the F/O/R Switch***

1. Locate the following item in the kit
  - Soft plastic boot.
2. Place the F/O/R switch in the center (off) position.
3. Remove the four Phillips head machine screws that mount the control box.
4. Remove the Phillips head machine screw and locking washer that connects the F/O/R switch ground wire to the headstock.
5. Turn the control box around so you can see inside it.
6. While holding the body of the F/O/R switch, remove the nut from the top of the F/O/R switch.
7. Replace the nut with the soft plastic boot.
8. Reconnect the ground wire to the headstock using the Phillips head machine screw and locking washer.
9. Reinstall the control box using the four Phillips head machine screws.

## ***Installing the Hardened Nuts for the 3-Jaw Lathe Chuck***

1. Locate the following items in the kit:
  - Three black M6 hex nuts
2. One at a time, replace the three nuts that retain the lathe chuck to the spindle flange.

If the studs are so long that the headstock prevents removal of the nuts, loosen the other two nuts to allow the chuck to move away from the spindle flange.

The easiest way to replace the nuts is to use the index finger of both hands.

### ***Installing the Button Head Crank Handle Screws***

1. Locate the following items in the kit:
  - Two M6x8 button head cap screws.
2. Replace the socket head cap screw that retains the compound rest crank handle.
3. Replace the socket head cap screw that retains the cross slide crank handle.

### ***Installing the Tailstock Clamp Spring***

4. Locate the following item in the kit:
  - Compression spring
5. Remove the nut from the tailstock clamp. The tailstock clamp will fall free.
6. Place the spring over the shank of the tailstock clamp.
7. Replace the tailstock clamp. The spring will extend into the tailstock casting.
8. Replace the nut on the tailstock clamp.

### ***Installing the Self-Locking Setscrews for the Cross Slide Gib***

1. Locate the following items in the kit:
  - Three (out of six) M4x14 dog point setscrews
2. Remove the three lock nuts on the side of the cross slide.
3. One at a time, replace the old setscrews with the self-locking setscrews from the kit.
4. Snug each setscrew equally. This will lock the cross slide in position.
5. Loosen each setscrew 1/8 turn to allow the cross slide to move.
6. Test by turning the handle. Loosen or tighten all the setscrews the same amount until the cross slide moves freely, but without play in the dovetail.
7. Optionally, you can reinstall the lock nuts.

### ***Installing the Self-Locking Setscrews for the Compound Rest Gib***

1. Locate the following items in the kit:
  - Three (out of six) M4x14 dog point setscrews.
2. Remove the three lock nuts on the side of the compound rest.
3. One at a time, replace the old setscrews with the self-locking setscrews from the kit.
4. Snug each setscrew equally. This will lock the compound rest in position.
5. Loosen each setscrew 1/8 turn to allow the compound rest to move.
6. Test by turning the handle. Loosen or tighten all the setscrews the same amount until the compound rest moves freely, but without play in the dovetail.
7. Optionally, you can reinstall the lock nuts.

### ***Installing the Self-Locking Cap Screws for the Saddle Retainers***

1. Locate the following items in the kit:

- Six M6x12 self-locking socket head cap screws.
2. Remove the right lead screw mounting bracket.
  3. Disconnect the apron by removing the two socket head cap screws through the front of the carriage.
  4. Slide the apron to the right and off the lead screw.
  5. Loosen all the fasteners on both retainers.
  6. One at a time, replace the old socket head cap screws with the self-locking socket head cap screws from the kit.
  7. Snug the socket head cap screws so the carriage can move, but without play.
  8. Optionally, you can remove or snug the setscrews. Do not over tighten or you might break the retainers.
  9. If you are using the setscrews, while holding the setscrews from turning, tighten the lock nuts.
  10. Replace the apron.
  11. Replace the right lead screw mounting bracket.

### *Install the Lead Screw Chip Guard*

1. Locate the following item in the kit:
  - Lead screw chip guard
2. Remove the four Allen head screws that secure the control box to the front of the lathe. There are two at the top and two at the bottom of the control box.
3. Place the lead screw chip guard around the lead screw adjacent to the control box.
4. Pull the control box an inch or two out from the headstock.
5. Move the lead screw chip guard in line with the side of the control box.
6. Push the control box back against the headstock. Be sure the side of the control box goes into the groove in the edge of the lead screw chip guard.
7. Replace the four screws to secure the control box.