

# TSplus Belt Grinder

Assembly and Operation Guide

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**Belt Grinder**

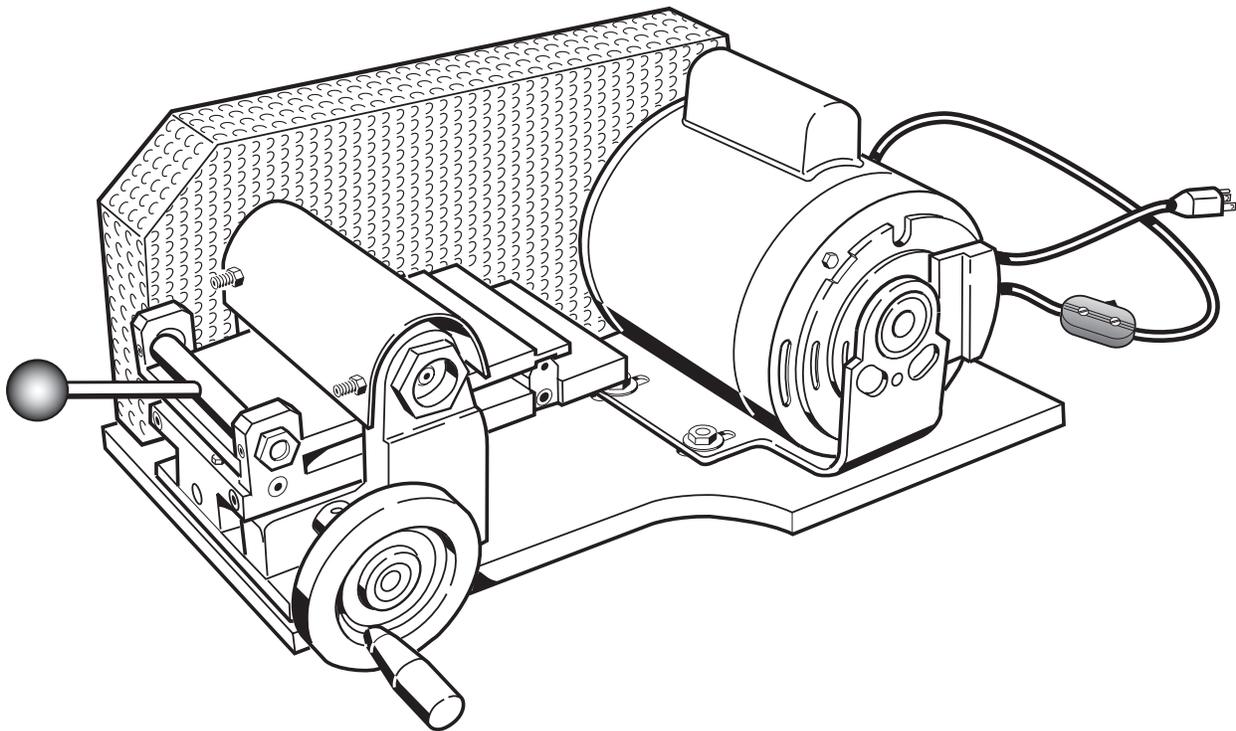


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### **Liability:**

In no event can the manufacturer accept warranty claims or liability claims for damages resulting from improper use of the equipment or as a result of changes made to the equipment other than those specified in this instruction manual.

### **Guarantee:**

The manufacturer will accept no claims in which non-original spare parts have been used. For information on spare parts and replacement parts, contact Bosch Rexroth Corporation.

### **Environmental Protection:**

Always dispose of worn, damaged or obsolete parts in a responsible manner. It is the user's responsibility to dispose of all hazardous material such as adhesives and cleaning solutions in accordance with all local, state and federal guidelines.

# IMPORTANT SAFETY INFORMATION

## **WARNING!**

Please read all assembly and maintenance instructions carefully before beginning set-up and operation of the belt grinder.

Where appropriate, warning symbols  have been included in this publication to alert you of potential or impending danger.

- Be sure to read and observe all safety warnings in this document. Failure to do so could result in potential risks to your health and safety as well as those around you.
- Covers and guards have been designed to eliminate pinch points and exposure to moving belts and pulleys. **DO NOT** operate the belt grinder with the guards removed. Serious injury may result!
- All set-up, maintenance, and repair work should be performed only by properly trained, qualified personnel. All operators must be properly trained in the use of this equipment.
- Always make sure that the switch is in the OFF position and the power cord is unplugged before adjusting or servicing.
- Always be sure that the switch is in the OFF position before plugging in the belt grinder.
- To prevent serious injury, never wear loose-fitting clothing while operating the belt grinder. Long hair **MUST** be tied back.

## **SAVE THESE INSTRUCTIONS!**

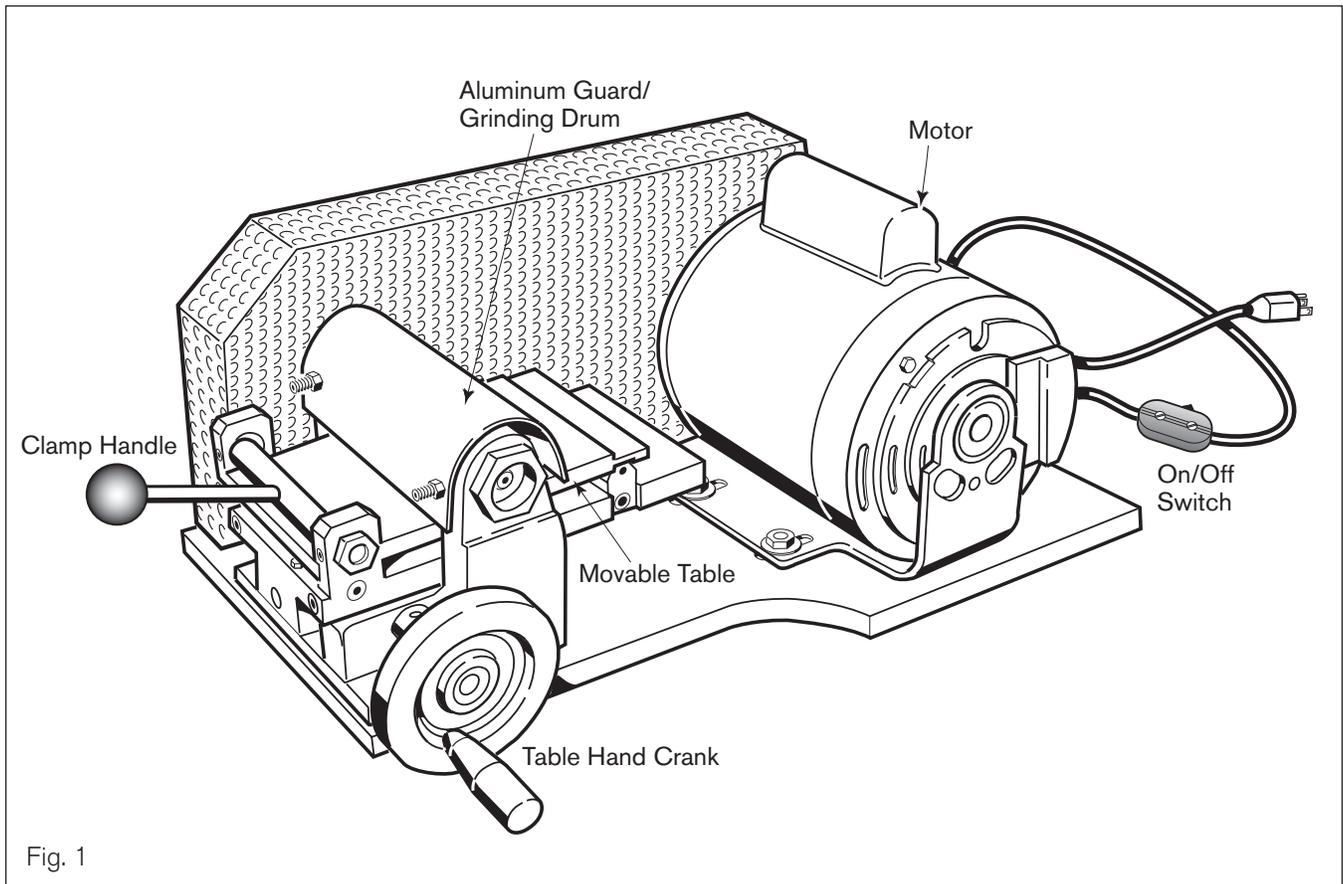


Fig. 1

## Introduction

Prior to welding the transport belts for *TSplus* conveyors, the ends must be tapered to provide the proper overlap. The belt grinder is designed to grind the belt ends to the proper taper in a single pass.

The belt grinder's 1/3 HP, 120 VAC/60 Hz motor operates at 1,750 RPM to drive the V-belt that powers the grinding mechanism. The grinding mechanism features a round grinding drum with a replaceable abrasive covering. An adjustable clamping and feed mechanism holds the belt securely and helps ensure the correct taper. Important components are shown in Figure 1.

## Shipping Information

The belt grinder is shipped completely assembled, except for the table hand crank, which must be installed prior to use.

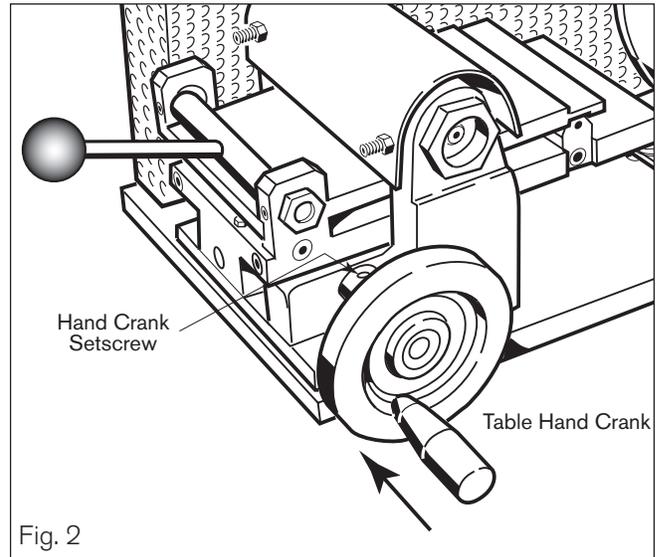
The belt grinder has been adjusted to the correct settings before leaving the factory; however, it is highly recommended that you test grind two scrap pieces of belt to ensure that the belt lap length and zero-height adjustment have not changed during shipping. See the "Preliminary Adjustments" section for details.

## Assembly

The table hand crank must be installed prior to use.

To install the hand crank:

1. Slide the hand crank onto the shaft in the table base, as shown in Figure 2.
2. Use a 1/8" hex key to securely tighten the setscrew in the hand crank.



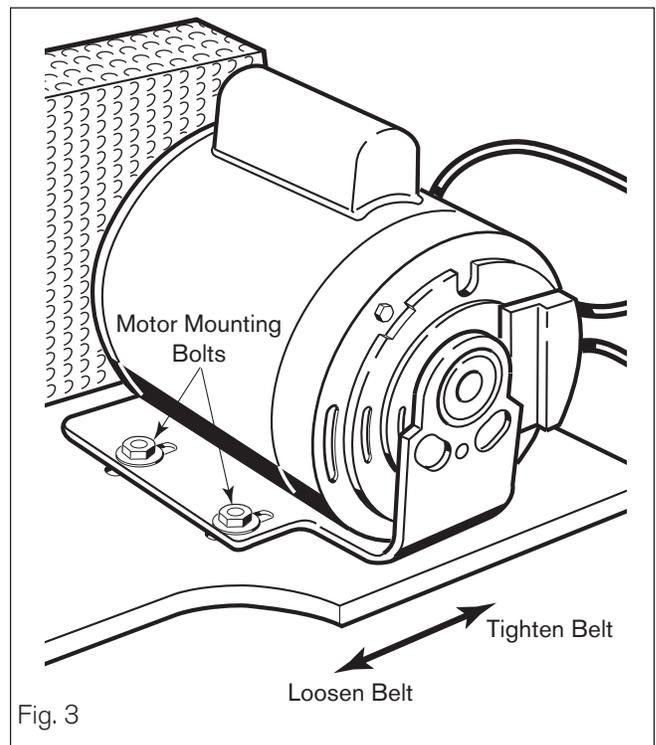
## Preliminary Adjustments

Prior to leaving the factory, the belt grinder was checked and set for the correct adjustments. However, all settings should be rechecked prior to use, to be sure that nothing has changed during shipping. These settings should also be checked before each use, especially after any type of maintenance work is performed, such as replacing the grinding drum abrasive.

Before using the belt grinder, check the following:

### 1. Drive belt tension (Figure 3)

Make sure that the V-belt on the motor drive pulley is tensioned against the grinding drum pulley (it may necessary to remove the guard). If it is too loose, it could slip during operation. To adjust the belt tension, or when replacing a worn belt, loosen the motor mounting bolts with a 1/2" wrench and slide the motor base away from the grinding drum to tighten the belt, or towards it to loosen it.




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**IMPORTANT:** Always be sure that the motor base is straight after making any adjustments. If it is not straight, excess belt wear could result.

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## Preliminary Adjustments (continued)

### 2. Clamp Handle Rotary Cam (Figure 4)

The clamp must hold two belts securely to the table. Check it with two pieces of the type of belt that you will be grinding, making sure that it applies an equal amount of pressure to each piece (the gap should be equal on both ends), and that both belts are held securely in place.

If adjustment is needed, use a  $1/8''$  hex key to loosen the two clamp handle setscrews and rotate the brass cam bearings on each end to increase or decrease the tension on the clamp handle. Retighten the setscrews securely after adjusting.

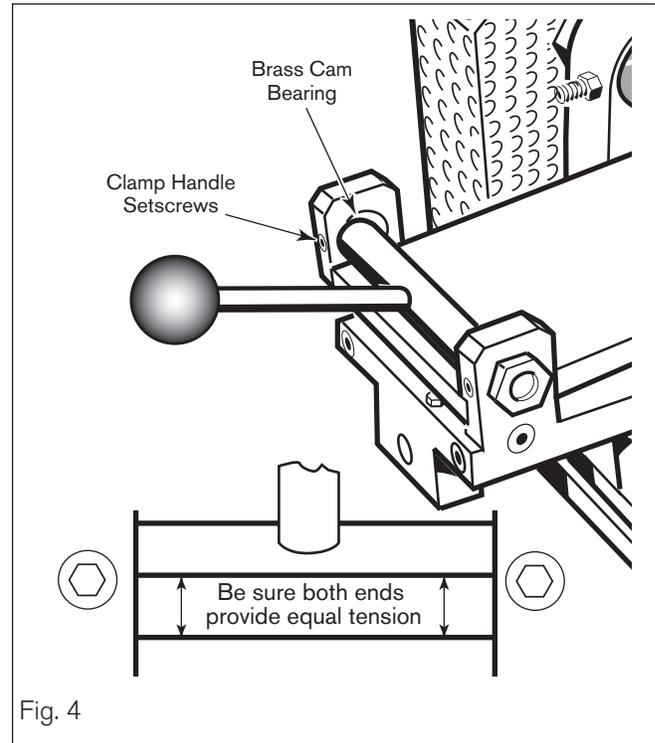


Fig. 4

### 3. Zero Point Adjustment (Figure 5)

Turn the hand crank until the end of the table is directly under the grinding drum. Look under the aluminum guard and check the gap between the abrasive surface of the grinding drum and the table. The edge of the table should just barely touch the abrasive drum, and the two surfaces should be perfectly parallel to each other.

If adjustment is needed, remove the  $7/16''$  nuts holding the aluminum guard, and lift off the guard. Then loosen the  $7/16''$  jam-nuts on the grinding drum setscrews, and back out the setscrews slightly using a  $1/8''$  hex key, until the drum nuts can be turned. Turn the large drum nuts counterclockwise to lower the drum or clockwise to raise it. Once the drum height is properly adjusted, tighten the setscrews and jam-nuts, and reinstall the guard.

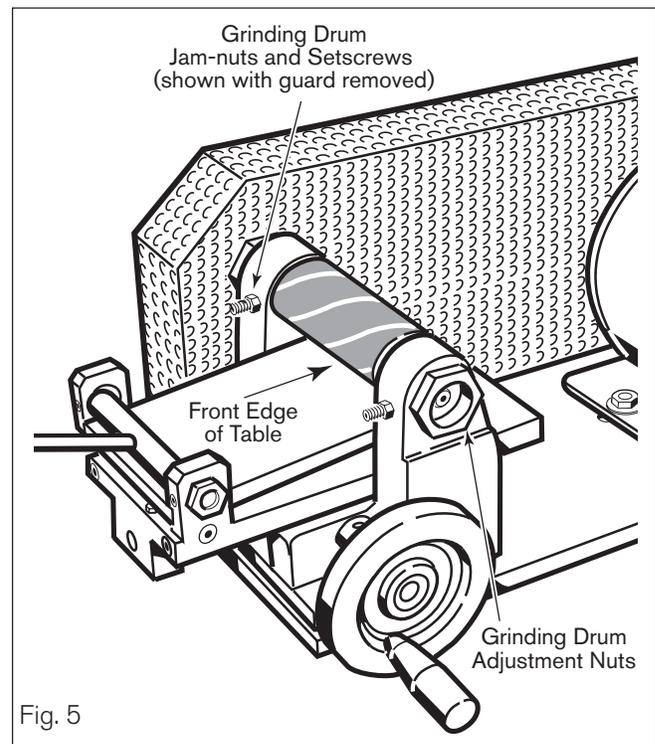


Fig. 5

**4. Bevel Length Adjustment** (Figures 6 and 7)

The belt grinder is preset to provide the correct bevel length for *TSplus* conveyor transport belts, which is 60mm (Figure 6).

If adjustment is needed, the slope of the table can be increased or decreased to provide the proper bevel length. Loosen the 7/16" jam-nut on the bevel length adjustment setscrew under the rear edge of the table. Then use a 1/8" hex key to turn the setscrew. Turn it clockwise to decrease the bevel length, counterclockwise to lengthen the bevel length. Once the bevel length is set to the correct 60mm length, hold the setscrew in place with the hex key and tighten the jam-nut securely.

**5. Final check**

Make sure that all guards are in place and all fasteners are tightened securely before using the belt grinder. Be certain the power switch is in the OFF position before plugging in the cord. The belt grinder should be securely clamped or fastened to a solid, stable worksurface that is clean and free of items that could present a hazard.

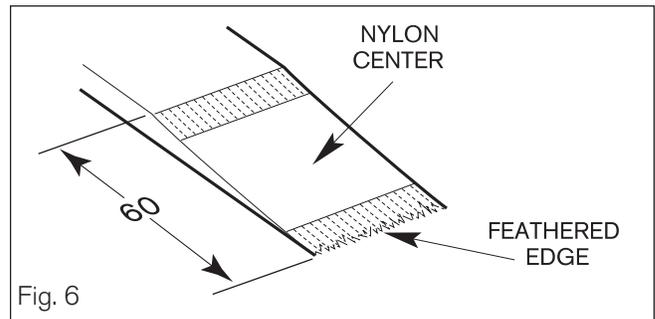


Fig. 6

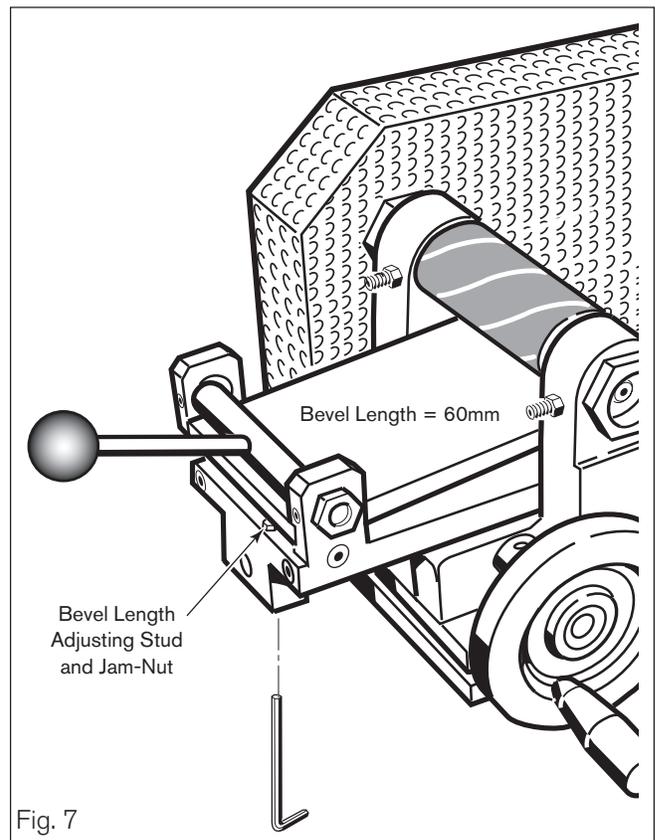


Fig. 7

## Operating Instructions

The belt grinder will grind two belts at once, in a single pass. **The proper bevel is absolutely critical when welding TSplus transport belts.** To ensure proper operation, it is important that all settings outlined on pages 5–7 are checked before grinding belts, and that the following steps are followed carefully.

### **⚠ WARNING!**

To prevent serious injury, always observe the following safety warnings:

- **Make sure all guards are securely in place and all fasteners are tight.**
- **NEVER wear loose-fitting clothing or jewelry that could be pulled into the grinding drum.**
- **Long-hair MUST be tied back.**
- **Because of the fine dust generated in the grinding process, ALWAYS wear safety glasses and a dust mask.**

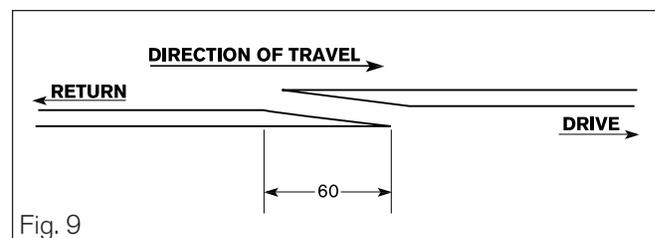
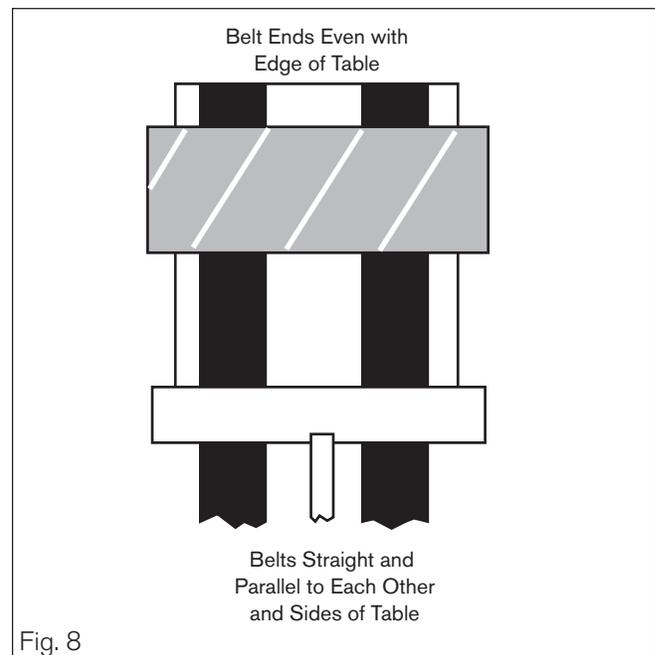
#### Preparing to grind the belts:

1. Turn the crank handle counterclockwise, moving the table as far forward (toward the motor) as it will go.
2. Raise the belt clamp handle and feed two belts under the clamping bar and grinding drum, until the ends of the belt are even with the front edge of the table. Make sure the belts are straight and parallel to the sides of the table and each other, and that the ends of the belt are square with the front edge of the table. See Figure 8.

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**IMPORTANT:** Make sure that you grind the **bottom** of the belt coming from the **drive** and the **top** of the belt coming from the **return**. This ensures smooth pallet transfer over the belt joint. See Figure 9.

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**Grinding the belts:**

1. Once the belts have been properly positioned, push down on the clamping lever to lock it. Make sure the belts are held securely.
2. Make sure that the power switch is in the OFF position, then plug the belt grinder cord into a 3-prong grounded outlet.
3. Perform a final visual check to make sure that all guards are in place and that the belts are properly aligned and securely clamped in place.
4. Turn ON the motor using the switch on the power cord.
5. Turn the crank handle clockwise to feed the belts against the grinding drum. Once the belts contact the grinding drum, maintain a slow and steady pace while turning the hand crank. It may be necessary to slow down as you approach the ends of the belts, as the grinder removes more material from the belts.
6. Once the belt has fed completely through and the grinder has reached the end of the table, slowly crank the table back in the reverse direction by turning the crank handle counter-clockwise. This will ensure a clean bevel.
7. Once the table has returned to the starting position, turn the power switch to OFF and unplug the grinder. Raise the belt clamp handle and remove the belts. Make sure the ends are properly feathered and free of burrs, as shown in Figure 6 on page 7. Remove any burrs by lightly sanding with 80 grit sandpaper.

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**IMPORTANT:** Protect the beveled surfaces on the belts from oil, dust, moisture, fingerprints, etc. Any contamination could result in a defective weld and create a safety hazard.

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The belts are now ready for welding. Refer to the belt welding section of the TS*plus* Basic Equipment manual for instructions.

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**CAUTION!** Do NOT try to force the feed rate too quickly! Feeding the belt too quickly may overheat or damage the belt, resulting in an unusable bevel.

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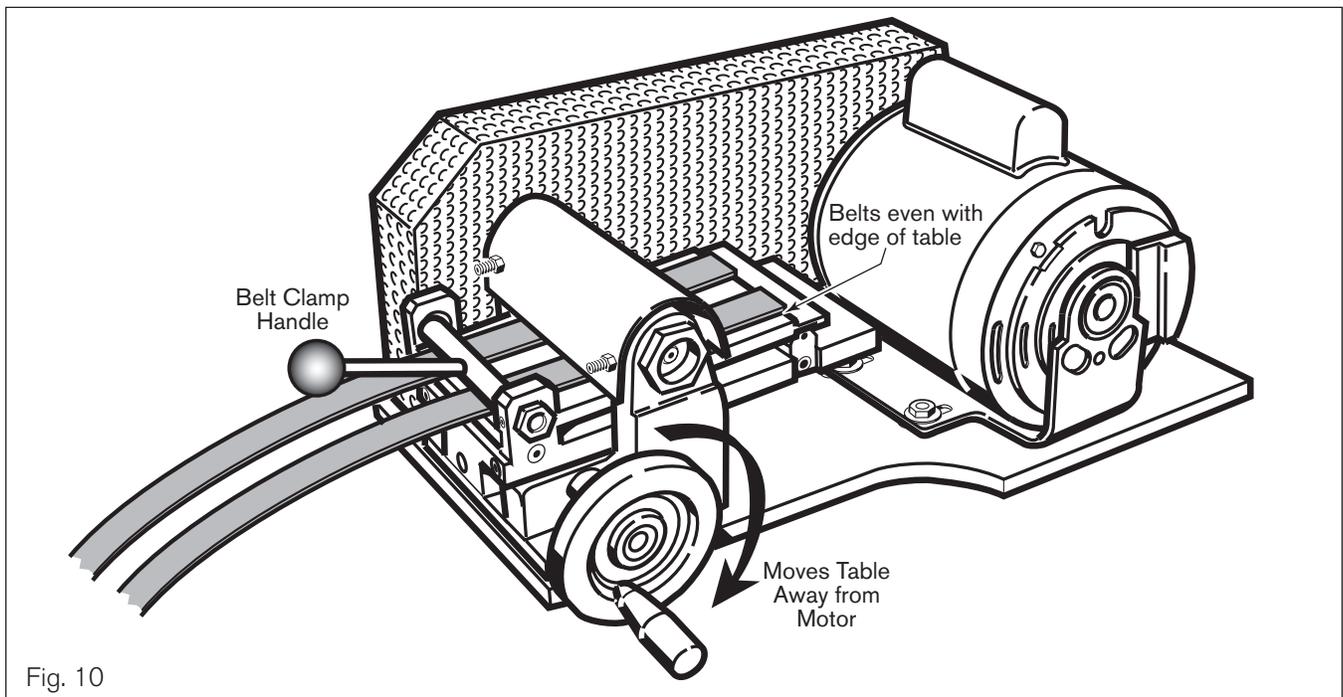


Fig. 10

## Maintenance

Other than replacing the abrasive on the grinding drum as needed, the belt grinder is maintenance-free. Following the checklist and steps below will help ensure safe operation and superior results.

**⚠ WARNING!** Make sure the unit is unplugged before performing any maintenance or repair work!

- After belt grinding is complete, vacuum any dust and particulate from the unit.
- Before each use, check that all guards are in place and all fasteners are tight.
- Regularly check the power cord and plug for damage or wear, and replace it, if necessary.
- Regularly check the drive belt for looseness or wear, and adjust or replace as needed.

### Replacing the abrasive cover:

The grinding drum uses a self-adhesive abrasive cover. This should be replaced when the abrasive surface becomes worn or clogged with belt particulate. Failure to do so could result in difficulty grinding and poor results.

1. Make sure the unit is unplugged.
2. Using a 7/16" wrench, remove the nuts that secure the aluminum guard in place and remove the guard.
3. Using a utility knife, carefully pry up the end of the abrasive cover along the edge of the drum.
4. Carefully peel off the abrasive by slowly turning the grinding drum as shown in Figure 11.
5. Remove any adhesive residue from the grinding drum with a lint-free cloth and lacquer thinner. Allow the drum to dry completely.

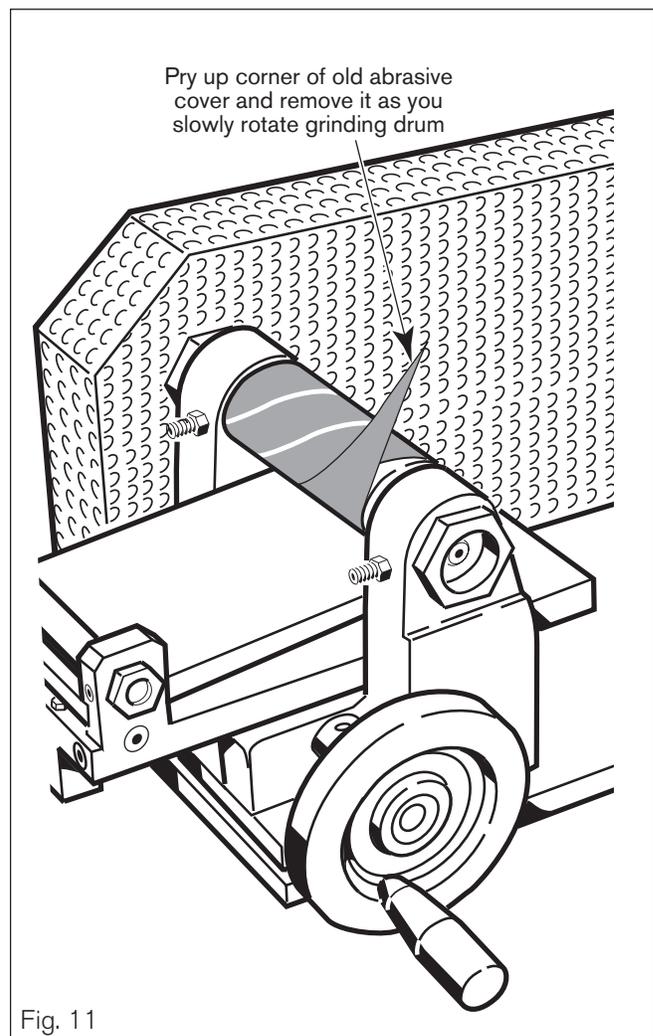


Fig. 11

6. Peel the backing from the end of the new abrasive cover and attach it to the edge of the drum, then slowly turn the drum clockwise, installing the abrasive in a spiral direction, until the entire drum is covered.

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**IMPORTANT:** Always install the new abrasive cover in the same spiral as the old one! Failure to do so could cause the abrasive to become loose or cause poor results.

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7. Once the drum is covered, trim any excess abrasive paper that extends past the ends of the drum.
8. Recheck the zero-point setting, following the instructions on page 6, and adjust as needed.
9. Reinstall the aluminum guard and tighten the nuts securely. NEVER operate the belt grinder without all guards in place.

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