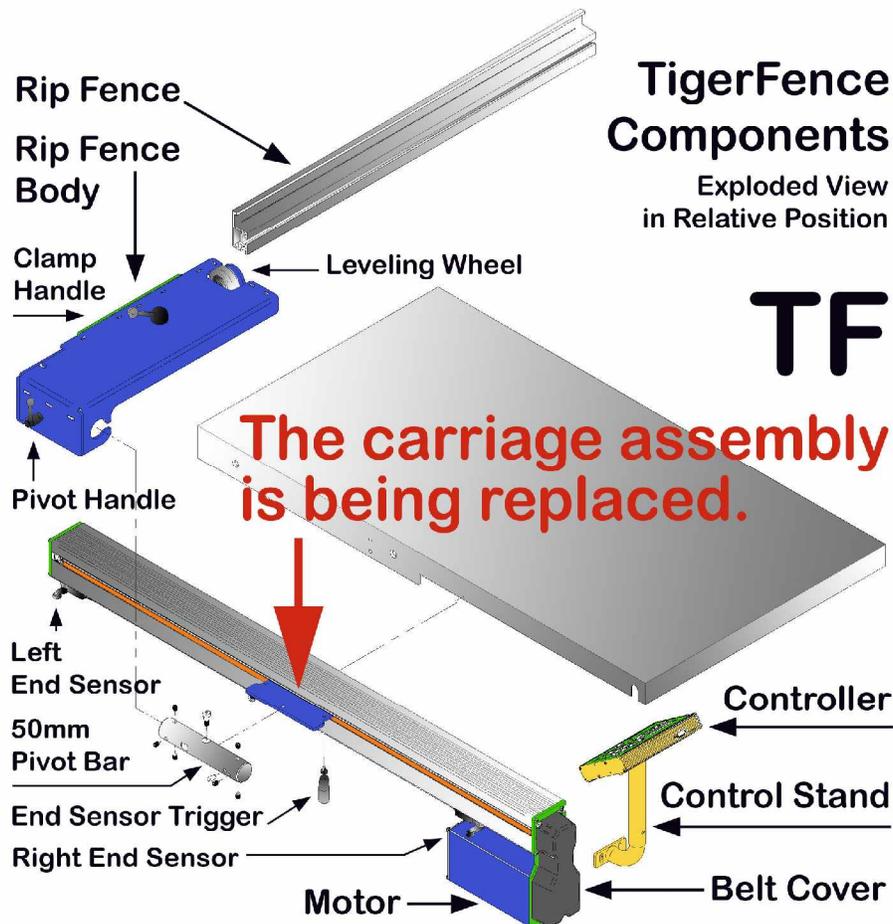


TigerFence®

Carriage Assembly Replacement

October 2007

Software Version 5.0 and higher



IMPORTANT! TigerStop must be enabled with a code that must be obtained from TigerStop Customer Service. If you will be installing your unit on a weekend or after business hours, be sure to get your enable code before 4 p.m. PST!

Contact information:

TigerStop LLC, Assembly Plant, 12909 NE 95th St., Vancouver, WA 98682

Tel: 360 448-6138 • Fax: 360 260-0755 • Website: www.tigerstop.com • Email: service@tigerstop.com

Safety First!

IMPORTANT SAFETY INFORMATION. READ ALL WARNINGS BEFORE OPERATING THIS PRODUCT.



GENERAL WARNINGS

WARNING: Installation of your TigerStop Product must be done by a person trained in the safe design and installation of automation products, and in the safe operation of power equipment. Ensure that such installation meets all legally required safety requirements and guidelines, and that proper guarding and safety devices are provided on all sides of the equipment to preclude unintended access during operation. Consult with and follow the recommendations of a qualified safety engineer.

WARNING: TigerStop Products are components intended for use in conjunction with potentially dangerous machinery. The use of TigerStop Products does not make other machinery safe. TigerStop Products are not intended to substitute, in any manner, for safe operating practices in general, or for safety features present in other machines designed to make those machines as safe as possible. **TIGERSTOP PRODUCTS, IF USED OR INSTALLED IMPROPERLY, MAY CAUSE PERSONAL INJURY OR DEATH AND SHOULD ONLY BE OPERATED BY PERSONS TRAINED IN THEIR SAFE OPERATING PROCEDURES.** Illustrations of TigerStop Products in use do not show, and are not intended to show, all safety features and practices necessary for their safe operation.



INSTALLATION WARNINGS

WARNING: TigerStop Products must be installed in accordance with all local, state, and federal regulations. Only personnel properly trained in the safe design and installation of automation machinery and related power equipment should install TigerStop Products onto other equipment, to ensure a safe and proper work station. TigerStop Products should not be operated without proper training, both in the operation of TigerStop Products, and in the operation of related equipment.

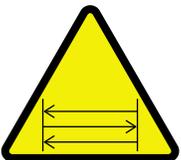
IMPORTANT CAUTION:

The motor box (compartment) contains DC voltage with potentially FATAL amperage. NEVER attempt any unauthorized actions inside the motor box.



INTERCONNECTS

WARNING: Using a TigerStop interconnect does not relieve you of the responsibility for making sure that your saw or other tool has all the necessary safety equipment in place. All installations must meet all legally required safety requirements and guidelines. Installation and training should be done following the recommendations of a qualified safety engineer.



OPERATION

DANGER: This machine can start, move and stop automatically. Keep hands and loose clothing clear of moving parts while operating. Moving parts can crush and cut. When used with a saw or other cutting equipment, bodily injury and death may result if operated without safety guards on all machines. Do not operate with guards removed. Operators must wear adequate eye and ear protection.

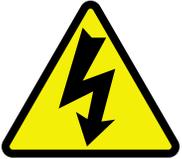


DANGER! Don't get pinched by the push feeder. Keep your hands away when in motion!

IMPORTANT SAFETY INFORMATION. READ ALL WARNINGS BEFORE OPERATING THIS PRODUCT.



Keep the work area clean and well lighted to avoid accidental injury.



Do not use TigerStop machines in a dangerous environment. Using power tools in damp or wet locations or in rain can cause shock or electrocution.



Do not operate near flammable liquids or in gaseous or explosive atmospheres!



Wear proper apparel, no loose clothes, long hair or jewelry which could get pulled into moving machinery or materials.
Wear non slip footwear, safety glasses, ear protection and a dust mask.



Use only 3- wire extension cords that have 3-prong grounding type plugs and 3-pole receptacles that accept the tools plug for 120VAC. Use only 5-wire cords and plugs when using 3 phase.



Do not open motor compartment or controller keypad. DC Voltage with potentially FATAL amperage!
Disconnect power before servicing. No user-serviceable parts inside.

DO NOT operate this or any machine under the influence of drugs or alcohol!



No one should operate this machine except for fully qualified personnel.
Read the manual!

TigerFence Carriage Replacement

The TigerFence carriage assembly can easily be replaced by following the instructions in this booklet. TigerFence must be removed from your saw.

Refer to TigerFence Installation & Basic Setup when you reinstall the machine, if necessary.

Almost all the components and fasteners you will remove in the process of replacing the carriage assembly will be used again. Do NOT discard them!

1. Get your tools ready

To replace the TigerFence carriage you will need these tools (not supplied by TigerStop):

- power drill/driver 
- nut driver bit: 7/16" 
- hex wrenches: 3mm, 3/32", 1/8", 5/32", 5mm 
- nut drivers: 8mm, 3/8", 7/16" 
- Torx driver or driver bit: T25 
- box wrench: 7/16" 
- open end wrench: 1/2" 
- pliers 
- dead blow mallet 

2. Uninstall TigerFence from your saw

- Power off your TigerFence, and unplug it from power supply.
- Remove the rip fence body, the 50mm pivot bar and the end sensor trigger.
- Carefully remove TigerFence from your saw.
- Keep track of all fasteners, etc., for re-installation on your saw.

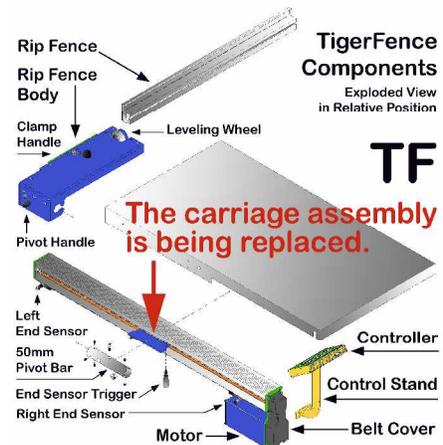
3. Disassemble the motor box



After you uninstall TigerFence from your saw, place it on a sturdy work surface, raising it up on wooden blocks. ►



Carefully pull on the end sensor cables at the strain reliefs to make room to work, but do **not** pull them all the way out. ►



TigerFence Carriage Replacement



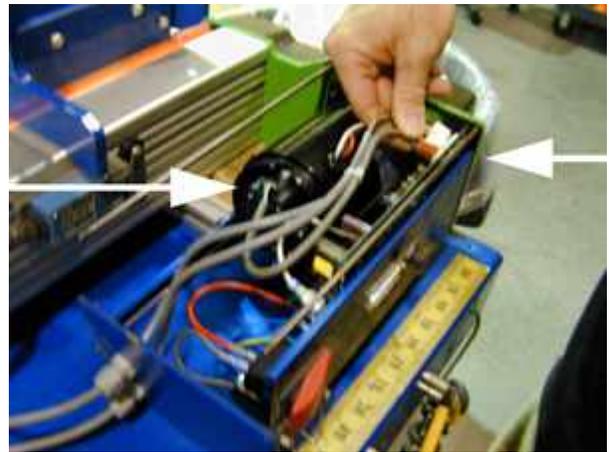
Using a 3/8" nut driver, remove the (4) acorn nuts from the motor box end cap. ▶



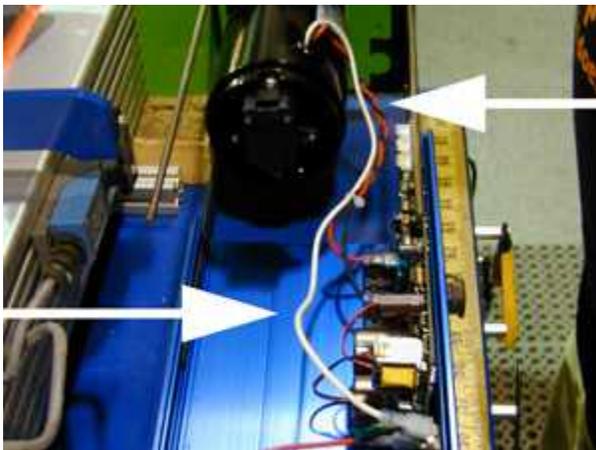
Pull the motor box end cap off the stud bolts. ▶



Slide the motor box cover off stud bolts. ▶



Unplug (3) cables* from the amp board and (1) from the encoder as shown at arrows, and remove the end cap. ▶



Slide the amp cover off the stud bolts, unplug the white, red and black cables** from the amp board as shown at arrows, and remove the amp cover. ▶



Remove the (4) stud bolts from the motor end plate. ▶

*Note the order in which to reconnect the (3) cables later: encoder, motor end, far end sensor.

**Note the locations where they will be reconnected later.

4. Remove the motor and motor end plate



Using a 3/32" hex wrench, undo the (3) screws securing the drive belt cover, and remove it. ▶



Using a 1/8" hex wrench, undo the (4) bolts securing the motor to the end plate. (On some models, use a 3/8" nut driver to remove these bolts.) ▶



Remove the drive belt and motor. Clean out old silicone from the holes. ▶



Using a 7/16" nut driver, remove the bolt from the end of the drive screw. ▶



Using a 1/8" hex wrench, loosen (2) set screws securing the pulley to the drive screw, and remove the pulley. ▶



Carefully rotate TigerFence 90° so the motor end plate is standing straight up. ▶

TigerFence Carriage Replacement



Use a 7/16" box wrench as a brake for the drive screw at the far end plate. ▶



Tightly grip the lock nut at the motor end of the drive screw with a pair of pliers, and rotate it until it can be removed. (It's threaded onto the screw.) ▶



Remove the two washers from the drive screw. ▶



Using a T25 Torx driver, remove the (4) screws securing the motor end plate to the extrusion. ▶



Using a dead blow mallet, tap the motor end plate loose from the extrusion and remove it. ▶

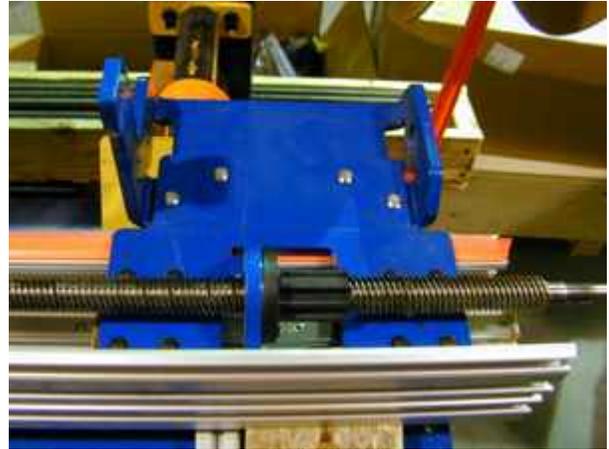


Using a T25 Torx driver, remove the top (2) screws securing the far end plate to the extrusion, and partially undo the bottom (2). ▶

5. Remove the existing carriage assembly



Firmly grasping the extrusion cover, pivot it towards you and carefully remove it. The drive screw is now totally accessible. ►



The existing carriage assembly is attached to the drive screw by a large nut and is also fastened to two linear bearings by (8) round head bolts (hex head bolts on some models). You will be replacing this carriage assembly. ►



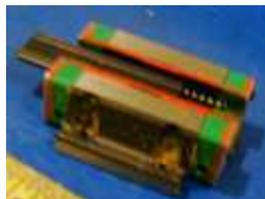
Using a 3mm hex wrench (or 8mm nut driver on existing hex head bolts), remove the (8) round head bolts securing the linear bearings. ►



With a helper guiding the carriage at the motor end (**READ Caution below**), turn the drive screw anti-clockwise from the far end using a 7/16" wrench, so the carriage moves away from you until it is completely off the screw. ►

CAUTION!

The linear bearings must NOT be dragged off the guide track with the movement of the existing carriage! The person guiding the carriage as it is moved off the drive screw MUST raise it to avoid dragging the bearings.



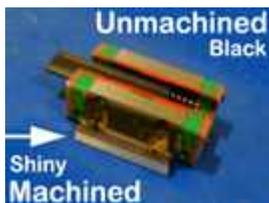
Linear bearings

The linear bearing is shown inverted, with the plastic retainer offset to reveal the ball bearings inside. When the linear bearings are mounted to the guide track, the ball bearings contact the track. If the linear bearing is removed from the track without re-inserting the plastic retainer, the ball bearings will fall out and be lost!

TigerFence Carriage Replacement

6. Install the replacement carriage assembly

Linear bearings have a machined edge (shiny), and an unmachined edge (black finish).



Without removing them from the guide track, inspect both bearings. Both should have the machined (shiny) edge facing towards you, that is, towards what will become the mounting face of the extrusion when TigerFence is re-installed to the saw.

If one or both are not mounted facing this way, they must be removed, turned around, and placed back on the track. This can be tricky. ▶



Skip this step if your linear bearings are correctly oriented.

Align the plastic retainer (provided by TigerStop) with the end of the guide track, and carefully slide the bearing assembly off the track and onto the retainer. Hold the retainer in place while you turn the bearing assembly around. ▶



Skip this step if your linear bearings are correctly oriented.

Replace the bearing assembly onto the guide track and off the retainer. Two retainers are provided in case you have to turn both bearing assemblies around. Place the bearings in approximate position relative to the carriage. ▶



Thread the replacement carriage assembly back onto the drive screw. Turn the screw using a 7/16" wrench at the far end. ▶



Line up the (8) holes in the carriage assembly with those in the linear bearings.

Put Loctite 242 on the bolts, and thread them into the holes in the carriage and the bearings, but do not tighten them completely. ▶

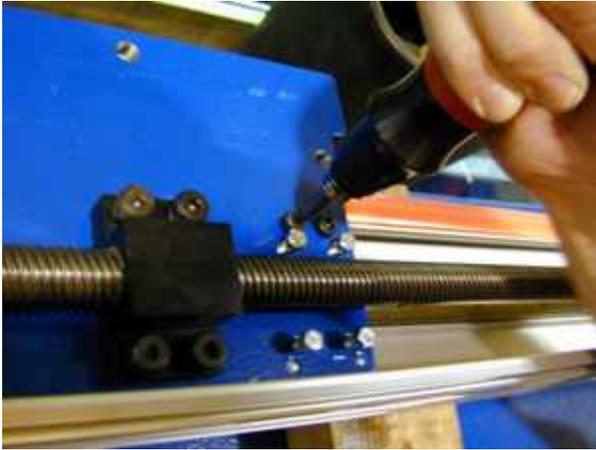
TigerFence Carriage Replacement



Reattach the motor end plate by means of the (2) lower screws, tightened partially, so the drive screw is supported. ▶



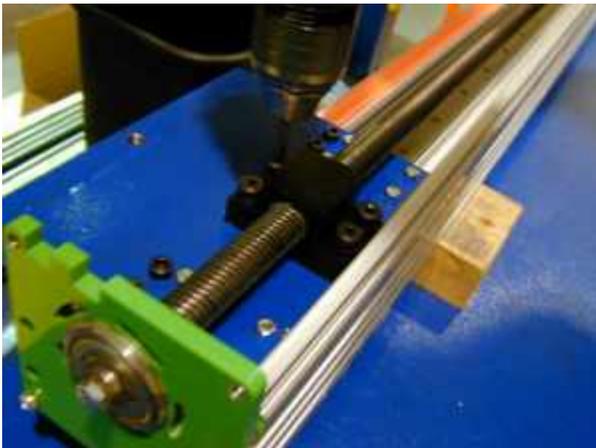
Using a power tool and a 7/16" nut driver, turn the screw from the far end till the carriage moves to about 1/2" from the far end plate. ▶



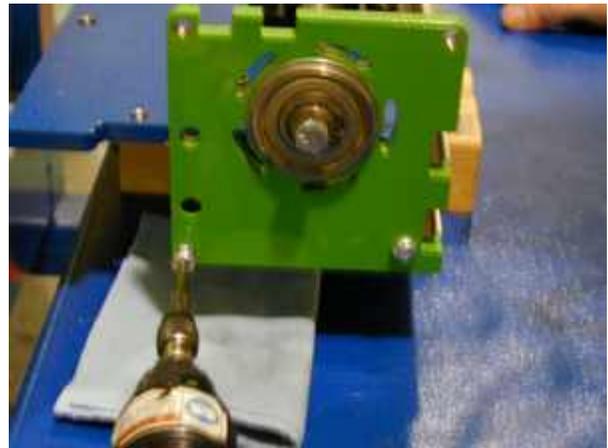
Using a 5mm hex wrench, tighten the (4) bolts securing the clamp bar. Tighten them in rotation as lug nuts on a wheel till all are very tight. ▶



Using an 8mm nut driver, tighten the (8) bolts that secure the linear bearings. If you have a torque wrench, tighten them to 78 in-lbs. ▶



Using a 5/32 hex wrench, fully tighten the (4) shoulder bolts on the square nut. If using a power driver, do the final tightening manually. ▶



Using a T25 Torx driver, tighten the bottom (2) screws securing the far end plate to the extrusion. ▶

Use a power tool and 7/16" nut driver to turn the drive screw from the far end. ▶

TigerFence Carriage Replacement

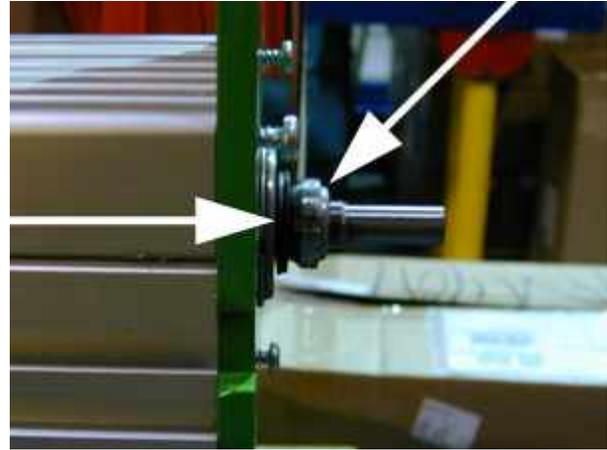
Move the carriage to about 1/2" from the motor end plate. This aligns both ends of the screw. ►

7. Final re-assembly

Reinstall the extrusion cover. Using a T25 Torx driver, insert and fully tighten the top (2) screws in the far end plate. ►



Insert the (2) top screws in the motor end plate, and partially tighten, using a T25 Torx driver. ►



Place the (2) washers, concave sides facing each other so as to form a spring, on the screw drive shaft. Then turn the lock nut onto it, plastic ring facing out. ►

Using a 7/16" box wrench as a brake for the drive screw at the far end plate, fully tighten the lock nut at the motor end with pliers. This will cinch the motor end plate tighter to the extrusion. As you tighten the lock nut at the motor end, go back and check the retaining ring on the far end of the shaft. When it starts to flex, stop tightening the lock nut. ►



Finish tightening all (4) screws in the motor end plate, using a T25 Torx driver. Rotate TigerFence forward 90°. ►



Reinstall the pulley, aligning the (2) set screws to the divots on the drive screw shaft, and tighten down with a 1/8" hex wrench. Screw the bolt into the end of the drive screw and fully tighten it with a 7/16" nut driver. ►

TigerFence Carriage Replacement



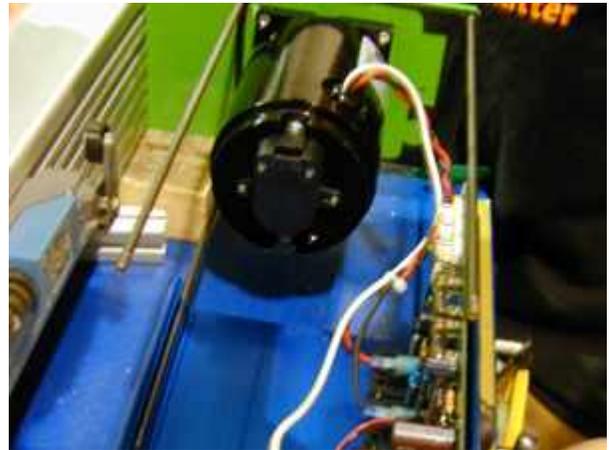
Mount the motor back onto the motor end plate using the (4) bolts, but do not tighten yet. Put the drive belt back on the (2) pulleys. ▶



Pulling the motor away from the drive screw to add tension to the belt, fully tighten all (4) bolts securing the motor, using a 3/8" nut driver. ▶



Screw the stud bolts into the motor end plate. ▶



Slide the amp cover back onto the stud bolts and connect the white, red and black cables. ▶

Reconnect the (3) cables (encoder, motor end, far end sensor) to the amp board and (1) to the encoder. Slide the motor box cover back onto the stud bolts. ▶



Press the motor box end cap onto the stud bolts, add the acorn nuts, and fully tighten them down, using a 3/8" nut driver. ▶



Re-install the drive belt cover and fully tighten the (3) screws securing it to the motor end plate, using a 3/32" hex wrench. ▶

TigerFence Carriage Replacement



*You have successfully replaced your TigerFence carriage assembly!
Now, install your TigerFence back on your saw, and run the machine through the set up procedures.
Refer to TigerFence Installation & Basic Setup for details.*

Screw the end sensor trigger into one of the (3) holes on the carriage assembly, and fully tighten the nut, using a 1/2" open end wrench.

Reference: Closeup of the carriage assembly

