



OPERATING INSTRUCTIONS & PARTS LIST

SANDER-GRINDER

Model 2Z646

FORM
5S1834

DAYTON ELECTRIC MANUFACTURING CO. CHICAGO 60648

FEB. 1973

THE DAYTON SANDER GRINDER IS DESIGNED FOR GRINDING AND POLISHING METAL, AND ROUGH SANDING OR FINISHING WOOD, PLASTICS OR COMPOSITIONS.

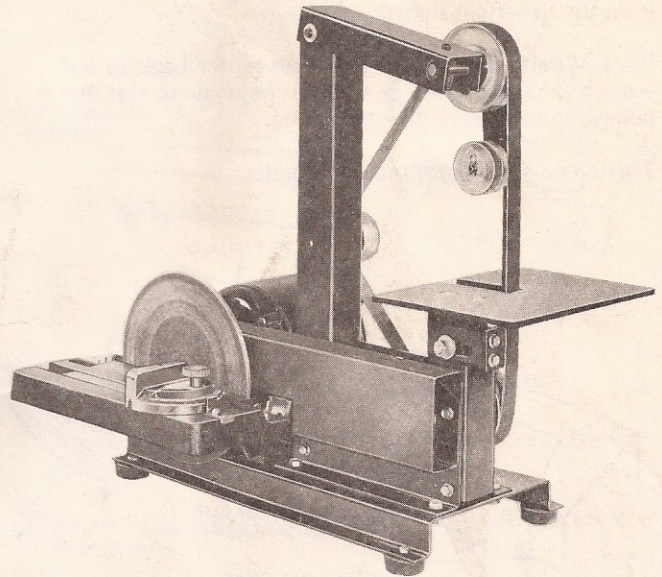
It is ideal for sharpening almost all kinds of cutting tools such as wood chisels and cold chisels, plane irons, scrapers, tin snips, scissors, axes, etc.

Also for touching up power lawn mower blades, and other yard and garden tools.

A NEMA 56 Frame, (with base welded to motor), 1/3 H.P., 1725 RPM. 60 HZ. motor is recommended together with a 3" motor pulley. The abrasive belt will run approx. 3300 FPM. The machine is not designed to run faster than 4000 FPM. And should not be operated in excess of this speed.

IMPORTANT: Before operating your Sander Grinder be sure to read "Safety Instructions to Operator" in this manual.

The top arm assembly is held down with a piece of cord. Hold down on it, remove the cord and ease up on the arm.



MODEL 2Z646

SHOWN WITH MODEL 5K281 MOTOR,
MODEL 2Z647 SANDING DISC AND TABLE,
MODEL 2Z648 MITER GAUGE.

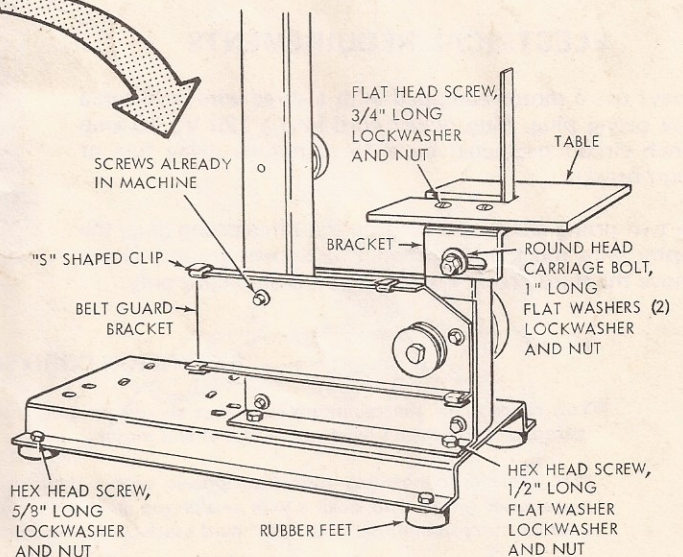
ASSEMBLY

1. Separate all of the parts and identify them.
2. Attach bracket to table using two flat head screws 3/4" long, lockwashers and nuts.
3. Attach table to machine using one round head carriage bolt 1" long, two flat washers, lockwasher and nut.

NOTE: Place the large flat washer 1-1/16" dia. beneath head of bolt before inserting it.

4. Attach rubber feet to base using four hex head screws 5/8" long, lockwashers and nuts.
5. Attach machine to base using four hex head screws 1/2" long, lockwashers and nuts. **NOTE:** If you have purchased the **SANDING DISC AND TABLE ACCESSORY**, attach it now before you install the motor. Refer to instructions furnished with accessory.
6. The belt guard bracket is attached to the machine with the two screws already in the machine.

Remove the screws, attach bracket and replace the screws.



7. Install four "S" shaped clips at the four corners of the bracket. Place clips on edge of bracket and gently tap them all the way in.

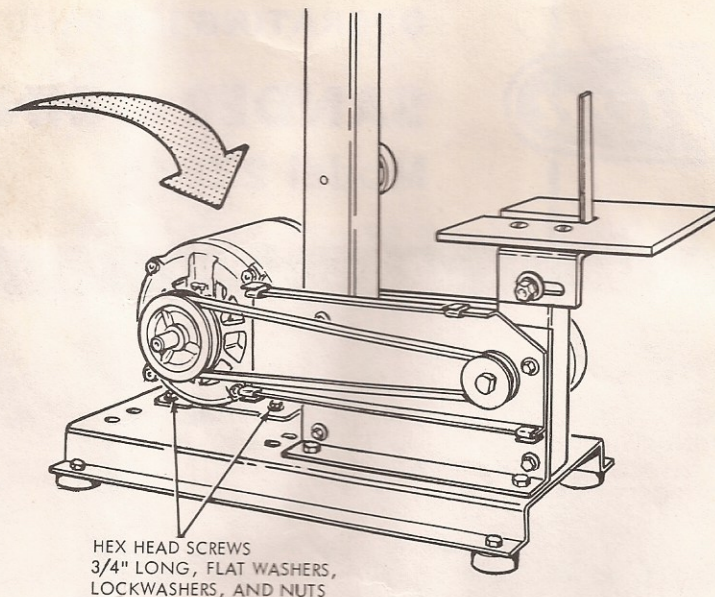
8. Attach motor to base using four hex head screws 3/4" long, flat washers, lockwashers and nuts. NOTE: Place one flat washer beneath head of screw, insert screw, then place another flat washer and lockwasher on the screw. Screw on the nuts but DO NOT TIGHTEN THEM.

9. Place motor pulley on motor shaft and push it back as far as it will go. Make sure set screw is on top of flat surface of shaft. Tighten set screw using 5/32" hex L wrench. (not furnished)

Check the set screw in the machine pulley; make sure it is on the flat and is tight.

10. Place V-Belt over pulleys and push motor back to put tension on belt. Place a straight edge along side the pulleys to make sure they are in line.

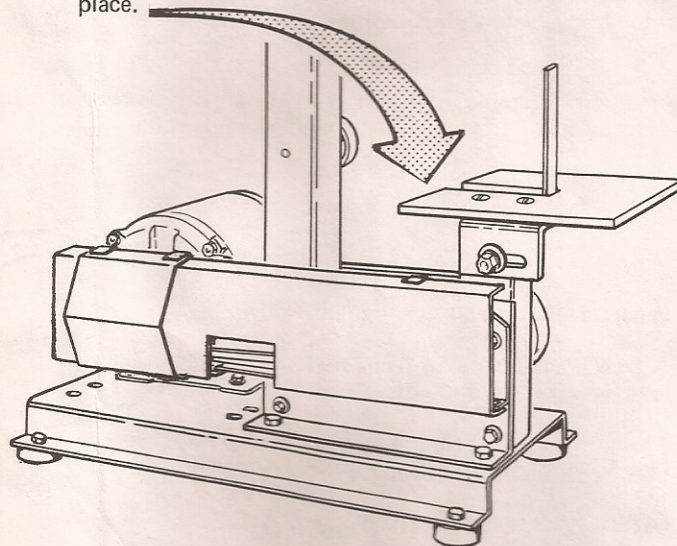
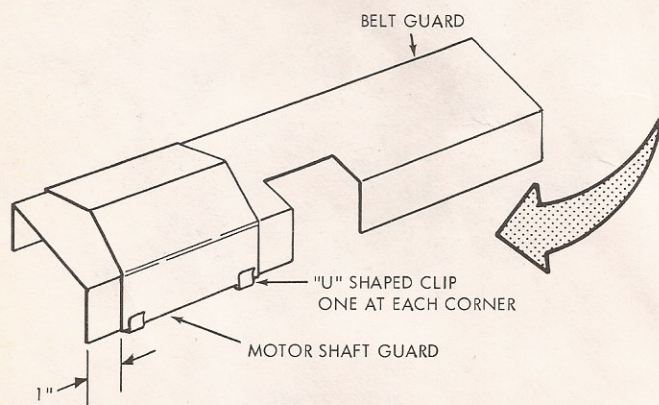
Tighten nuts on motor mounting bolts.



11. Attach motor shaft guard to belt guard with four "U" shaped clips. Position shaft guard 1" from edge of belt guard.

NOTE: If you have purchased the SANDING DISC AND TABLE ACCESSORY, do not attach motor shaft guard.

12. Line up edge of belt guard with bracket, and push into place.



ELECTRICAL REQUIREMENTS

Always use a motor equipped with a three wire cord and a three prong plug. Plug power cord into a 120 V., 15 amp branch circuit protected by a 15 amp time delay fuse or circuit breaker.

If a two prong adapter is used on the three prong plug, the adapter wire must be attached to a known ground. Never remove the third prong. Use 3 wire extension cord only.

EXTENSION CORD SELECTOR CHART

This chart is for the minimum sizes that should be used and are to prevent over-heating and/or excessive voltage drop between power supply outlet and motor.

Wire size for connecting motor to power supply depends on the distance between the two and the horsepower rating. Too small a wire and/or too great a distance will cause serious voltage drops, resulting in unsatisfactory operation. Type "SO" hard usage cord is recommended.

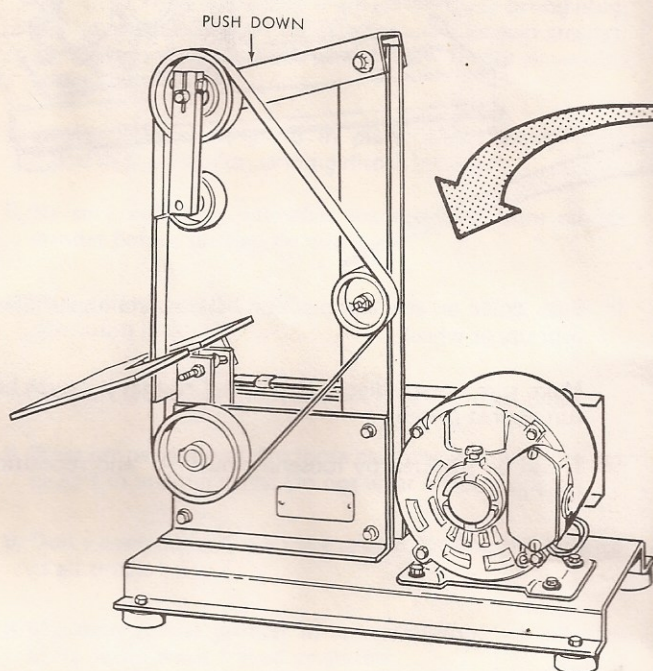
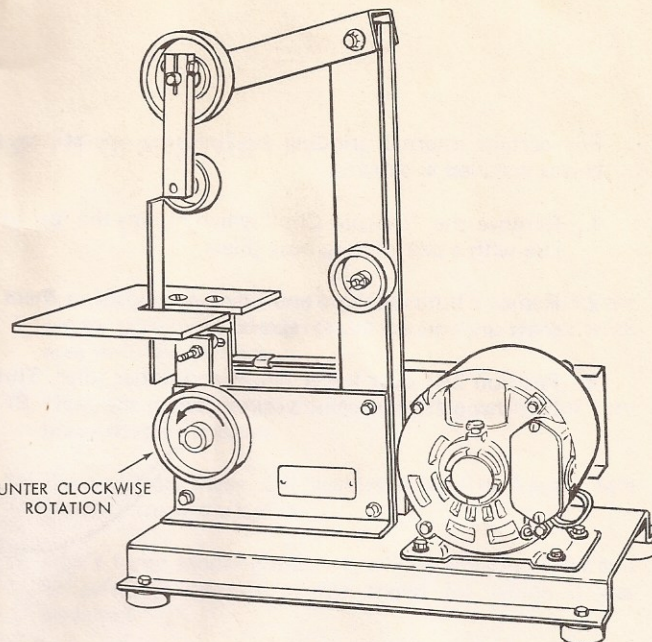
(Third wire of three-conductor cord is for grounding purposes) Numbers are AWG Wire Size

| | Up to 30' | | 20' to 50' | | 50' to 100' | | 100' to 200' | | 200' to 400' | |
|------|-----------|------|------------|------|-------------|------|--------------|------|--------------|------|
| H.P. | 115V | 230V | 115V | 230V | 115V | 230V | 115V | 230V | 115V | 230V |
| 1/3 | 18 | 18 | 18 | 18 | 16 | 18 | 14 | 18 | 10 | 14 |

MOTOR ROTATION

1. Plug in motor cord and turn switch "ON" and immediately turn it "OFF."

Notice rotation of lower wheel. It should rotate counterclockwise. If it does not, then change the motor rotation according to the directions furnished with the motor. **BE SURE TO DISCONNECT POWER CORD FIRST.**



INSTALLING ABRASIVE BELT

1. Notice directional arrow → on inside of belt must point downward when the belt is installed.
2. Loosen nut holding table bracket and tilt the table a few degrees.
3. Push down on arm and position belt over upper and lower wheels and rear idler.

Adjust table 90 degrees to platen using an accurate square.

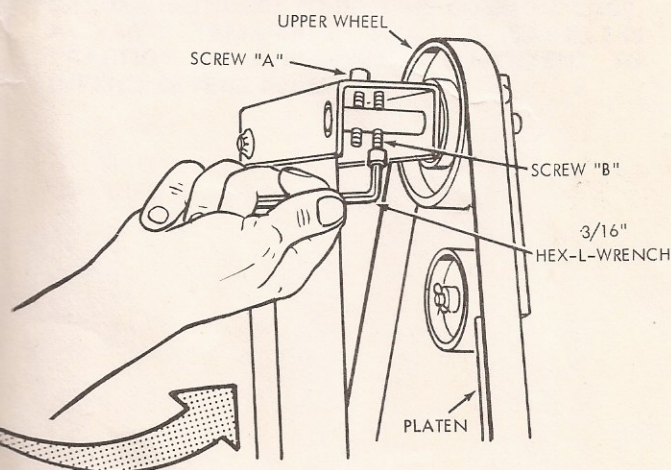
4. Turn motor "ON". Belt should be running in center of upper wheel.

If it runs toward the right or left side of the wheel, loosen screw "A" using 3/16" Hex L-wrench (not furnished).

Turn screw "B" with Hex wrench and notice belt move sideways. Turn screw right or left until belt is running in center of wheel.

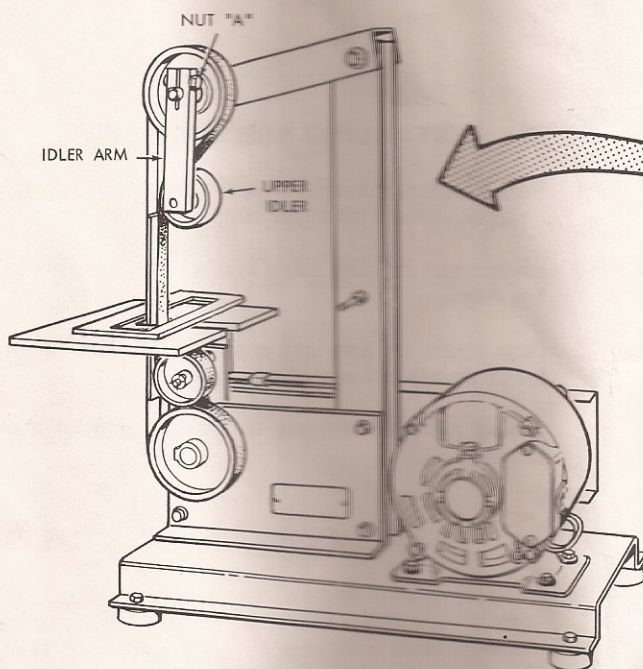
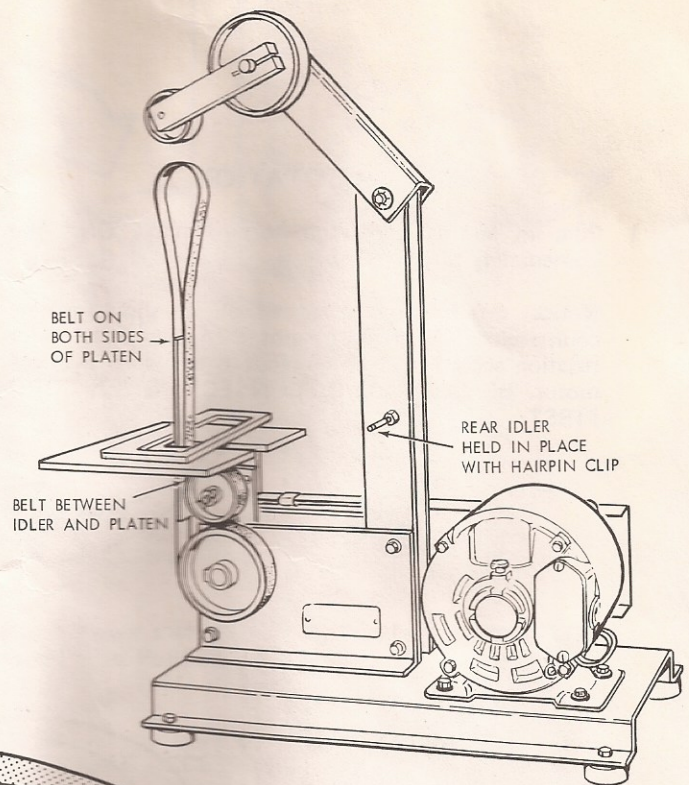
Tighten screw "A".

5. Belt should be even with edges of platen if it is not, loosen screws holding platen and adjust it.



For certain internal grinding or finishing operations, the belt is installed as shown.

1. Remove the "Hairpin Clip" which retains the rear idler. Use with a pair of long nose pliers.
2. Remove both washers and idler, and position them on shaft underneath table; replace clip.
3. Position belt over lower wheel and under idler. Thread belt through opening in workpiece.



Push down on arm and position belt around upper idler and over upper wheel.

Make sure upper idler is positioned so that it causes belt to run against platen.

It can be adjusted by loosening nut "A" and repositioning idler arm.

MAINTENANCE

Keep the Sander/Grinder and motor clean. Frequently blow out dust and chips.

LUBRICATION

The upper and lower wheels run on ball bearings which are permanently lubricated and sealed. They require no further lubrication.

The idlers contain bronze bearings. Occasionally apply a few drops of light machine oil.

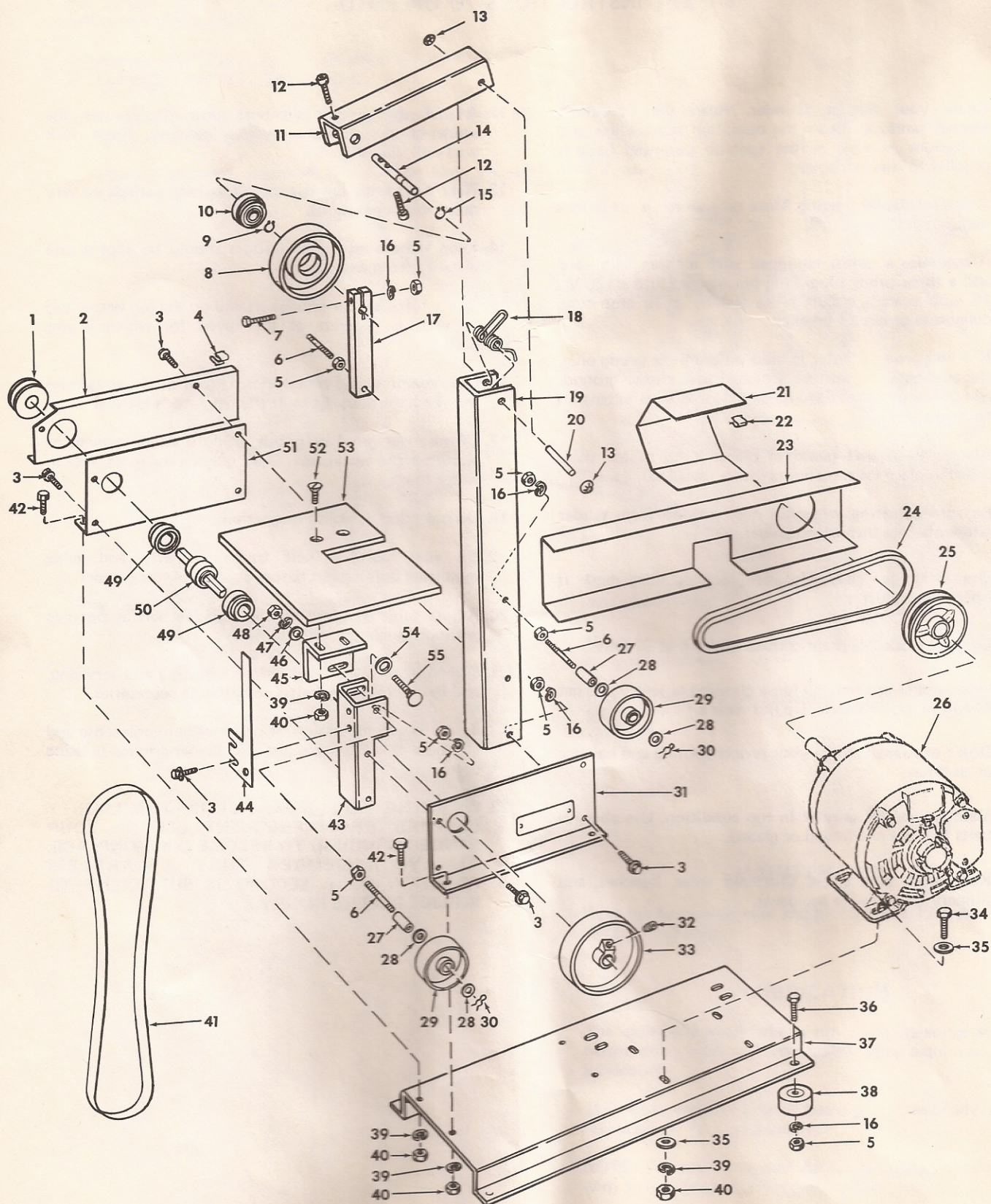
NOTE: Follow motor manufacturers instructions furnished with motor for lubrication information.

SAFETY INSTRUCTIONS TO OPERATOR

1. **Know your Sander Grinder.** Read the Operator's Manual carefully. Learn the operation, application, and limitations as well as the specific potential hazards peculiar to this machine.
2. **Avoid accidental starting.** Make sure switch is off before plugging in Power Cord.
3. **Always use a motor equipped with a three wire cord and a three prong plug.** Plug power cord into a 120 V., 15 amp branch circuit protected by a 15 amp time delay fuse or circuit breaker.

If a two prong adapter is used on the three prong plug, the adapter wire must be attached to a known ground. Never remove the third prong. Use 3 wire extension cords only.
4. **Always keep belt guard in place.** Keep motor shaft guard in place unless sanding disc is installed.
5. **Be sure adjusting wrenches are removed from sander grinder before turning on power.**
6. **Use safety goggles.** Also use face or dust mask if operation is dusty.
7. **Support work.** Maintain control of work at all times.
8. **Wear proper apparel.** No loose clothing or jewelry to get caught in moving parts. Do not wear a tie or gloves.
9. **Don't overreach.** Keep your proper footing and balance at all times.
10. **Maintain sander grinder in top condition.** Use abrasive belts that are not frayed or glazed.
11. **Keep work area clean.** Cluttered areas, benches, and slippery floors invite accidents.
12. **Avoid dangerous environment.** Don't use the sander-grinder in damp or wet locations. Keep work area well illuminated.
13. **Wear ear protection if exposed to long periods of very noisy shop operations.**
14. **Keep visitors away.** All visitors should be kept a safe distance from work area.
15. **Don't force sander-grinder.** It will do the job better and be safer to operate at the speed for which it was designed.
16. **Use recommended accessories.** Use of other accessories may be hazardous. Consult the Operator's Manual.
17. **Do not wet grind or polish, using a steady stream of water on the workpiece.** Only quench the workpiece in water to cool it.
18. **Do not grind or polish magnesium.**
19. **Be sure abrasive belt tracks properly and table mounting bolt is tight before starting sander-grinder.**
20. **Adjust table as close to the abrasive belt as possible without touching.**
21. **Disconnect Power Cord before adjusting and servicing, and before changing belts, or installing accessories.**
22. **Safety is a combination of operator common sense and alertness at all times when the sander-grinder is being used.**
23. **WARNING: DO NOT ALLOW FAMILIARITY (GAINED FROM FREQUENT USE OF YOUR SANDER-GRINDER) TO BECOME COMMONPLACE. ALWAYS REMEMBER THAT A CARELESS FRACTION OF A SECOND IS SUFFICIENT TO INFLICT SEVERE INJURY.**

PARTS LIST — MODEL 2Z646 SANDER/GRINDER



PARTS LIST — MODEL 2Z646 SANDER/GRINDER

When ordering repair parts, always give the following information:

- | | |
|--------------------|---------------------|
| 1. THE PART NUMBER | 3. THE MODEL NUMBER |
| 2. THE PART NAME | 4. THE NAME OF ITEM |

Always order by PART No. . . . Not by KEY No.

| Key No. | Part No. | Description |
|---------|----------|--|
| 1 | 805435 | Pulley 1-1/2 x 1/2 |
| 2 | 805385-1 | Bracket, Guard |
| 3 | 273229 | *Screw, Hex Ind. Washer Hd. Thr'd Cutting 1/4-20 x 1/2 |
| 4 | 805428 | Clip - "S" |
| 5 | 115120 | *Nut, Hex 1/4-20 |
| 6 | 805103 | Shaft, Idler |
| 7 | 9415800 | *Screw, Mach., Hex Hd. 1/4-20 x 1-1/4 |
| 8 | 805342 | Wheel, Top |
| 9 | 38538 | Ring, Retaining 1/2 |
| 10 | 805097 | Bearing, Ball |
| 11 | 805207-1 | Bracket, Top Pivot |
| 12 | 60102 | *Screw, Hex. Soc. Hd. Cap, 1/4-20 x 1 |
| 13 | 60240 | Nut, Push |
| 14 | 805341 | Shaft, Top Arm Idler |
| 15 | 60293 | Ring, Retaining 1/2 |
| 16 | 115109 | *Lockwasher, 1/4 |
| 17 | 805208-1 | Arm, Top |
| 18 | 805091 | Spring, Torsion |
| 19 | 805202-1 | Channel, Column |
| 20 | 805210 | Shaft, Pivot Arm |
| 21 | 805438-1 | Guard, Motor Shaft |
| 22 | 805437 | Clip, "U" |
| 23 | 805386-1 | Guard, Belt |
| 24 | 805390 | Belt, "V", 3/8 x 30 |
| 25 | 805391 | Pulley, "3" |
| 26 | — | †Motor |
| 27 | 805101 | Bearing, Sleeve |
| 28 | 60128 | *Washer, 17/64 x 5/8 x 1/32 |

| Key No. | Part No. | Description |
|---------|----------|---|
| 29 | 805100 | Wheel, Idler |
| 30 | 805104 | Clip, Hairpin |
| 31 | 805204-1 | Plate, R.H. |
| 32 | 102581 | *Screw, Set, Hex Soc. Cup Pt. 5/16-18 x 3/8 |
| 33 | 805105 | Wheel, Drive |
| 34 | 60033 | *Screw, Hex Hd., 5/16-18 x 3/4 |
| 35 | 60013 | *Washer, 11/32 x 7/8 x 1/16 |
| 36 | 60017 | *Screw, Mach., Hex Hd., 1/4-20 x 5/8 |
| 37 | 805113-1 | Base |
| 38 | 805116 | Bumper, Rubber |
| 39 | 131201 | *Lockwasher, 5/16 |
| 40 | 124824 | *Nut, Hex, 5/16-18 |
| 41 | — | †Belt, Abrasive 1 x 42 |
| 42 | 60078 | *Screw, Mach., Hex Hd., 5/16-18 x 1/2 |
| 43 | 805205-1 | Support, Table |
| 44 | 805098 | Platen, Belt |
| 45 | 805108-1 | Bracket, Table |
| 46 | 120394 | *Washer, 3/8 x 7/8 x 5/64 |
| 47 | 131202 | *Lockwasher, 3/8 |
| 48 | 118615 | *Nut, Hex 3/8-16 |
| 49 | 805209 | Cap, Bearing |
| 50 | 805343 | Bearing, Arbor |
| 51 | 805203-1 | Plate, L.H. |
| 52 | 133832 | *Screw, Mach., Flat Hd., 5/16-18 x 7/8 |
| 53 | 805201 | Table |
| 54 | 60292 | *Washer, 9/16 x 1-1/16 x 3/32 |
| 55 | 120915 | *Bolt, Rd. Hd. Carriage, 3/8-16 x 1 |

†See List of Recommended Accessories.

*Standard Hardware Item — May be Purchased Locally.

RECOMMENDED ACCESSORIES

| Part No. | Description |
|----------|----------------------------------|
| 2Z647 | Sanding Disc and Table |
| 2Z648 | Miter Gauge |
| 4X702 | • Abrasive Belt, Coarse, 50 Grit |
| 4X703 | • Abrasive Belt, Medium, 80 Grit |
| 4X704 | • Abrasive Belt, Fine, 120 Grit |
| 5K281 | Motor |

• Sold in Packages of 5

NAMEPLATE

MODEL NO.



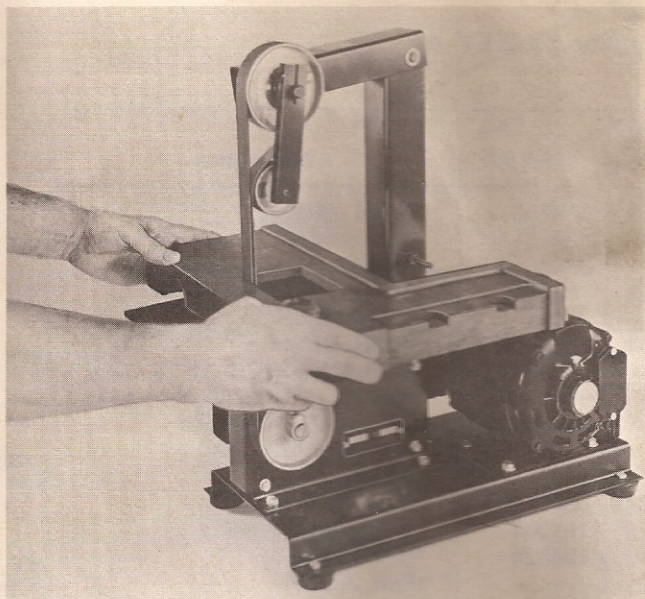
SERIAL NO.

HOW TO ORDER REPAIR PARTS

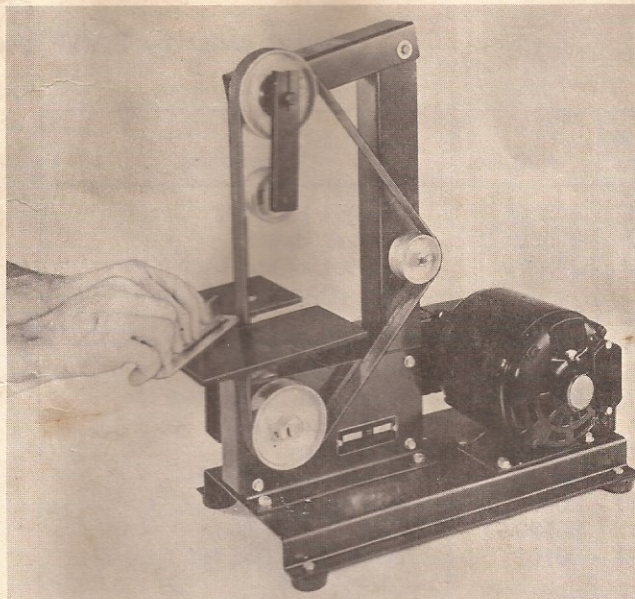
When ordering repair parts please provide following information: Model Number, Serial No. (if any), part name and number as shown in the parts list. Address order to —

DAYTON ELECTRIC MFG. CO. — SERVICE DEPT.
5959 W. Howard St., Chicago, Ill. 60648

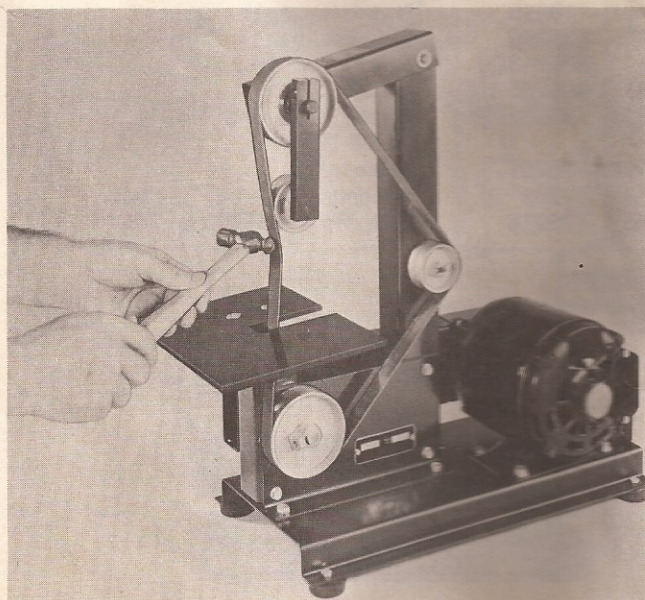
OPERATIONS



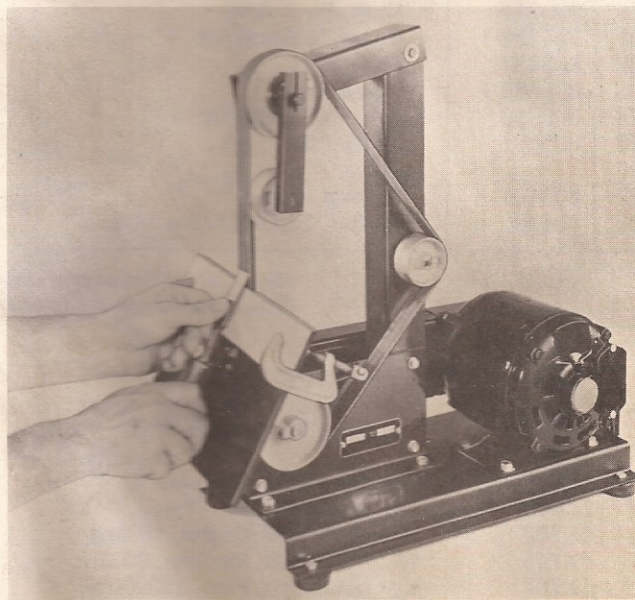
INSIDE WORK
Finishing openings.



DEBURRING METAL
Smoothen rough cut edges; remove sharp corners.



POLISHING
Remove rust and smoothen curved surfaces.

















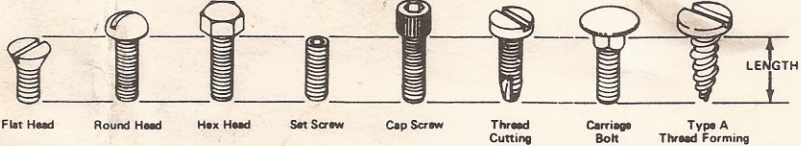




















SHARPENING
Little chance of burning wood working chisels and plane irons. Wood block is attached to table when sharpening butt chisels.

1" SANDER — GRINDER

List Of Loose Parts In This Bag

| DESCRIPTION | PART NO. | QUANTITY |
|----------------------------------|----------|----------|
| Scr. Flat Hd. 5/16-18 x 7/8 | 133832 | 2 |
| Lockwasher 5/16 | 131201 | 10 |
| Nut Hex 5/16-18 | 124824 | 10 |
| Bolt Rd. Hd. Carriage 3/8-16 x 1 | 120915 | 1 |
| Washer 3/8 x 7/8 x 5/64 | 120394 | 1 |
| Nut Hex 3/8-16 | 118615 | 1 |
| Lockwasher 3/8 | 131202 | 1 |
| Pulley 3 x 1/2 | 805391 | 1 |
| Scr. M. Hex Hd. 5/16-18 x 1/2 | 60078 | 4 |
| Bumper, Rubber | 805116 | 4 |
| Scr. M. Hex 1/4-20 x 5/8 | 60017 | 4 |
| Lockwasher 1/4 | 115109 | 4 |
| Nut Hex 1/4-20 | 115120 | 4 |
| Washer 11/32 x 7/8 x 1/16 | 60013 | 8 |
| Clip "S" | 805428 | 4 |
| Clip "U" | 805437 | 4 |
| Screw 5/16-18 x 3/4 | 60033 | 4 |
| Washer 9/16 x 1 1/16 x 3/32 | 60292 | 1 |

| | | |
|--|--|---|
| SET SCREWS  Socket Set Screw (for Set Screw Wrench)  Headless Set Screw (slotted) | WASHER TYPES AND DETAILS  Common Lock Washer  Plain Flat Washer  Lock Washer (external-internal type)  Lock Washer (external type)  Lock Washer (internal type) | BOLT HEAD DETAILS AND STYLES  Square Head (chamfered)  Hexagon Head (chamfered)  Round Head (slotted)  Flat Head (slotted)  Truss Head (plain or slotted)  Pan Head (slotted)  Fillister Head (slotted)  Flat Head (Phillips recessed)  Socket Head (cap screw for Set Screw Wrench) |
| PACKED BY EMPLOYEE NO. _____ PLEASE REPORT SHORTAGE IMMEDIATELY, GIVING EMPLOYEE'S NO., MODEL NO., DESCRIPTION AND PART NO. OF MISSING PARTS. FORM NO. SP3862 | HOW TO MEASURE  | |
| | <table border="1"> <tr> <td> MISCELLANEOUS  Retaining Ring  Set Screw Wrench </td> <td> NUT STYLES  Speed Nut  Push Nut  Hexagon Nut  Square Nut  Wing Nut  Hex Cap Nut </td> </tr> </table> | MISCELLANEOUS  Retaining Ring  Set Screw Wrench |
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