

# SUNEX<sup>®</sup>

## T O O L S

### 5000A 16 SPEED DRILL PRESS



### Caution:

Read and follow all safety rules and operating instructions before assembly and first use of this equipment

### WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

### SPECIFICATIONS

Power .....	3/4 HP	Maximum Spindle Stroke.....	3-1/8"
Power Source .....	115V	Diameter of Column .....	2-3/4"
Spindle Taper.....	MT2	Table Diameter.....	11-1/2"
Chuck.....	5/8"	Height.....	61-13/16"
Speed Range.....	200-3850 RPM	Shipping Weight .....	146 Lbs.

# **WARNING**



## **ATTENTION: READ INSTRUCTIONS BEFORE OPERATING DRILL PRESS. FAILURE TO OBSERVE THESE WARNINGS COULD RESULT IN INJURY.**

- It is the responsibility of the owner to make sure all personnel read this manual prior to using the device. It is also the responsibility of the device owner to keep this manual intact and in a convenient location for all to see and read. If the manual or product labels are lost or not legible, contact Sunex Tools for replacements. If the operator is not fluent in English, the product and safety instructions shall be read and discussed with the operator in the operator's native language by the purchaser/owner or his designee, making sure that the operator comprehends its contents.
- **DO NOT USE** until unit is completely assembled and installed according to instructions.
- **ALWAYS** wear safety eye, ear and face protection (users & bystanders).
- **DO NOT WEAR** gloves, necktie or loose clothing.
- **BE SURE DRILL BIT** or cutting tool is securely locked in chuck.
- **USE RECOMMENDED SPEED** for drill accessory and workpiece material.
- **ADJUST TABLE OR DEPTH STOP** to prevent drilling into table work surface.
- **NEVER USE YOUR HANDS TO HOLD** workpiece during drilling. Clamp workpiece, use a vise or brace against column to prevent rotation.
- **NEVER OPERATE** drill press if any part is damaged or broken until it is properly repaired or replaced.
- **NEVER PLACE YOUR FINGERS** in a position where drill or cutting tool could contact them if part should shift unexpectedly.
- **NEVER PERFORM LAYOUT**, assembly or setup work on drill press with cutting tool rotating.
- **SHUT OFF POWER**, remove drill or cutting tool, and clean table before leaving machine.
- **GUARD AGAINST** electric shock. Prevent body contact with grounded surfaces such as pipes, radiators, ranges and refrigerator enclosures.



**WARNING:** This product can expose you to chemicals including nickel, which is known to the State of California to cause cancer and birth defects or other reproductive harm.



### **WARNING: ALWAYS KEEP ALERT.**

Do not allow familiarity gained from frequent use of radial drill press to cause a careless mistake. A careless fraction of a second is sufficient to inflict severe personal injury.

# SAFETY RULES



## General Safety Rules:

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet location, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept a safe distance from work area.
6. MAKE WORKSHOP CHILD PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. Don't force tool or attachment to do a job for which it was not designed.
8. USE RIGHT TOOL. It will do the job better and safer at the rate for which it was designed.
9. WEAR PROPER APPAREL. No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. ALWAYS USE SAFETY GLASSES. Common eyeglasses only have impact resistant lenses, they are NOT safety glasses.
11. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
12. DON'T OVERREACH. Keep proper footing and balance at all times.
13. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
14. DISCONNECT TOOLS before servicing; when changing all accessories.
15. REDUCE THE RISK OR UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
16. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
17. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
18. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function, check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
19. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.
20. People with pacemakers should consult their physician before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
21. If an extension cord is required, it must be of the proper size and type to supply the correct current to the tool without heating up. Otherwise the extension cord could melt and catch fire, or cause electrical damage to the tool. This tool requires the use of an extension cord of 0 to 12 amps capability (up to 50 feet) with wire size rated at 16 AWG. Longer extension cords require larger size wire (smaller AWG number). If you are using the tool outdoors, use an extension cord rated for outdoor use (signified by "WA" on the jacket). NOTE: Performance of this tool may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.
22. Wear a full face shield if you are producing metal filing or wood chip.

## Special Safety Rules for Drill Press:

1. Caution: This drill press is intended for use only with drill bits. The use of other accessories may be hazardous.
2. Correct drill speeds: Factors which determine the best speed to use in any drill press operation are: Kind of material being worked, size of the hole, type of drill or other cutter, and quality of cut desired. The smaller the drill, the greater the required RPM. In soft materials, the speed should be higher than for hard materials.
3. Drilling in metal: Use clamps to hold the work when drilling in metal. The work should never be held with the bare hands. The flutes of the drill may seize the work at any time, especially when breaking through the stock. If the piece is whirled out of the operator's hand, he may be injured; in any case, the drill will be broken when the work strikes the column.
4. The work must be clamped firmly while drilling: Any tilting, twisting, or shifting results not only in a rough hole, but also increases drill breakage. For flat work, lay the piece on a wooden base and clamp it firmly down against the table to prevent it from turning. If the piece is of irregular shape and cannot be laid flat on the table, it should be securely blocked and clamped.
5. The chuck shall be securely fastened to the spindle and so that it can't separate from spindle.
6. Remove key from chuck after adjustment.
7. The drill press is to be disconnected from the power supply while the motor is being mounted, connected, or reconnected.
8. Secure the drill press to the supporting structure if, during normal operation, there is any tendency for the drill press to tip over, slide, or walk on the supporting surface.
9. The set screws of head frame should be secured tightly before using this machine.
10. Connect to power supply protected by a circuit breaker or time delay fuse.
11. Fasten base to floor before using the drill press.
12. Use only the chuck key provided by the manufacturer or a duplicate of it.

## PARTS

Unpack carton, check your machine to see parts listed below:

### A. Main Parts

- |                           |       |
|---------------------------|-------|
| 1. Head Assembly          | 1 Pc. |
| 2. Column with Flange     | 1 Pc. |
| 3. Working Table Assembly | 1 Pc. |
| 4. Base                   | 1 Pc. |

### B. Accessories (in one separate box)

- |                               |        |
|-------------------------------|--------|
| 1. Chuck and Key              | 1 Set  |
| 2. Feed handles with knobs    | 3 Pcs. |
| 3. Column Lock Handle         | 1 Pc.  |
| 4. Column Flange Bolts        | 4 Pcs. |
| 5. Allen wrenches (3mm & 5mm) | 1 Pc.  |
| 6. Arbor                      | 1 Pc.  |
| 7. Cotter                     | 1 Pc.  |
| 8. Crank handle               | 1 Pc.  |

## ASSEMBLY

### 1. Assemble the Column

- Place column assembly on base and align holes in column support with holes in base.
- Secure the column with four bolts and washers provided.

### 2. Install Table

- Attach crankhandle to worm pinion.
- Remove rack ring and rack from column by undoing set screw with allen wrench.
- Insert the rack half way into the table assembly and engage rack teeth with helical gear teeth.
- Maintain rack engaged with helical, slide rack and table assembly over column and replace rack ring.
- Secure table assembly with column lock handle.

### 3. Attach Head to Column

- Carefully put the head assembly over column and slide it onto column into position. Align head frame with table and base. Fix set screw in left side of head to lock head into position then tighten with allen wrench.

### 4. Install the Feeding Handles

- Screw the knobs to the feeding handles.
- Screw each feeding handle into hub of pinion shaft.

### 5. Attach the Chuck

- Position working table up about 5" (125mm) from the tip of spindle.
- Remove all oil and grease from tapers on arbor and drill chuck.
- Slide short end of arbor into chuck. Place long end inside spindle.
- Open chuck jaws completely by turning attached chuck key counter clockwise to the end.
- Put a piece of scrap wood on the table to protect chuck nose.
- Pull feeding handle down pressing the chuck against the scrap wood until arbor is secure on the spindle.

## ADJUSTMENT

### 1. Table Adjustment

#### A. Mounting the drill press:

Your drill press must be securely fastened by the two base holes to a floor with heavy-duty fasteners. This will prevent the drill press from tipping over, sliding, or walking during operation.

#### B. Height Adjustment:

To adjust up or down, loosen the column lock handle, then turn crank handle to desired height. Retighten column lock handle before drilling.

#### C. Tilting Adjustment:

Loosen pivot bolt. Remove small locator pin. Tilt table to desired angle up to 45° and retighten bolt. Re-insert locator pin when returning table to zero degrees.

#### D. Swing 360°:

Loosen lock handle then swing table to appropriate position and retighten.

#### E. Rotate 360°:

Loosen table lock handle, rotate table to desired position and retighten.

### 2. Depth Adjustment

#### A. Feed Depth Adjustment:

Loosen scale set knob on feed shaft assembly. Rotate spindle gauge to desired depth and tighten scale set knob.

#### B. Stationary Depth:

Loosen scale set knob. Turn feed shaft to lowest point then rotate spindle depth to desired depth and retighten scale set knob.

### 3. Speed Adjustment

#### A. Loosen the slide bar bolt on right hand side of head.

#### B. Slide motor toward front of drill press and tighten the slide bar bolt.

#### C. Relocate the belts to the correct pulleys for the required spindle speed.

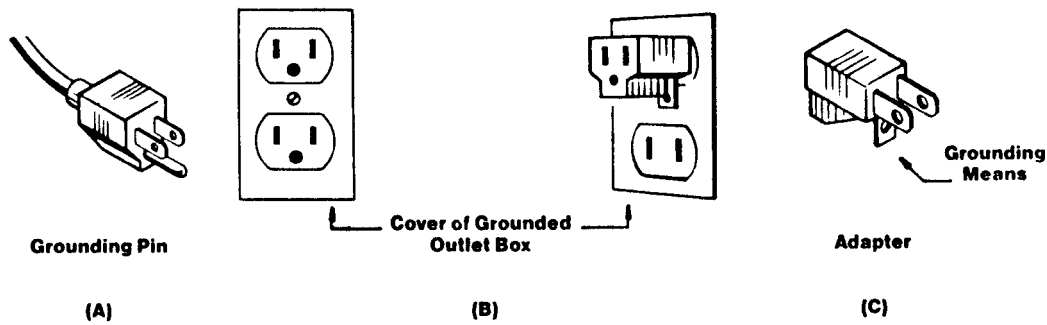
#### D. Loosen slide bar bolt and slide motor toward rear of drill press and tighten the slide bar bolt.

# GROUNDING

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided if it will not fit the outlet. Have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Repair or replace damaged or worn cord immediately.
6. **For 115V Models:**

The tool is intended for use on a circuit that has an outlet that looks like the one illustrated in sketch A. The tool has a grounding plug that looks like the plug illustrated in sketch A. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a 1-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear lug, extending from the adapter, must be connected to a permanent ground such as a properly grounded outlet box.

**Caution:** In Canada only the grounding shown in figure A is acceptable. The extension cords should be CSA certified S.J.T. type or something better.

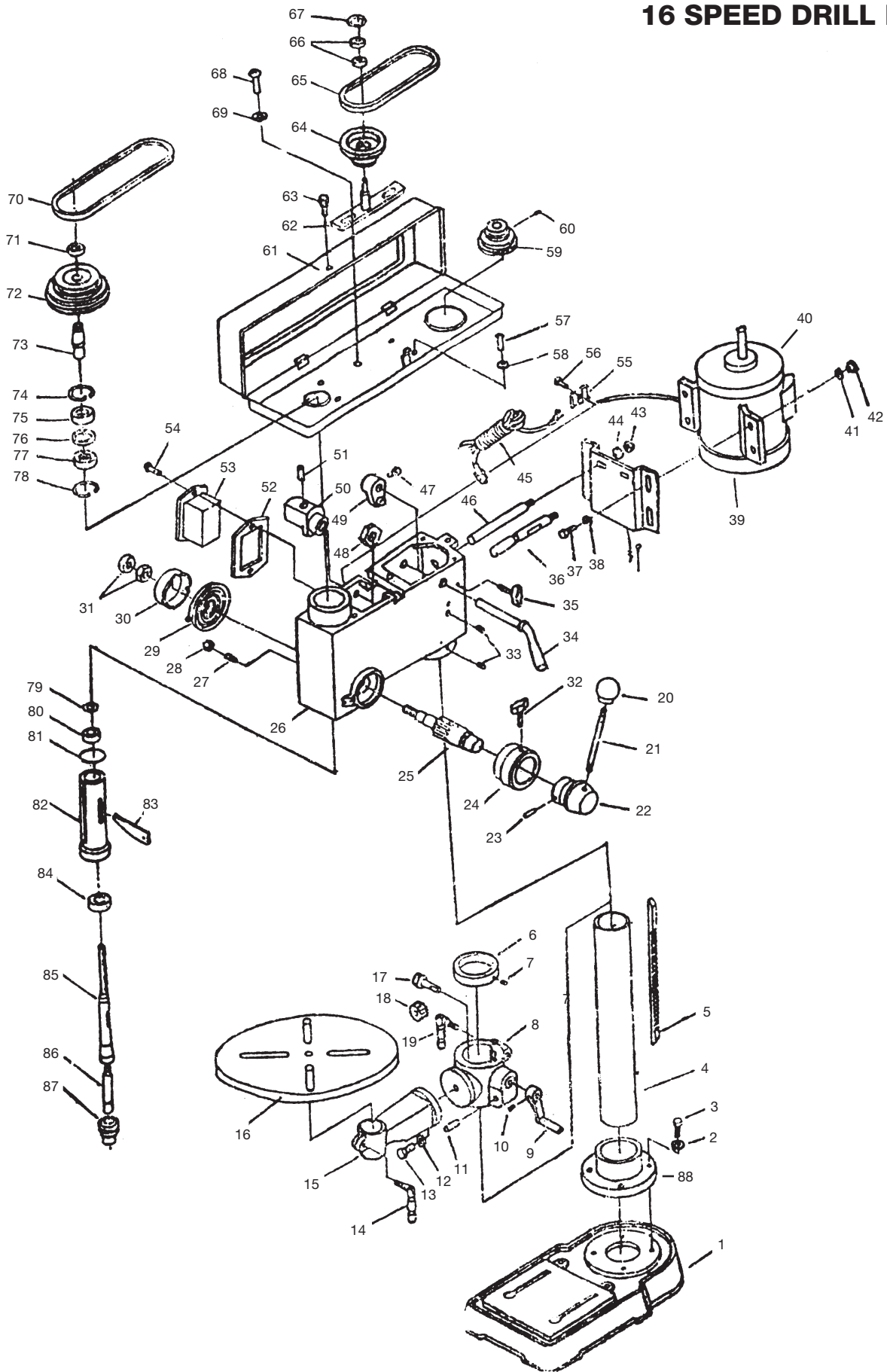


## Use Proper Extension Cord:

If necessary use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. The following table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Extension Cord Length	Wire Size, A.W.G.
25 Feet	18
50 Feet	18
75 Feet	16
100 Feet	14
150 Feet	12

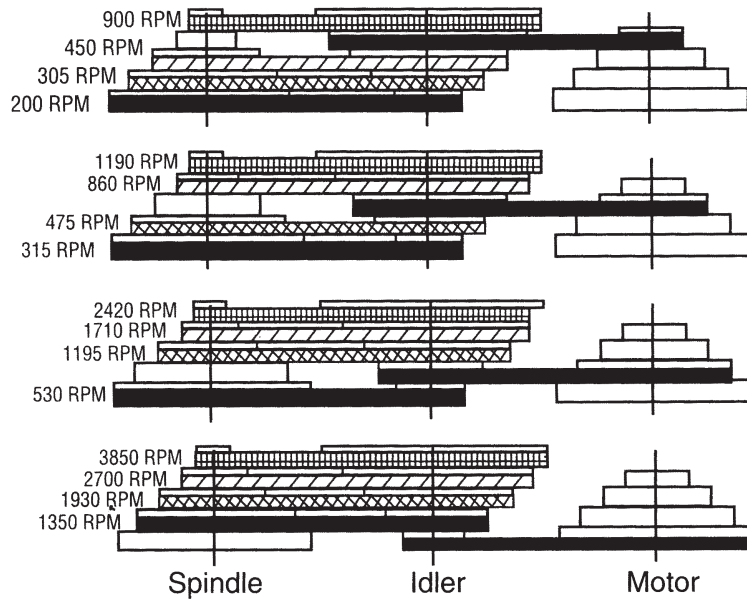
# 5000A 16 SPEED DRILL PRESS



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ITEM NO.	PART NO.	DESCRIPTION	QTY.	ITEM NO.	PART NO.	DESCRIPTION	QTY.
1		Base	1	45		Power Plug Cord	1
2		Washer	4	46		Motor Bracket Support	1
3		Bolt	4	47		Bolt	1
4		Column Support	1	48		Clamp Nut Cap	2
5	RS5000A05	Rack	1	49		Adjusting Lever	1
6	RS5000A06	Rack Collar	1	50		Clamp	2
7		Screw	1	51		Screw	2
8	RS5000A08	Table Support w/Indicator and incl. #'s 9, 10, 18, & 19	1	52		Switch Washer	1
9		Crank	1	53	RS5000A53	Switch	1
10		Bolt	1	54		Screw	2
11		Gear Pin	1	55		Cord Clamp	1
12		Washer	1	56		Screw	1
13		Bolt	1	57		Washer	4
14		Table Clamp	1	58		Screw	4
15	RS5000A15	Table Arm	1	59	RS5000A59	Motor Pulley	1
16		Table	1	60		Screw	1
17		Worm	1	61		Pulley Cover	1
18		Helical Gear	1	62		Adjusting Pulley	1
19		Column Clamp	1	63		Knob	1
20		Knob (incl. #21)	3	64	RS5000A64	Center Pulley	1
21	RS5000A21	Handle Bar (incl. #20)	3	65	RS5000A65	V-belt (C625mm)	1
22		Feed Shaft	1	66	RS21109	Ball Bearing (6202ZZ)	2
23		Cylinder Bolt	1	67		Retaining Ring	1
24		Depth Stop Ring w/Scale	1	68		Screw	2
25		Pinion Shaft	1	69		Washer	2
26		Head	1	70	RS5000A70	V-Belt (C560mm)	1
27		Screw	1	71		Nut	1
28		Nut	1	72	RS5000A72	Spindle Pulley	1
29	RS5000A29	Tension Spring (incl. #30)	1	73		Pulley Insert	1
30		Spring Cap (incl. #29)	1	74		Retaining Ring	1
31		Nut	2	75	RS50528	Ball Bearing (6005ZZ)	1
32		Depth Screw Lock/Indicator	1	76		Spacer	1
33		Screw	2	77	RS50528	Ball Bearing (6005ZZ)	1
34		Belt Tension Handle	1	78		Retaining Ring	1
35		Motor Adjusting Knob	2	79		Axle Shield Ring	1
36		Motor Bracket Support	1	80	RS5000A80	Ball Bearing	
37		Bolt	4	81		Washer	1
38		Washer	4	82		Guide Tube	1
39		Motor Mount	1	83	RS5000A83	Drill Key	1
40	RS5000A40	Motor	1	84	RS50528	Ball Bearing (6005ZZ)	1
41		Elastic Washer	4	85	RS5000A85	Spindle (incl. #86)	1
42		Nut	4	86		Arbor (incl. #85)	1
43		Nut	2	87	RS5000A87	Chuck & Key	1
44		Washer	2	88		Column Base	1
				not shown	RS5000APL	Product Label	1

## SPINDLE SPEED CHART



The proper drill speed for a given drill bit size is as follows:

Drill Diameter		Softwood	Hardwood	Plastic Rubber	Cast Iron	Soft Metals	Mild Steel	Hard Steel
mm	inch							
2	1/16	3850	3850	3850	3850	3850	3850	2420
3	1/8	3850	2420	2420	2420	3850	2420	1190
4	5/32	3850	2420	2420	2420	3850	2420	860
5	3/16	2700	1930	1930	1710	3850	1710	530
6	1/4	2420	1710	1710	1350	3850	1350	530
7	9/32	2420	1710	1710	1350	3850	1350	530
8	5/16	1930	1350	1350	1190	3850	1190	530
9	11/32	1710	1190	1190	900	3850	900	305
10	3/8	1710	1190	1190	900	3850	900	305
11	7/16	1350	900	900	530	3850	530	305
12	15/82	1190	900	900	530	2700	530	305
13	1/2	1190	900	900	530	2700	530	200
14	9/16	900	860	860	530	2700	530	200
16	5/8	900	530	530	530	2700	530	200



## OPERATION

### 1. Installing Drill Bits

Insert drill into chuck jaws about 1" (25mm). When using a small drill do not insert it so far that the jaws touch the arbor of the drill. Make sure that the drill is centered in the chuck before tightening the chuck with the key. The key is spring loaded so that it has to be removed before starting the drill press.

### 2. Drilling

Use clamps to hold the work when drilling. The work should never be held in the bare hand. The lips of the drill may seize the work at any time, especially when breaking through the stock. If the piece is whirled out of the operator's hand, injury may occur. Also, the drill will be broken when the work strikes the column. The work must be clamped firmly while drilling. Any tilting, twisting or shifting results not only in a rough hole, but also increases drill breakage. For flat work, lay the piece on a wooden base and clamp it firmly down against the table to prevent it from turning.

### Using Vise

For smaller workpieces that cannot be clamped to the table, use a drill press vise (not included). The vise must be clamped or bolted to the table.

### Positioning Workpiece

Always place a piece of wood (or plywood) on the table. This will prevent "splintering" or making heavy burrs on the underside of the workpiece as the drill breaks through. The wood must contact the left side of the column.

### Morse Taper Drill Bits

To use Morse taper bits, remove chuck and taper. To remove taper and chuck adjust stationary depth to 3" (74mm) (see depth instructions). Turn spindle manually, lining up spindle and quill key hole. Place the wedged end of the cotter in the quill key hole and lightly tap until the arbor and chuck fall out. Place tapered bit into the spindle hole, twist and push upwards until bit is snug. Place a block of wood on the table and crank up table until the tapered bit is firmly into the spindle.

### Round Out Tolerance

For drilling operations requiring close tolerances, place drill blank in the chuck and check round out with a dial indicator. If the round-out is not within desired tolerance, tap the chuck bottom with a rubber or leather mallet until you get the desired tolerance.

## MAINTENANCE

Frequently blow out any dust that may accumulate inside the motor.

A coat of automobile-type wax applied to the table and column will help to keep the surfaces clean.

If the power cord is worn or cut, or damaged in any way, have it replaced immediately.

### Lubrication

All of the ball bearings are packed with grease at the factory. They require no further lubrication

Periodically lubricate the gear and rack table elevation mechanism, the splines (grooves) in the spindle, and the rack (teeth on the quill).

## TROUBLE SHOOTING GUIDE

TROUBLE	PROBABLE CAUSE	REMEDY
Noisy operation	<ul style="list-style-type: none"> <li>A) Incorrect belt tension</li> <li>B) Dry spindle</li> <li>C) Loose pulley</li> <li>D) Loose belt</li> <li>E) Bad bearing</li> </ul>	<ul style="list-style-type: none"> <li>A) Adjust tension</li> <li>B) Remove spindle/quill assembly - lubricate</li> <li>C) Tighten Pulley</li> <li>D) Adjust belt tension</li> <li>E) Replace bearing</li> </ul>
Excessive drill wobble	<ul style="list-style-type: none"> <li>A) Loose chuck</li> <li>B) Worn spindle shaft or bearing</li> <li>C) Bad chuck</li> </ul>	<ul style="list-style-type: none"> <li>A) Tighten by pressing chuck down against table</li> <li>B) Replace spindle shaft or bearing</li> <li>C) Replace chuck</li> </ul>
Motor won't start	<ul style="list-style-type: none"> <li>A) Power supply</li> <li>B) Motor connection</li> <li>C) Switch connections</li> <li>D) Motor windings burned</li> <li>E) Bad switch</li> </ul>	<ul style="list-style-type: none"> <li>A) Check power cord</li> <li>B) Check motor connection</li> <li>C) Check switch connections</li> <li>D) Replace motor</li> <li>E) Replace switch</li> </ul>
Drill binds in workpiece	<ul style="list-style-type: none"> <li>A) Excessive pressure on feed handle</li> <li>B) Loose belt</li> <li>C) Loose drill</li> <li>D) Speed too fast</li> </ul>	<ul style="list-style-type: none"> <li>A) Apply less pressure</li> <li>B) Check belt tension</li> <li>C) Tighten drill with key</li> <li>D) Change speed</li> </ul>
Drill burns or smokes	<ul style="list-style-type: none"> <li>A) Incorrect speed</li> <li>B) Chips are not discharging</li> <li>C) Dull drill</li> <li>D) Needs lubrication</li> <li>E) Feed pressure wrong</li> </ul>	<ul style="list-style-type: none"> <li>A) Refer to speed chart</li> <li>B) Clean drill</li> <li>C) Check sharpness &amp; taper</li> <li>D) Use lubrication while drilling</li> <li>E) Apply less pressure</li> </ul>
Table difficult to raise	<ul style="list-style-type: none"> <li>A) Needs lubrication</li> <li>B) Bent rack</li> <li>C) Table lock tightened</li> </ul>	<ul style="list-style-type: none"> <li>A) Lubricate with light oil</li> <li>B) Straighten Rack</li> <li>C) Loosen clamp</li> </ul>