

Operator's Manual

Drill Press



CAUTION: Read and follow all Safety Rules and Operating Instructions before First Use of this Product. Keep this manual with tools.

1305-ZJW4116/1-ZJW5120/1

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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, cement and other masonry products
- 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 dust masks that are specially designed to filter out microscopic particles.

PRODUCT SPECIFICATIONS

(Please choose proper power source, voltage and frequency that are shown in the label for your drill press.)

Model		ZJW4116/1 ZJW5116/1	ZJW4120/1 ZJW5120/1
Motor		550W	750W
Chuck		16mm	20mm
Spindle Travel		82mm	82mm
Spindle taper		MT2	MT2
Speed Change		Variable	Variable
Speed	50Hz	400-2000 RPM	400-2000 RPM
	60Hz	480-2400 RPM	480-2400RPM
Swing		324 mm	360 mm
Table Size		290x290 mm	305x305 mm
Base Size		420x250 mm	460x280 mm
Column		72mm	72mm

WARNING: To avoid electrical hazards, fire hazards, or damage to the tool, use proper circuit protection.

Use a separate electrical circuit for your tools. To avoid shock or fire, replace power cord immediately if it is worn, cut or damaged in any way.

SAFETY

GENERAL SAFETY INSTRUCTIONS

BEFORE USING THE DRILL PRESS

Safety is a combination of common sense, staying alert and knowing how to use this Drill Press.

WARNING: To avoid mistakes that could cause serious injury, do not plug the Drill Press in until you have read and understood the following:

1. **READ** and become familiar with the entire Operator's Manual. **LEARN** the tool's application, limitations and possible hazards.
2. **KEEP GUARDS IN PLACE** and in working order.
3. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form a habit of checking to see that keys and adjusting wrenches are removed from the tool before turning ON.
4. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
5. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

6. **KEEP CHILDREN AWAY.** All visitors should be kept at a safe distance from work area.
7. **MAKE WORKSHOP CHILDPROOF** with padlocks.
8. **DON'T FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.
9. **USE THE RIGHT TOOL.** Do not force tool or attachment to do a job for which it was not designed.
10. **USE PROPER EXTENSION CORD.** 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 result in a drop in line voltage and in loss of power that will cause the tool to overheat.
11. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry that may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
12. **ALWAYS WEAR EYE PROTECTION.** Any Drill Press can throw foreign objects into the eyes that could cause permanent eye damage. ALWAYS wear Safety Goggles (not glasses). Everyday eyeglasses have only impact-resistance lenses. They ARE NOT safety glasses.
13. **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.
14. **DISCONNECT TOOLS** before servicing; when changing accessories such as blades, bits, cutters, and the like.
15. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in OFF position before plugging in.
16. **USE RECOMMENDED ACCESSORIES.** Consult the Operator's Manual for recommended accessories. The use of improper accessories may cause serious injury.
17. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
18. **CHECK FOR 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. **DON'T OVERREACH.** Keep proper footing and balance at all times.
21. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
22. **DO NOT** use power tools in the presence of flammable liquids or gases.
23. **DO NOT OPERATE** the tool if you are under the influence of any drugs, alcohol or medication that could affect your ability to use the tool properly.
24. **ALWAYS** operate the Drill Press in a well-ventilated area and provide for proper dust removal. Use dust collection systems whenever possible. Dust generated from certain materials can be hazardous to your health.

SPECIFIC SAFETY INSTRUCTIONS FOR THE DRILL PRESS

WARNING: For your own safety, do not try to use your drill press or plug it in until it is completely assembled and installed according to the instructions, and until you have read and understood this instruction manual.

1. **THIS DRILL PRESS** is intended for use in dry conditions, indoor use only.
2. **WEAR EYE PROTECTION.** USE a face or dust mask along with safety goggles if drilling operation is dusty. USE ear protectors, especially during extended periods of operation.
3. **DO NOT** wear gloves, neckties, or loose clothing.
4. **DO NOT** try to drill material too small to be securely held.
5. **ALWAYS** keep hands out of the path of a drill bit. Avoid awkward hand positions where a sudden slip could cause your hand to move into the drill bit.
6. **DO NOT** install or use any drill bit that exceeds 175mm in length or extends 150mm below the chuck jaws. They can

suddenly bend outward or break.

7. **DO NOT USE** wire wheels, router bits, shaper cutters, circle (fly) cutters, or rotary planers on this drill press.
8. **WHEN** cutting a large piece of material, make sure it is fully supported at the table height.
9. **DO NOT** perform any operation freehand. ALWAYS hold the workpiece firmly against the table so it will not rock or twist.
Use clamps or a vise for unstable workpieces.
10. **MAKE SURE** there are no nails or foreign objects in the part of the workpiece to be drilled.
11. **CLAMP THE WORKPIECE OR BRACE IT** against the left side of the column to prevent rotation. If it is too short or the table is tilted, clamp it solidly to the table.
12. **IF THE WORKPIECE** overhangs the table such that it will fall or tip if not held, clamp it to the table or provide auxiliary support.
13. **SECURE THE WORK.** Use clamps or a vise to hold the work when practical. It's safer than using your hand and it frees both hands to operate tool.
14. **MAKE SURE** all clamps and locks are firmly tightened before drilling.
15. **SECURELY LOCK THE HEAD** and table support to the column, and the table to the table support before operating the drill press.
16. **NEVER** turn your drill press ON before clearing the table of all objects (tools, scraps of wood, etc.).
17. **BEFORE STARTING** the operation, jog the motor switch to make sure the drill bit does not wobble or vibrate.
18. **LET THE SPINDLE REACH FULL SPEED** before starting to drill. If your drill press makes an unfamiliar noise or if it vibrates excessively, stop immediately, turn the drill press OFF and unplug. Do not restart the unit until the problem is corrected.
19. **DO NOT** perform layout assembly or set up work on the table while the drill press is in operation.
20. **USE THE RECOMMENDED SPEED** for any drill press accessory and for different workpiece material.
21. **WHEN DRILLING** large diameter holes, clamp the workpiece firmly to the table. Otherwise, the bit may grab and spin the workpiece at high speeds. **DO NOT USE** fly cutters or multiple-part hold cutters, as they can come apart or become unbalanced in use.
22. **MAKE SURE** the spindle has come to a complete stop before touching the workpiece.
23. **TO AVOID INJURY** from accidental starting, always turn the switch OFF and unplug the drill press before installing or removing any accessory or attachment or making any adjustment.
24. **DO NOT** adjust the speed while machine is not running.

ELECTRICAL REQUIREMENTS

POWER SUPPLY AND MOTOR SPECIFICATIONS

WARNING: To avoid electrical hazards, fire hazards, or damage to the tool, use proper circuit protection. Use a separate electrical circuit for your tools. To avoid shock or fire, if power cord is worn or cut, or damaged in any way, have it replaced immediately.

GROUNDING INSTRUCTIONS

WARNING: This tool must be grounded while in use to protect the operator from electrical shock.

IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides a path of least resistance for electric current and reduces the risk of electric shock. This tool is equipped with an electric cord that has an equipment-grounding conductor and a grounding plug. The plug **MUST** be plugged into a matching receptacle that is properly installed and grounded in accordance with ALL local codes and ordinances.

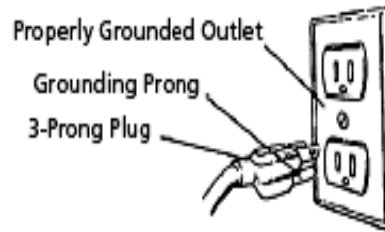
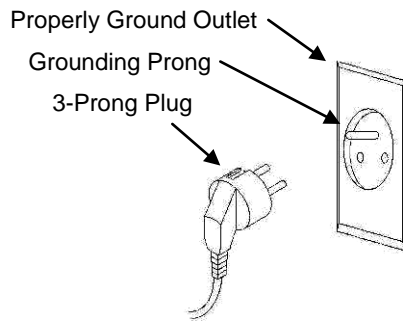
DO NOT MODIFY THE PLUG PROVIDED. If it will not fit the receptacle, have the proper receptacle installed by a qualified electrician.

IMPROPER CONNECTION of the equipment-grounding conductor can result in risk of electric shock. The conductor with green insulation (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.

CHECK with a qualified electrician or service person if you do not completely understand the grounding instructions, or if

you are not sure the tool is properly grounded.

Refer to either picture:



WARNING: Improper connection of equipment grounding conductor can result in the risk of electrical shock. equipment should be grounded while in use to protect operator from electrical shock.

-Check with a qualified electrician if you do not understand grounding instructions or if you are in doubt as to whether the tool is properly grounded.

-This tool is equipped with an approved cord and a 3-prong grounding type plug for your protection against shock hazards.

-Grounding plug should be plugged directly into a properly installed and grounded 3-prong grounding-type receptacle, as shown.

-Do not remove or alter grounding prong in any manner. in the event of a malfunction or breakdown, grounding provides a path of least resistance for electrical shock.

WARNING: This machine is for indoor use only. Do not expose to rain or use in damp locations.

GUIDELINES FOR EXTENSION CORDS

USE PROPER EXTENSION CORD. 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 cause overheating.

Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

ACCESSORIES AND ATTACHMENTS

RECOMMENDED ACCESSORIES

WARNING: To avoid injury:

- Use only accessories recommended for this Drill Press.
- Follow instructions that accompany accessories. Use of improper accessories may cause hazards.
- Use only accessories designed for this Drill Press to avoid injury from thrown broken parts or workpieces.
- Do not use any accessory unless you have completely read the instruction or operator's manual for that accessory.

CARTON CONTENTS

UNPACKING AND CHECKING CONTENTS

Carefully unpack the Drill Press and all its parts, and compare against the illustration following.

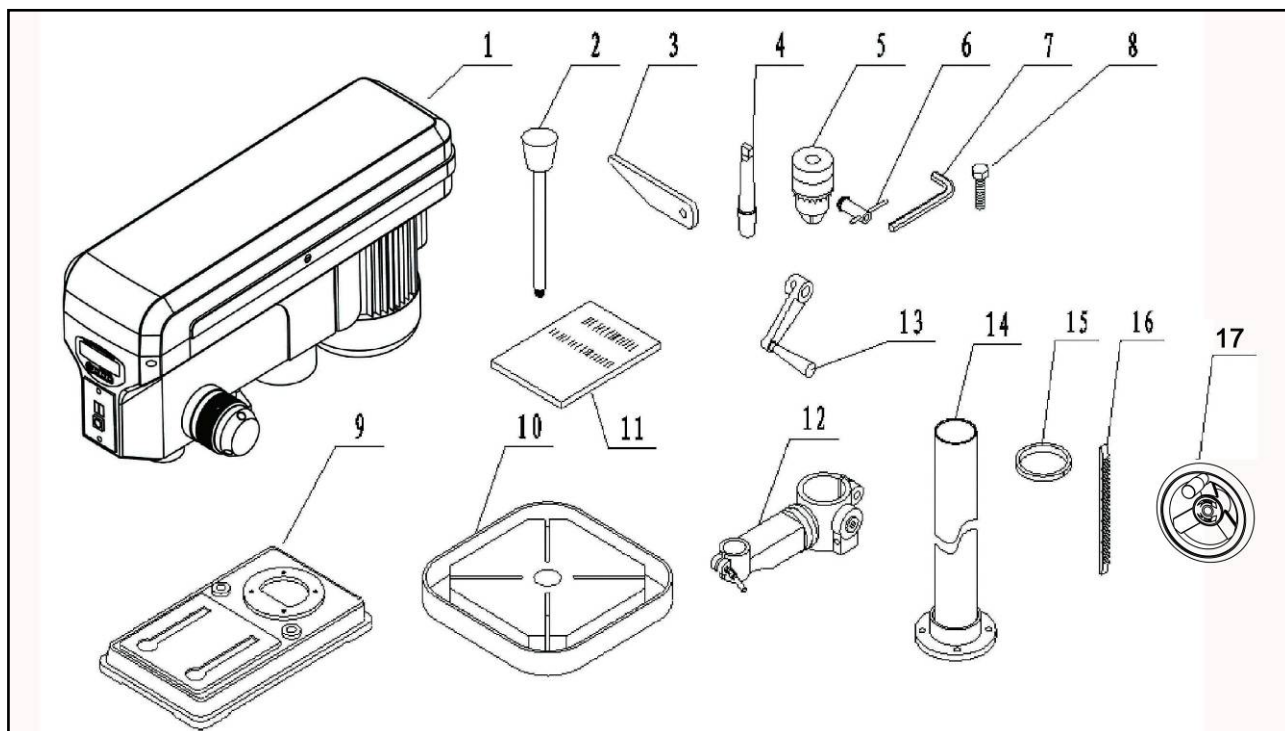
WARNING:

- To avoid injury from unexpected starting, do not plug the power cord into a power source receptacle during unpacking and assembly. This cord must remain unplugged whenever you are assembling or adjusting the drill press.
- If any part is missing or damaged, do not plug the drill press in until the missing or damaged part is replaced, and assembly is complete.
- To protect the drill press from moisture, a protective coating has been applied to the machined surfaces. Remove this coating with a soft cloth moistened with kerosene.

WARNING: To avoid fire or toxic reaction, never use gasoline, naphtha, acetone, lacquer thinner or similar highly volatile solvents to clean the drill press.

TABLE OF LOOSE PARTS

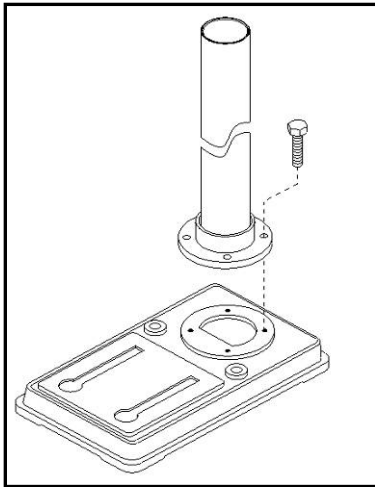
Unpack carton; check you machine to see parts listed below:



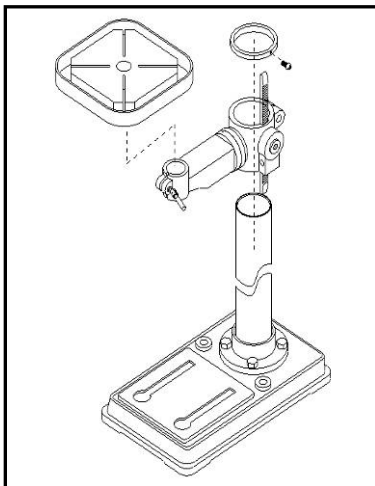
1. Head assembly	1	11. Operator's Manual	1
2. Feed handles	3	12. Table Support	1
3. Chuck tool	1	13. Table adjustment handle	1
4. Arbor	1	14. Column assembly	1
5. Chuck	1	15. Column collar	1
6. Chuck key	1	16. Gear rack	1
7. Hex wrench	1	17. Handwheel assembly	1
8. Hex bolt	4	18. Chuck guard assembly (Alternative assembly parts,	
9. Base	1	Your machine may not have this assembly part)	
10. Table	1		

ASSEMBLY

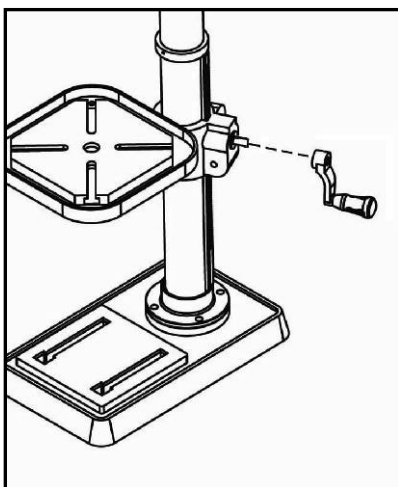
1. Install column to base



2. Install table assembly



3. Install table adjustment handle.



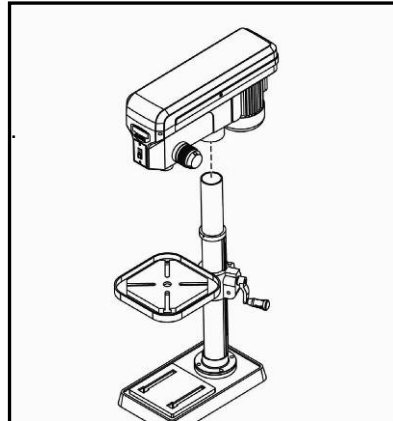
4. Install head assembly

4.1. Carefully lift the head above the column and slide it onto the column

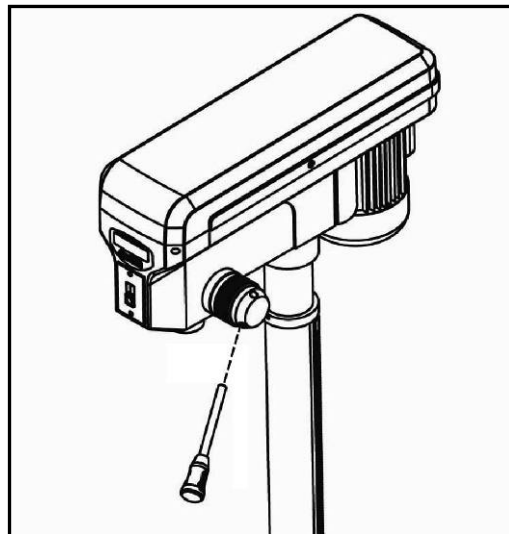
Make sure the head slides down over the column as far as possible.

Align the head with the base.

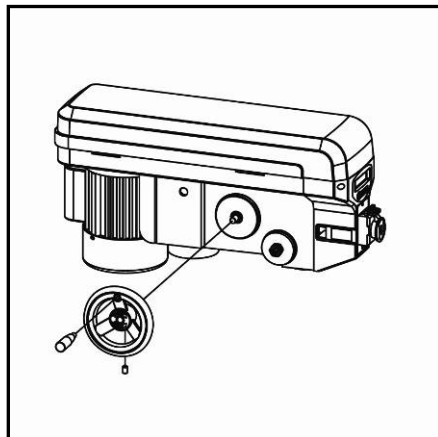
4.2. Using the hex wrench, tighten the head lock set screws.



5. Installing feed handles



6. Install the handwheel, tighten the set screw



7. Installing the chuck

WARNING: Before any assembly of the chuck and arbor to the drill press head, clean all mating surfaces with a non-petroleum based product; such as alcohol or lacquer thinner. Any oil or grease used in the packing of these parts must be removed; otherwise the chuck may come loose during operation.

6.1 Push the arbor onto the spindle

6.2 Push the chuck onto the arbor.

6.3. Using a wood mallet, firmly tap the chuck upward into position on the spindle shaft.

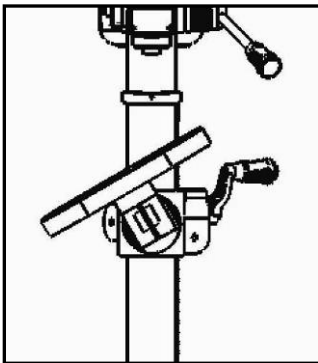
8. Install the connector of chuck guard assembly and install chuck guard assembly (Alternative assembly parts, your machine may not have this assembly part)

ADJUSTMENT

1. Table adjustment

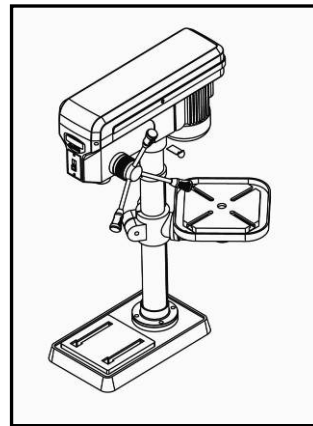
A. Tilting adjustment:

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



B. Swing 360°

Loosen table bracket locking handle then swing table to appropriate position and retighten the locking handle.

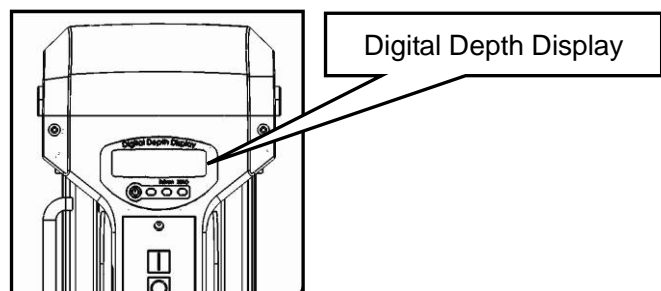
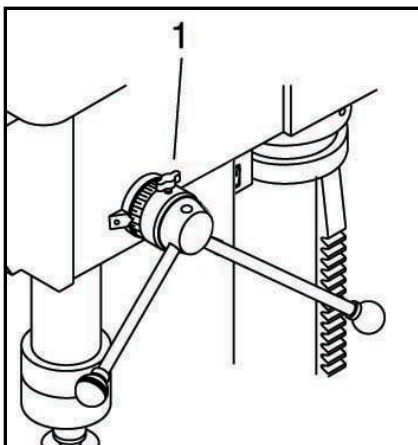


2. Feed Depth Adjustment

Turn the depth scale ring to the needed depth, lock the scale ring in place with the depth knob (1) .

The drill bit will stop after traveling the distance selected on the depth scale.

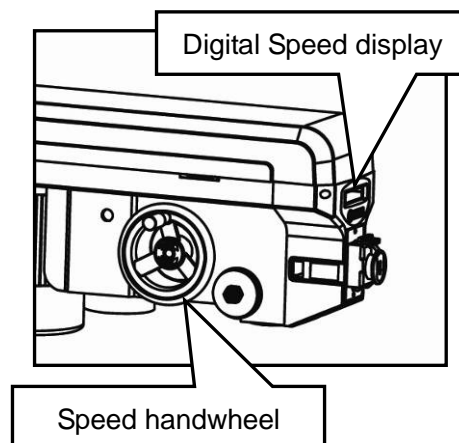
Otherwise you can read the depth from the digital depth display.



3. Speed Adjustment

This drill press can be change speed by rotating the handwheel. ,
And you can read the speed from the digital speed display.

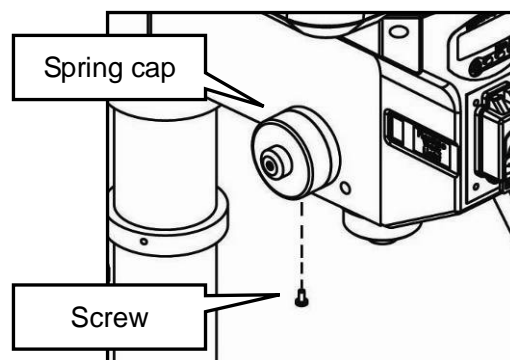
Warning: Change the speed only while machine is running!



4. Quill Spring Adjustment

The quill return spring may need adjustment if the tension causes the quill to return too rapidly or too slowly.

Take out the screw and carefully turn the spring cap counterclockwise, attach the screw to another hole of the spring cap.



OPERATIONS

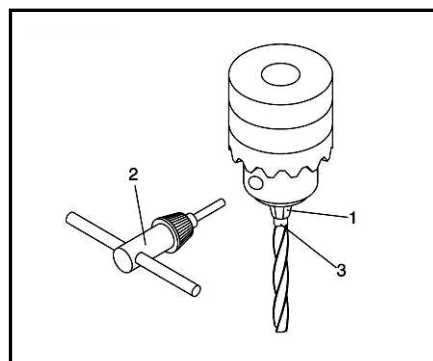
1. Installing A Drill Bit

1.1. With the switch "OFF", open the chuck jaws (1) using the chuck key (2). Turn the chuck key counterclockwise to open the chuck jaws (1).

1.2. Insert the drill bit (3) into the chuck far enough to obtain maximum gripping by the jaws, but not far enough to touch the spiral grooves (flutes) of the drill bit when the jaws are tightened.

1.3. Make sure that the drill is centered in the chuck.

1.4. Turn the chuck key clockwise to tighten the jaws.



Warning: To avoid injury or accident by the chuck key ejecting forcibly from the chuck when the power is turned ON, always recheck and remove the chuck key before turning the power ON.

2. Positioning Workpiece

To prevent the workpiece or back-up material from being torn from your hands while drilling, you **MUST** position it against the **LEFT** side of the column. Failure to do this could result in personal injury.

3. Using Vise

For small workpiece that cannot be clamped to the table, use a drill press vise. The vise must be clamped or bolted to the table.

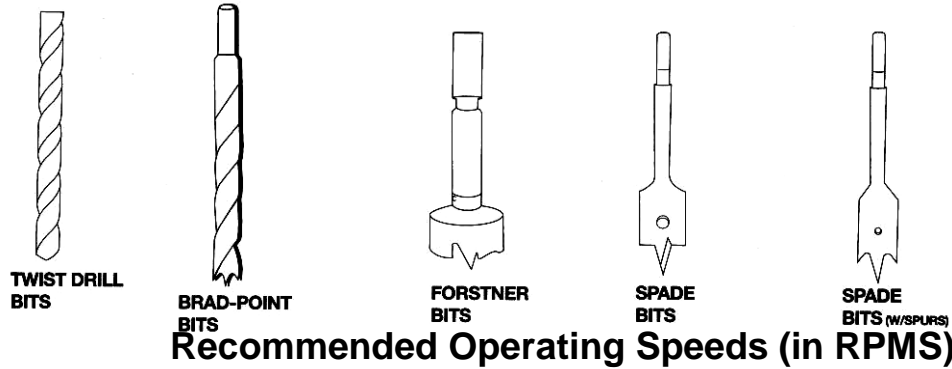
Warning: The drill press vise **MUST** be clamped or bolted to the table to avoid injury from a spinning workpiece, or damaged vise or bit parts.

4. Correct Drilling Speeds

Warning: Be sure drill press is turned off and is disconnected from power source before adjusting speeds.

Use the recommended speed for the drill bit and workpiece.

The drill bits that can be used is shown in following figure:



Recommended Operating Speeds (in RPMs)

	Material					
	SOFTWOOD	HARDWOOD	ACRYLIC	BRASS	ALUMINUM	STEEL
TWIST DRILL BITS						
1/16-3/16" (3-5mm)	3000	3000	2500	3000	3000	3000
1/4-3/8" (6-10mm)	3000	1500	2000	1200	2500	1000
7/16-5/8" (11-16mm)	1500	750	1500	750	1500	600
11/16-1" (11-25mm)	750	500	NR	400	1000	250
BRAD-POINT BITS						
1/8"	1800	1200	1500	NR	NR	NR
1/4"	1800	1000	1500	NR	NR	NR
3/8"	1800	750	1500	NR	NR	NR
1/2"	1800	750	1000	NR	NR	NR
5/8"	1800	500	750	NR	NR	NR
3/4"	1400	250	750	NR	NR	NR
7/8"	1200	250	500	NR	NR	NR
1"	1000	250	200	NR	NR	NR
FORSTNER BITS						
1/4-3/8"	2400	700	250	NR	NR	NR
1/2-5/8"	2400	500	250	NR	NR	NR
3/4-1"	1500	500	250	NR	NR	NR
1 1/8-1 1/4"	1000	250	250	NR	NR	NR
1 3/8-2"	500	250	NR	NR	NR	NR
SPADE BITS						
1/4-1/2"	2000	1500	NR	NR	NR	NR
5/8-1 1/2"	1750	1500	NR	NR	NR	NR
1 1/8-1 1/2"	1500	1000	NR	NR	NR	NR
SPADE BITS WITH SPURS						
3/8-1 NR	2000	1800	500	NR	NR	NR

NR-Not Recommended

MAINTENANCE

MAINTAINING YOUR DRILL PRESS

WARNING: For our own safety, turn the switch OFF and remove the plug from the power source outlet before maintaining or lubricating your drill press.

Frequently blow out, using an air compressor or dust vacuum, any dust that accumulates inside the motor. A coat of paste wax applied to the table and column will help to keep the surface clean & help avoid rust.

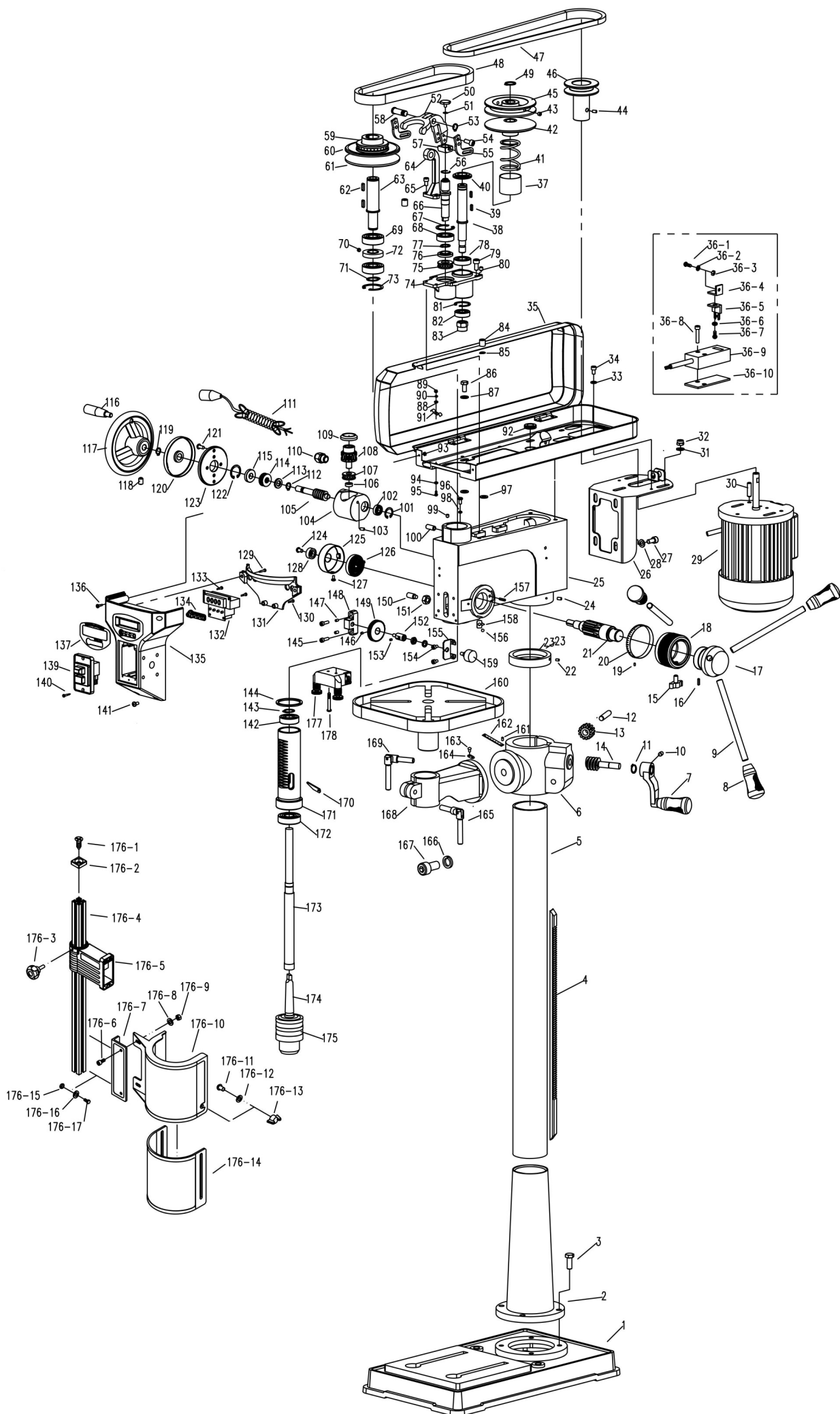
To avoid shock or fire hazard, if the power cord is worn or cut on any way, have it replaced immediately.

LUBRICATION

All of the drill press ball bearings are packed with grease at the factory. They require no further lubrication. Lower spindle to maximum depth and oil moderately once every three months.

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Noisy operation	1. Incorrect belt tension 2. Dry spindle 3. Loose spindle 4. Loose motor pulley	1. Adjust tension 2. Lubricate spindle 3. Tighten pulley nut 4. Tighten set screw in pulley
Bit burns or smokes	1. Incorrect speed 2. Chips not coming out of hole 3. Dull bit	1. Change speed 2. Retract bit frequently to clear chips 3. Sharpen or replace bit
Excessive drill bit run out or wobble	1. Bent bit 2. Bit not properly installed in chuck 3. Chuck not properly installed 4. Worn spindle bearings	1. Replace bit 2. Install bit properly 3. Install chuck properly 4. Replace bearings
Drill bit binds in workpiece	1. Workpiece pinching bit or excessive feed pressure 2. Improper belt tension	1. Support or clamp workpiece, decrease feed pressure 2. Adjust tension
Workpiece torn loose from hand	1. No supported or clamped properly	1. Support or clamp workpiece properly



Part list

No.	Description	QTY
1	Base	1
2	Column support	1
3	Hex head bolt	4
4	Gear rack	1
5	Column	1
6	Table support bracket	1
7	Table adjusting handle	1
8	Handle cap	3
9	Feed handle	3
10	Set screw	1
11	Retaining ring	1
12	Pin	1
13	Worm gear	1
14	Worm	1
15	Wing knob	1
16	Spring pin	1
17	Hub	1
18	Scale bush	1
19	Rivet	1
20	Depth scale	1
21	Gear shaft	1
22	Set screw	1
23	Column collar	1
24	Set screw	2
25	Head	1
26	Motor support	1
27	Socket head bolt	4
28	Flat washer	4
29	Motor	1
30	Set screw	1
31	Flat washer	3
32	Nut	3
33	Flat washer	2
34	Pan head screw	2
35	Belt cover	1
36-1	Pan head screw	1
36-2	Flat washer	1
36-3	Nut	1
36-4	Switch key seat	1
36-5	Switch key	1
36-6	Flat washer	1

No.	Description	QTY
36-7	Pan head screw	1
36-8	Socket heat bolt	2
36-9	Interlock switch	1
36-10	Switch plate	1
37	Spring cap	1
38	Shaft	1
39	Key	2
40	Spacer	1
41	Spring	1
42	Lower idle pulley	1
43	Set screw	2
44	Set screw	1
45	Upper idle pulley	1
46	Motor pulley	1
47	V belt	1
48	V belt	1
49	Retaining ring	1
50	Screw	1
51	Retaining ring	1
52	Shifting fork	1
53	Retaining ring	1
54	Socket head bolt	4
55	Sliding plate	2
56	Retaining ring	1
57	Nut	1
58	Shaft	1
59	Bearing	1
60	Upper spindle pulley	1
61	Lower spindle pulley	1
62	Key	1
63	Sleeve	1
64	Supporting plate	1
65	Socket head bolt	2
66	Screw	1
67	Retaining ring	1
68	Ball bearing	1
69	Ball bearing	2
70	Magnet	1
71	Retaining ring	1
72	Spacer	1
73	Retaining ring	1

No.	Description	QTY
74	Bracket	1
75	Bearing	1
76	Spacer	1
77	Retaining ring	1
78	Ball bearing	1
79	Socket head bolt	1
80	Set screw	2
81	Retaining ring	1
82	Ball bearing	1
83	Nut	1
84	Screw	1
85	Retaining ring	1
86	Pan head screw	4
87	Flat washer	4
88	Flat washer	2
89	Nut	2
90	Lock washer	2
91	Cord clamp	2
92	Rubber bushing	1
93	Nut	2
94	Flat washer	2
95	Pan head screw	2
96	Pan head screw	3
97	Rubber washer	6
98	Flat washer	3
99	Set screw	1
100	Sensor	1
101	Retaining ring	1
102	Ball bearing	1
103	Set screw	1
104	Support bracket	1
105	Worm	1
106	Bush	1
107	Bearing	1
108	Worm gear	1
109	Bush	1
110	Bushing	1
111	Cord	1
112	Retaining ring	1
113	Spacer	1
114	Bearing	1
115	Bush	1
116	Handle	1

No.	Description	QTY
117	Handwheel	1
118	Set screw	1
119	Retaining ring	1
120	Cap	1
121	Socket head bolt	4
122	Retaining ring	1
123	Support plate	1
124	Pan head screw	1
125	Spring cap	1
126	Spring	1
127	Pan head screw	1
128	Round nut	1
129	Thread forming screw	2
130	Thread forming screw	2
131	Back plate	1
132	Digital display	1
133	Thread forming screw	4
134	Rubber button	1
135	Switch box	1
136	Pan head screw	2
137	Label	1
139	Switch	1
140	Thread forming switch	2
141	Pan head switch	2
142	Ball bearing	1
143	Retaining ring	1
144	Rubber washer	1
145	Socket head bolt	2
146	Set screw	1
147	Set screw	4
148	Support block	1
149	Gear	1
150	Set screw	1
151	Nut	1
152	Shaft	1
153	Set screw	1
154	Pan head screw	2
155	Support plate	1
156	Rivet	1
157	Screw	1
158	Pointer	1
159	Sensor	1
160	Table	1

No.	Description	QTY
161	Rivet	2
162	Angle scale	1
163	Rivet	2
164	Pointer	1
165	Lock handle	1
166	Lock washer	1
167	Hex head bolt	1
168	Table support	1
169	Lock handle	1
170	Chuck tool	1
171	Quill	1
172	Ball bearing	1
173	Spindle	1
174	Arbor	1
175	Chuck	1
176-1	Flat head screw	1
176-2	Cap	1
176-3	Square bar	1
176-4	Set knob	1

No.	Description	QTY
176-5	Switch box assembly	1
176-6	Socket head bolt	2
176-7	Guard support	1
176-8	Flat washer	2
176-9	Hex nut	2
176-10	Upper guard	1
176-11	Carriage bolt	2
176-12	Flat washer	2
176-13	Knob	2
176-14	Lower guard	1
176-15	Nut	2
176-16	Flat washer	2
176-17	Socket head bolt	2
177	Laser guide	1
178	Screw	2