Rockwell
MANUFACTURING COMPANY
The Rockwell Building • Pittsburgh, Pa.

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ROCKWELL—DELTA SANDER/GRINDER

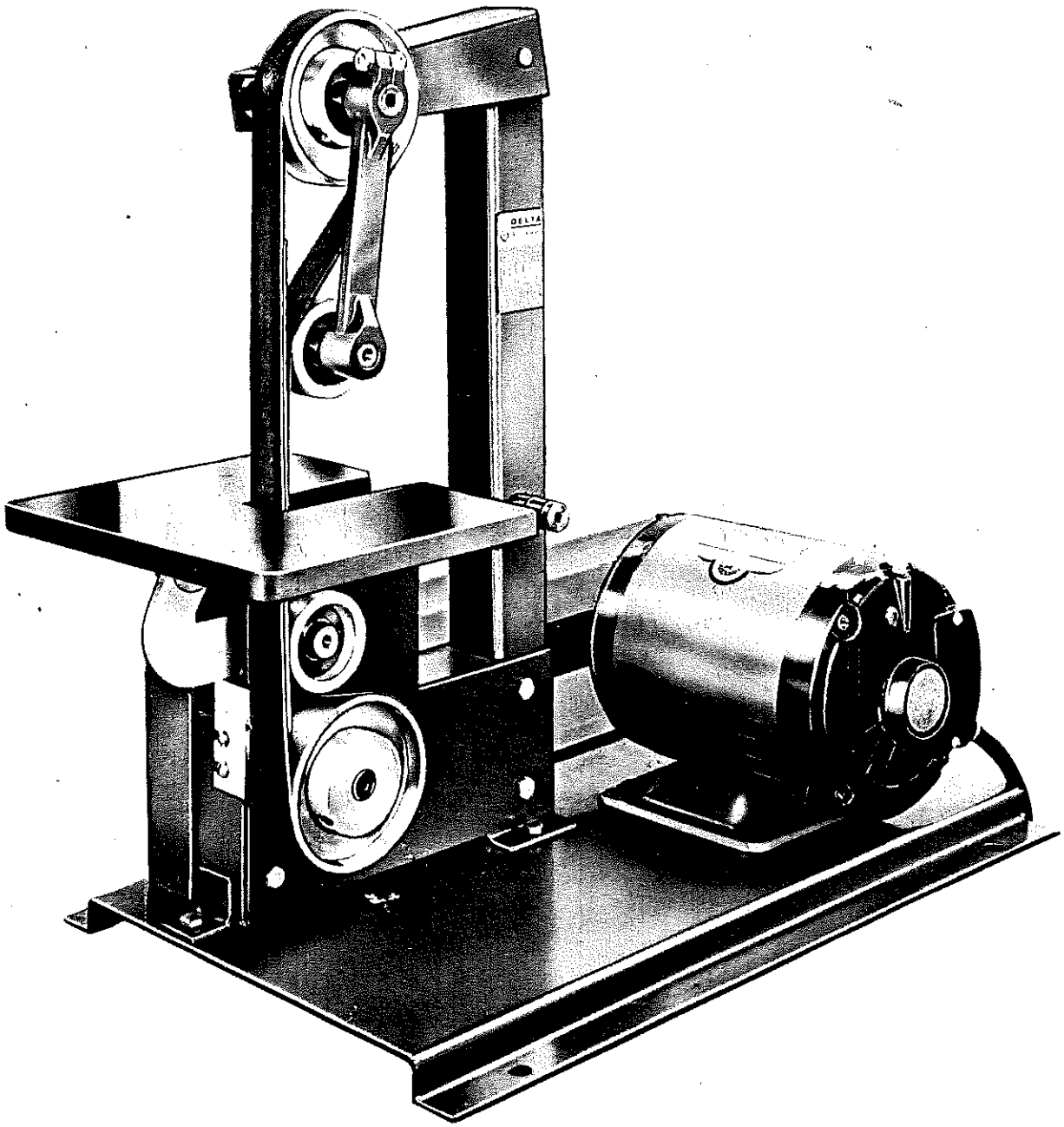

Fig. 1.

INTRODUCTION

Your new Sander/Grinder is an important machine in the industrial, commercial, school, or home shop. It can be used for practically any material, providing the proper abrasive belt is used. (SEE ABRASIVE BELTS – THEIR SELECTION AND USE.)

SETTING UP

Cat. No. 31-350 Sander/Grinder is shipped complete with table, platen, 2" arbor V-pulley, and one 1" x 42" 80 grit aluminum oxide belt. Mount the Sander/Grinder to a suitable bench or the 50-106 Open Steel Stand, which is available as an accessory. The motor can be mounted to the rear of the Sander/Grinder on a bench or if the 50-106 Steel Stand is used, the motor can be mounted underneath the machine on the shelf provided, and the No. 453 V-belt is used. The 1/2 hp Cat. No. 60-050, 3450 rpm, single phase motor or Cat. No. 66-060, 3450 rpm, three phase motor, and Cat. No. 5250 2 1/2" motor pulley are recommended for use on your Sander/Grinder. It is important to have a large enough motor and the correct size of motor pulley to maintain the recommended belt speed.

Cat. No. 31-354 Sander/Grinder consists of the 31-350 machine, 49-105 V-belt, 5250 Motor Pulley, 31-360 Base, and 62-660 Heavy Duty Ball Bearing Single Phase Motor. The machine is completely assembled and ready to plug in on 115 V, 60 cycle, single phase power.

Cat. No. 31-355 Sander/Grinder consists of the 31-350 machine, 49-105 V-belt, 5250 Motor Pulley, 31-360 Base and 60-050 Standard Duty Single Phase Motor. The machine is completely assembled and ready to plug in on 115V, 60 cycle, single phase power.

Cat. No. 31-356 Sander/Grinder is the same as the 31-355 unit with the exception that the 66-060 three phase motor is used. Available as accessories for the three phase motors are the #1320 Manual Starter, #49-393 Magnetic Starter 208-220V., and #49-394 Magnetic Starter 440V.

A qualified electrician should connect the motor to the control switch and power source.

Fig. 2 shows the mounting hole recommendations for the Sander/Grinder.

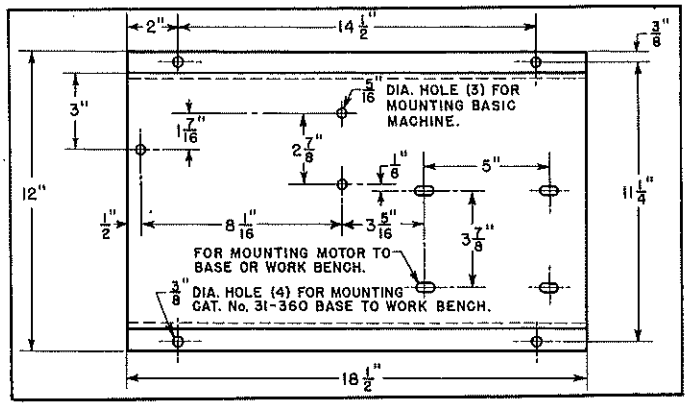

Fig. 2.

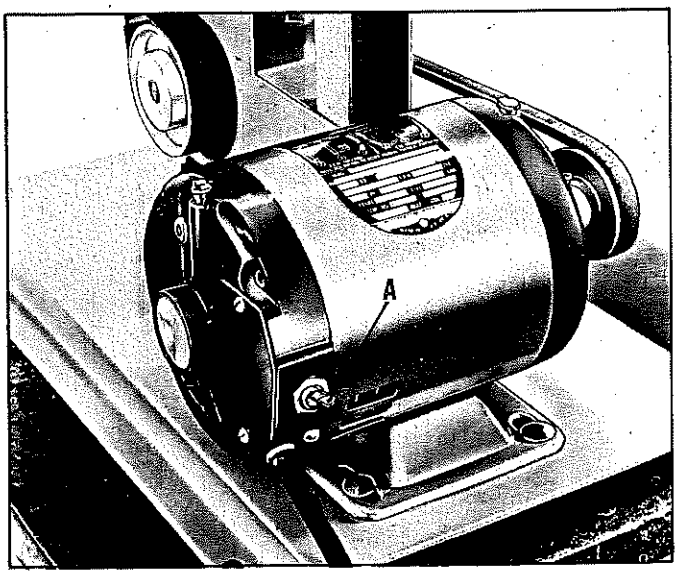

Fig. 3.

TO START THE SANDER/GRINDER

A toggle switch (A) Fig. 3, is provided on the rear of the single phase motor recommended for use on your Sander/Grinder. When the machine is used with the 50-106 Steel Stand, Cat. No. 1330 Switch Rod, or the Cat. No. 49-385 Switch Box and Cable may be used.

Available as accessories for the Three Phase Motor are the No. 1320 Manual Starter,, No. 49-393 Magnetic Starter 208-220V. and No. 49-394 Magnetic Starter 440V. A qualified electrician should connect the motor to the control switch and power source.

INSTALLING ABRASIVE BELTS

To install or remove the Abrasive Belt, simply press down on the over-arm, as shown in Fig. 4, to release belt tension. Then remove and replace the belt. Install the belt so the arrow on the inside of the belt is pointing down at the front of the machine. Tension on the Abrasive Belt is automatically supplied by the use of a heavy spring located between the over-arm and the column.

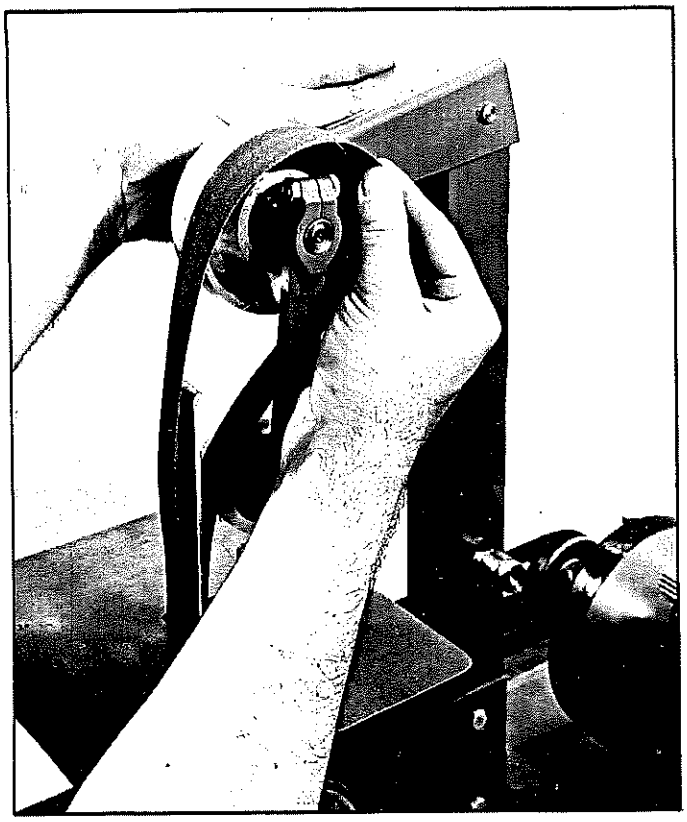

Fig. 4.

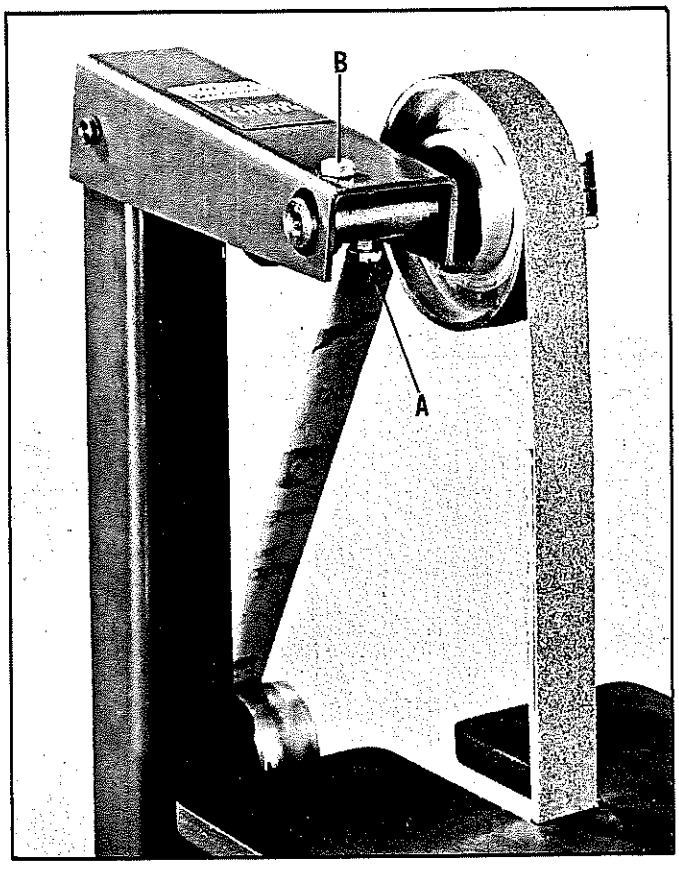

Fig. 5.

TRACKING THE BELT

The tracking adjustment is set at the factory so that the Abrasive Belt will run true on the pulleys. If, however, the belt should lead to one side or the other on the pulleys, an adjustment can be made as follows:

1. Disconnect the machine from the power source.

2. For a preliminary adjustment, turn the V-Belt by hand and check to see which way the Abrasive Belt will have to be tracked.

3. If the Abrasive Belt has to be tracked to the right, loosen cap screw (A) Fig. 5, and tighten cap screw (B). If the Abrasive Belt is to be tracked to the left, reverse this procedure. CAUTION: THIS ADJUSTMENT IS USUALLY VERY SLIGHT.

4. For a final check, turn the machine on and adjust further if necessary.

ADJUSTING TABLE

The table of your Sander/Grinder can be moved in or out, by loosening Lock Screw (A) Fig. 6, and sliding the table in or out until the desired position is obtained. Then tighten Lock Screw (A). To remove the table, loosen lock screw (A) Fig. 6, and pull the table straight out.

To tilt the table, loosen nut (B) Fig. 6, tilt the table to the desired angle, and tighten nut (B). The table will tilt from the usual horizontal position to a 10 degree back or 90 degree forward angle, permitting a wide range of beveling.

REMOVING PLATEN

When using your machine for "strapping" or other special operations, the platen should be removed in order to have the Abrasive Belt loose. To remove the platen, loosen the two screws (C) Fig. 6, and remove the platen from the machine.

Available as accessories for your Sander/Grinder are the 31-364 Flat Platen for 1/2" or narrower belts, and the 31-365 Convex Platen, 1/2" radius for 1" belts.

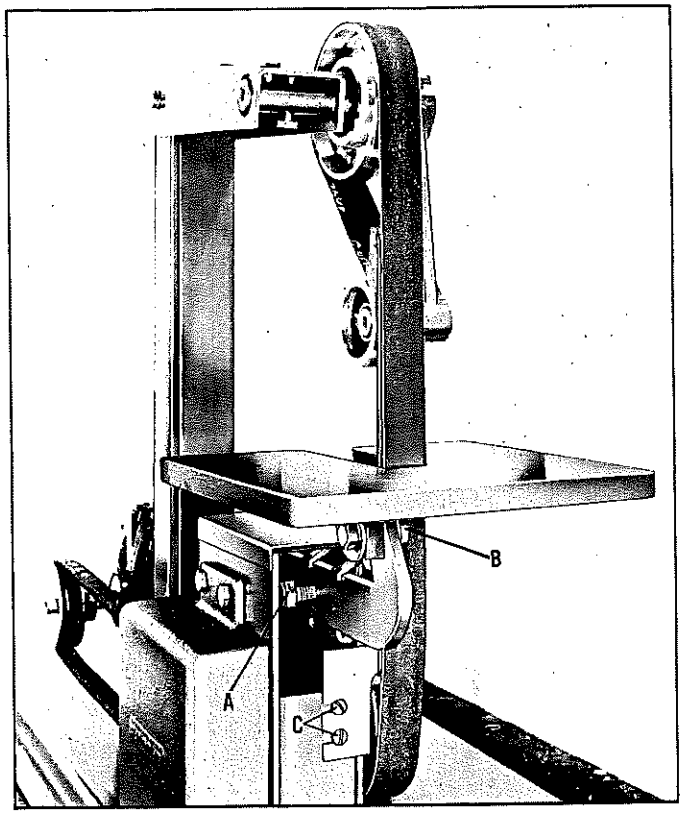

Fig. 6.

LUBRICATION

The Cat. Nos. 60-050 Standard Duty Single Phase and 66-060 Three Phase Motors used with your Sander/Grinder should be oiled occasionally with light machine oil in the two cups located on top of the motor end bells. DO NOT OVER LUBRICATE THE MOTOR.

The Cat. No. 62-660 Heavy Duty Ball Bearing Single Phase Motor does not require lubrication.

No lubrication is required on the Sander/Grinder.

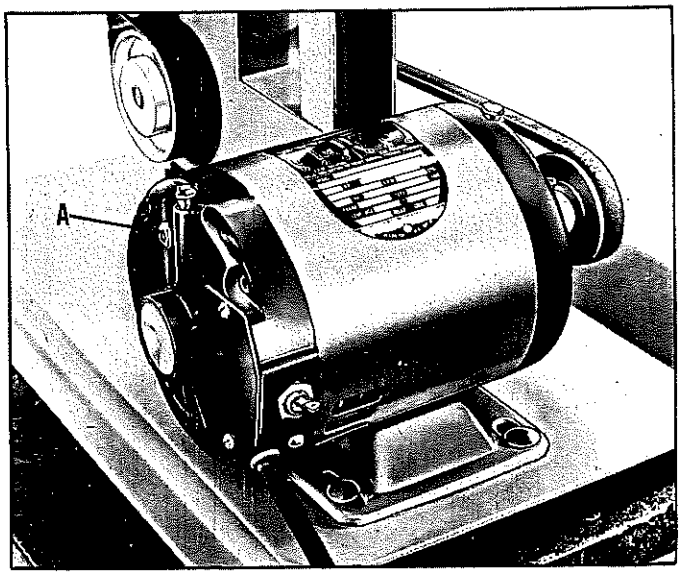

Fig. 7.

OVERLOAD PROTECTION

The Cat. No. 60-050 Single Phase Motor recommended for use on your Sander/Grinder has a red reset overload relay button in the end bell. If the motor shuts off due to overloading or low voltage, let the motor cool three to five minutes and push the reset button, (A) Fig. 7. If this trouble is repeated, investigate to determine and correct the cause of the trouble. Many times this type of failure indicates the use of an extension cord which is too long or the size is too small to carry the current required.

If overload protection is desired for the three phase motor recommended for your Sander/Grinder, the No. 1320 Manual Starter, No. 49-393 Magnetic Starter 208-220 V., and No. 49-394 Magnetic Starter 440V., are available as accessories.

ABRASIVE BELTS – THEIR SELECTION AND USE

We supply belts in a choice of seven (7) grits ranging from the coarse 40 grit belt used for fast stock removal to the extra fine 320 grit used for finishing or "coloring". These are top quality thin joint belts with cloth backing, selected bonding material and a single "closed coat" layer of aluminum oxide abrasive particles, applied by the most modern electrostatic methods.

These belts are recommended for a wide range of work on wood, metals, plastics and other materials. However, when a large amount of production work of one kind is to be done, it is best to call in a coated abrasive specialist for his specific belt recommendations. For certain specialized jobs a silicon carbide or a garnet belt may be better, and these are not supplied by us.

All materials may be worked on a dry belt. But for professional quality or for production work a low melting point grease should be used for cooler cutting, better finish, and for longer belt life. Even coarse belts will "load" when grinding aluminum dry, and so a lubricant should always be used for this material. To a varying degree, this is true of other non-ferrous metals like soft brass and zinc.

A grease stick, as shown in Fig. 8, is often applied to the belt to prevent "loading" of the belt on softer materials especially aluminum. When grinding steel or some kinds of plastic, the grease stick is often used to prevent over-heating of the work piece.

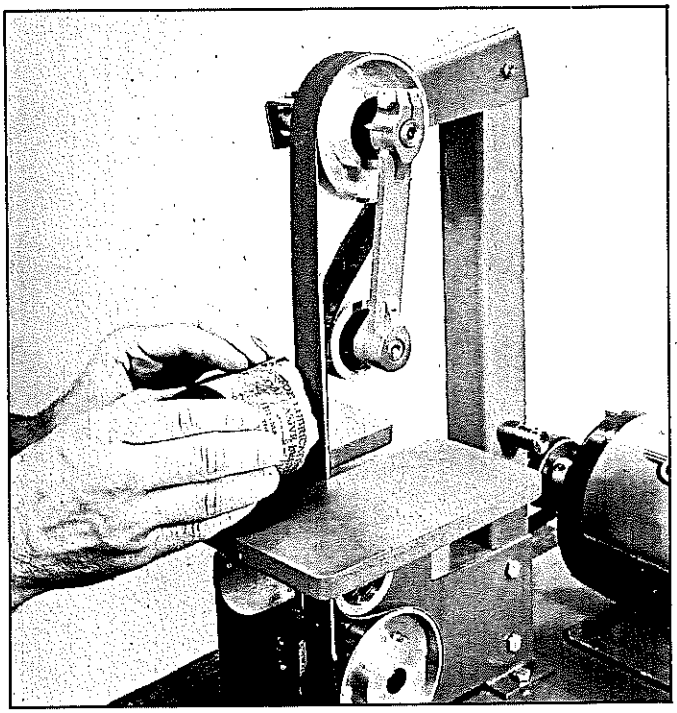

Fig. 8

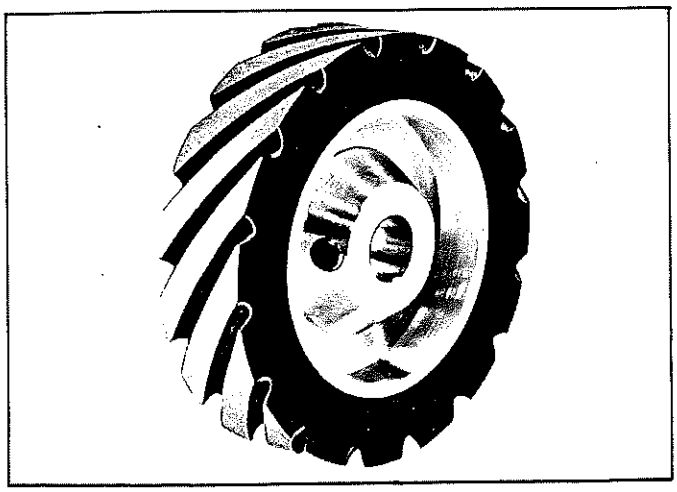

Fig. 9

For aggressive stock removal (foundry work, de-scaling, de-burring, etc.) a coarse grit may be used, and the work held directly on the contact wheel shown in Fig. 9, which we offer as an accessory.

When using the contact wheel, remove the table and platen, install contact wheel on the arbor shaft in place of the 3 1/2" diameter pulley, and run the 1" belt between the contact wheel and the top 3 1/2" diameter pulley. The 2" idler pulleys should not be used with the contact wheel. The machine should be fastened to the extreme right hand side of a wooden work bench and the right mounting bracket should be bent down and bolted to the side of your work bench.

For producing a finish, a fine or extra fine grit is used, backed up by the platen for moderate cutting action, or with the belt not supported when very little stock is to be removed.

Many times a single belt is used for both stock removal and for finish, just by lubricating one half of the belt with light grease for stock removal and the other side or half of the belt with a heavy grease for polishing to bring out a good finish. This can be done only when the parts are very small and need not be moved across the face of the belt.

Otherwise a separate belt should be used for each stage from the first to the last operation. To save time in changing and tracking belts, two machines may be placed side by side and used by one operator.

When an abrasive belt smaller than 1" is desired, the 1" belt can be split. This can be done by turning the belt inside out and with a knife or other sharp instrument cut a slot in the belt at the desired width. Then proceed to tear the belt, as shown in Fig. 10. CAUTION: ONLY TEAR THE BELT A FEW INCHES AT A TIME ONE WAY THEN REVERSE THE TEARING ACTION. THIS METHOD WILL REDUCE THE TENDENCY OF THE BELT TO UNRAVEL.

Fig. 10.

For certain applications a mist coolant attachment (not supplied by us) will be found to be helpful. If the use of a mist coolant causes the Abrasive Belt to slip on the lower drive pulley, this can be corrected by using a "tire" which can be homemade by wrapping the pulley with a piece of coated abrasive belt. The grit is of course turned to the outside and cement should be used sparingly, to avoid lumps under the "tire".

INSIDE SANDING AND GRINDING

When doing inside sanding or grinding, both idler pulleys (A and B) Fig. 11 are used. Idler pulley (B) is moved from the shaft (C) and placed on shaft (D) and idler pulley (A) is moved to the front as shown in Fig. 11. CAUTION: BEFORE MOVING IDLER ARM (E) FIG. 11, LOOSEN SCREW (F). The belt is run on the outside of the two larger pulleys and to the inside of the two idler pulleys. The platen and table can be left on the machine or removed depending on the work you are doing. When doing inside sanding or grinding a 44" abrasive belt is recommended instead of the standard 42" belt, to provide more room between the table and idler pulley (A).

HEAVY WORK WITH PLATEN

When heavy pressure of the work piece against the belt is required, the platen can be supported by the pulley (A), as shown in Fig. 11. This can be done whether the belt is threaded over the pulley (A) as shown, or whether other belt arrangements are used.

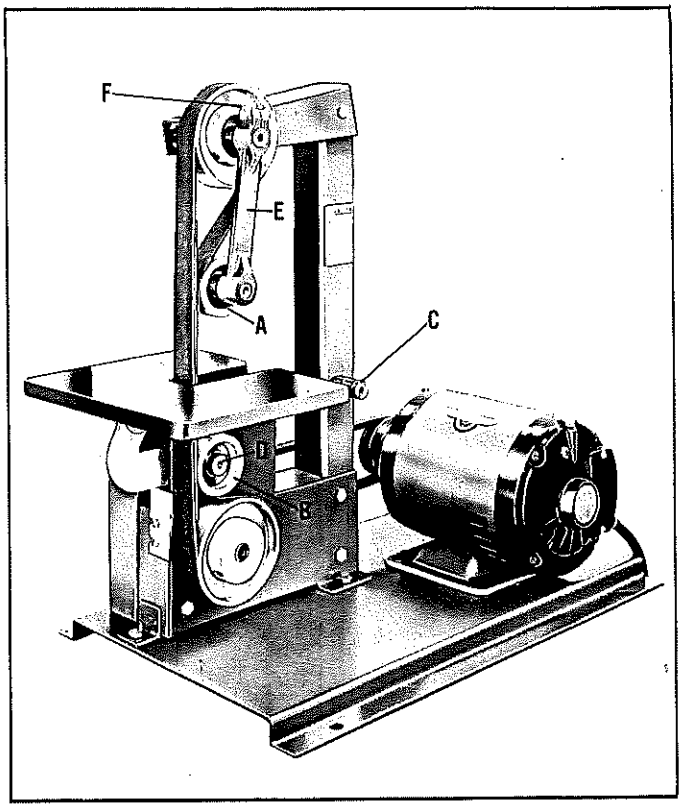

Fig. 11.

SAFETY RECOMMENDATIONS

1. Always wear safety glasses when operating the Sander/Grinder.
2. Remove tie, rings, watch, and roll up sleeves.
3. Make certain abrasive belt is not torn or loose.
4. Keep hands away from abrasive surfaces.
5. Shut off the power and do not leave until the machine has come to a complete stop.
6. When changing belts and making adjustments, disconnect the machine from the power source.