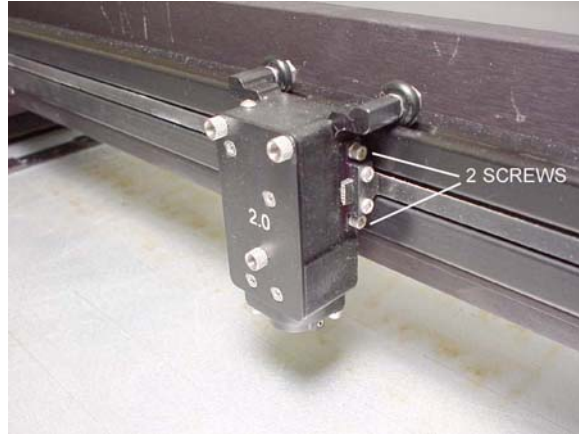
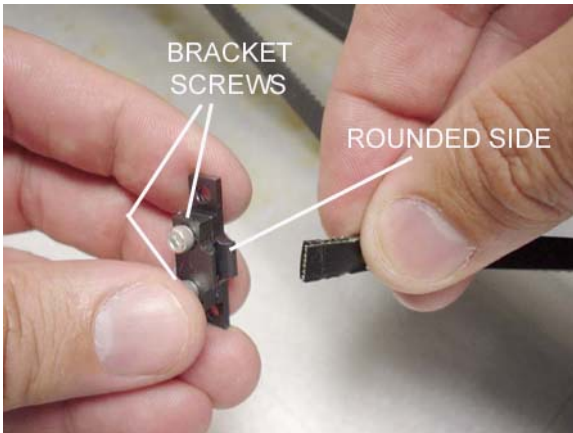


Replacing the X-axis belt and motor drive gear M Class systems

1. Turn machine OFF.
2. Remove #2 mirror cover by removing the thumbscrew and sliding the cover to the right and up.



3. Back off the tension set screw 1 ½ turns (this will partially release the tension on the belt). Do not remove the screw completely.
4. Loosen, do not remove, the 2 screws that attach to the bracket that holds the ends of the belt together. Slide the bracket off of the end of the belt. **DO NOT PULL THE BELT OUT OF THE X-AXIS RAIL AT THIS TIME. JUST LEAVE IT HANGING. THE PURPOSE IS TO RELEASE THE BELT TENSION COMPLETELY. THIS WILL ALLOW US TO REMOVE THE MOTOR HOUSING IN THE NEXT STEP.**



5. Detach the flexible cable from the X-axis motor housing by pressing your fingertip on the underside of the cable, depress the locking tab, and gently pull the cable out. Be careful not to make contact with the Y-axis Home Sensor, it is made out of plastic and can easily break. Remove one of the (2) mounting screws with a philips screwdriver. It is a tight fit back there and is very dark so you may need to use a flashlight to see it.
6. Using a stapler, attach one end of the old belt to one end of the new belt. Do not overlap the belt and make sure that the teeth are in the same direction.

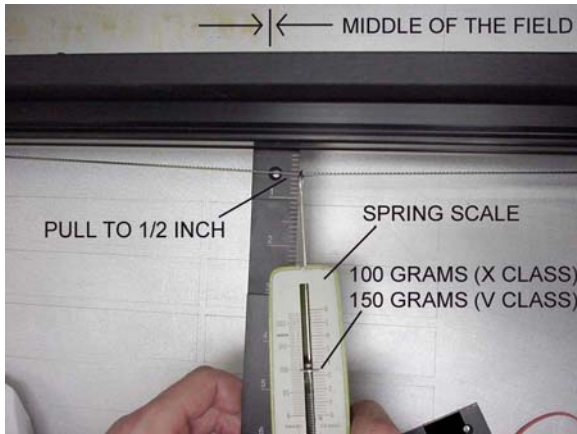
7. Slowly pull the other end of the old belt, allowing the new belt to be pulled through the inside of the X-axis arm. Make sure that you do not twist the belt going through the rail. The teeth of the belt should be facing the inside.



8. Once the new belt is completely through the X-axis rail, remove the staple and discard the old belt. Leave the new belt hanging at this time.
9. Re-attach the belt clamp to the ends of the belt. Make sure that the rounded side of the clamp faces inwards. Gently pull the belt through the clamp until the slack in the belt is reduced. Leave the belt slightly loose because we will tension the belt by adjusting the setscrew on the tensioner bracket on the left side of the X-axis rail. Now, tighten down the screws on the clamp. **DO NOT TRIM OFF THE EXCESS BELT AT THIS TIME, WE WILL DO THAT LATER.**



10. For the next step, you will need a spring scale and a ruler in which the end of the ruler is actually the "0" point. Some rulers "0" point is offset from the end so you would not want to use that kind of ruler.
11. Push the focus carriage all the way to the left and push the belt clamp all the way to the right, on the X-axis rail. Place the end of the ruler up against the middle of the X-axis arm (NOT inside the belt groove). Hook the spring scale onto the middle of the belt and pull the scale until you reach 1/2 inch. You should read 100 grams (X Class) or 150 grams (V Class). We are expecting you to be loose at this point so you will probably read less than what is required.



12. To tighten the belt, slowly tighten the setscrew on the tensioning bracket (the one that we loosened earlier) and keep re-checking the scale until you have the proper tension. After proper tension is achieved, tighten down the (3) tensioning bracket mounting screws and re-check the tension to make sure that it has not changed.
13. Using scissors, trim off the excess belt material but leave at least 1/4 inch of belt protruding out of the belt clamp. DO NOT trim the belt flush with the clamp. Although this may look cleaner, trimming it flush will eventually cause the belt to slip out of the clamp and would require the replacement of the entire belt (refer to photo above).
14. Re-attach the belt clamp to the side of the focus carriage.
15. Re-install the #2 mirror cover and thumbscrew.
16. X-axis belt and drive gear replacement is now complete.

If you have any questions, please contact our service department at:

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