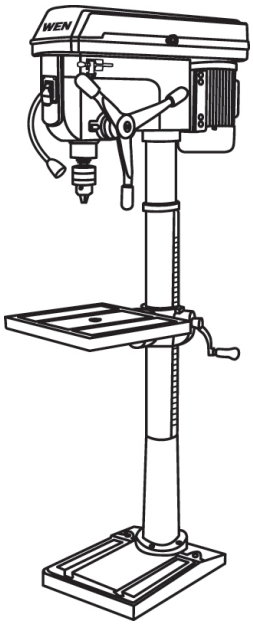
17-INCH 12-SPEED DRILL PRESS



Model # 4227
bit.ly/wenvideo

IMPORTANT:

Your new tool has been engineered and manufactured to WEN's highest standards for dependability, ease of operation, and operator safety. When properly cared for, this product will supply you years of rugged, trouble-free performance. Pay close attention to the rules for safe operation, warnings, and cautions. If you use your tool properly and for intended purpose, you will enjoy years of safe, reliable service.

NEED HELP? CONTACT US!

Have product questions? Need technical support?
Please feel free to contact us at:

800-232-1195 (M-F 8AM-5PM CST)

techsupport@wenproducts.com

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TECHNICAL DATA

Model Number:	4227
Motor:	120 V, 60Hz, 13A, 1-1/2 HP
Speed:	180 to 2940 RPM
Chuck Type:	JT3
Chuck Capacity:	1/8--5/8 in.
Stroke:	4-3/4 in.
Swing:	17 in.
Table tilt:	0 to 45° left and right
Laser:	Class II, 650nm, 1mW
Weight:	214 lb

GENERAL SAFETY RULES

Safety is a combination of common sense, staying alert and knowing how your item works. **SAVE THESE SAFETY INSTRUCTIONS.**

WARNING: To avoid mistakes and serious injury, do not plug in your tool until the following steps have been read and understood.

1. READ and become familiar with this entire instruction manual. LEARN the tool's applications, limitations, and possible hazards.

2. AVOID DANGEROUS CONDITIONS. Do not use power tools in wet/damp areas or expose them to rain. Keep work areas well lit.

3. DO NOT use power tools in the presence of flammable liquids or gases.

4. ALWAYS keep your work area clean, uncluttered, and well lit. DO NOT work on floor surfaces that are slippery with sawdust or wax.

5. KEEP BYSTANDERS AT A SAFE DISTANCE from the work area, especially when the tool is operating. NEVER allow children or pets near the tool.

6. DO NOT FORCE THE TOOL to do a job for which it was not designed.

7. DRESS FOR SAFETY. Do not wear loose clothing, gloves, neckties, or jewelry (rings, watches, etc.) when operating the tool. Inappropriate clothing and items can get caught in moving parts and draw you in. ALWAYS wear non-slip footwear and tie back long hair.

8. WEAR A FACE MASK OR DUST MASK to fight the dust produced during operation.

WARNING: Dust generated from certain materials can be hazardous to your health. Always operate the tool in a well-ventilated area and provide for proper dust removal. Use dust collection systems whenever possible.

9. ALWAYS remove the power cord plug from the electrical outlet when making adjustments, changing parts, cleaning, or working on the tool.

10. KEEP GUARDS IN PLACE AND IN WORKING ORDER.

11. AVOID ACCIDENTAL START-UPS. Make sure the power switch is in the OFF position before plugging in the power cord.

12. REMOVE ADJUSTMENT TOOLS. Always make sure all adjustment tools are removed from the tool before turning it on.

13. NEVER LEAVE A RUNNING TOOL UNATTENDED. Turn the power switch to OFF. Do not leave the tool until it has come to a complete stop.

14. NEVER STAND ON A TOOL. Serious injury could result if the tool tips or is accidentally hit. DO NOT store anything above or near the tool.

GENERAL SAFETY RULES

15. DO NOT OVERREACH. Keep proper footing and balance at all times. Wear oil-resistant rubber-soled footwear. Keep the floor clear of oil, scrap, and other debris.

16. MAINTAIN TOOLS PROPERLY. ALWAYS keep tools clean and in good working order. Follow instructions for lubricating and changing accessories.

17. CHECK FOR DAMAGED PARTS. Check for alignment of moving parts, jamming, breakage, improper mounting, or any other conditions that may affect the tool's operation. Any part that is damaged should be properly repaired or replaced before use.

18. MAKE THE WORKSHOP CHILDPROOF. Use padlocks and master switches and ALWAYS remove starter keys.

19. DO NOT operate the tool if you are under the influence of drugs, alcohol, or medication that may affect your ability to properly use the tool.

20. USE SAFETY GOGGLES AT ALL TIMES that comply with ANSI Z87.1. Normal safety glasses only have impact resistant lenses and are not designed for safety. Wear a face or dust mask when working in a dusty environment. Use ear protection such as plugs or muffs during extended periods of operation.

SPECIFIC RULES FOR DRILL PRESS

WARNING: Do not operate this tool until it is completely assembled and installed according to the instructions.

1. Never turn the drill press on until the table is clear of all foreign objects (tools, scraps, etc.).

2. Always keep hands and fingers away from the drill bit.

3. Do not drill materials without a flat surface unless a suitable support is used (clamp or vice).

4. Never start the drill press with the drill bit pressed against the workpiece.

5. Make sure the table lock is tightened before starting the drill press.

6. Never layout, assemble, or set-up any work on the table while the drill is on.

7. Make sure the drill bit is securely locked in the chuck.

8. Make sure the chuck key is removed from the chuck before turning power on.

9. Adjust the table or depth stop to avoid drilling into the table.

10. Always stop the drill before removing scrap pieces from the table.

11. Use clamps or a vise to secure a workpiece to the table. This will prevent the workpiece from rotating with the drill bit.

SPECIFIC RULES FOR DRILL PRESS

12. Do not wear gloves when operating a drill press.

13. Set the drill press to the speed that is appropriate for the material being drilled.

14. If any part of the drill press is missing/damaged or if the electrical components fail to perform properly, shut the power OFF and unplug the drill press. Replace missing, damaged or failed parts before resuming operation.

15. Before leaving the machine, shut the power off, remove the drill bit and clean the table.

ELECTRICAL INFORMATION

GROUNDING INSTRUCTIONS

IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides the path of least resistance for an 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 outlet 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 outlet, have the proper outlet installed by a licensed electrician.

IMPROPER CONNECTION of the equipment grounding conductor can result in electric shock. The conductor with the 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 licensed electrician or service personnel if you do not completely understand the grounding instructions or whether the tool is properly grounded.

USE ONLY THREE-WIRE EXTENSION CORDS that have three-pronged plugs and outlets that accept the tool's plug as shown in Fig. A. Repair or replace a damaged or worn cord immediately.

CAUTION: In all cases, make certain the outlet in question is properly grounded. If you are not sure, have a licensed electrician check the outlet.

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

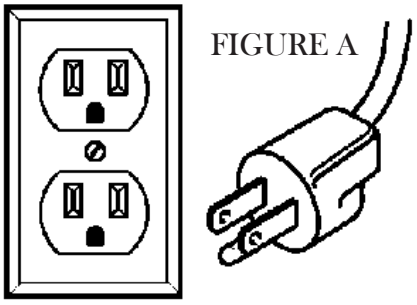


FIGURE A

ELECTRICAL INFORMATION

GUIDELINES FOR USING EXTENSION CORDS

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 table below shows the correct size to be used according to cord length and nameplate ampere rating. When in doubt, use a heavier cord. The smaller the gauge number, the heavier the cord.

AMPERAGE	REQUIRED GAUGE FOR EXTENSION CORDS			
	25 ft.	50 ft.	100 ft.	150 ft.
13A	12 gauge	10 gauge	8 gauge	6 gauge

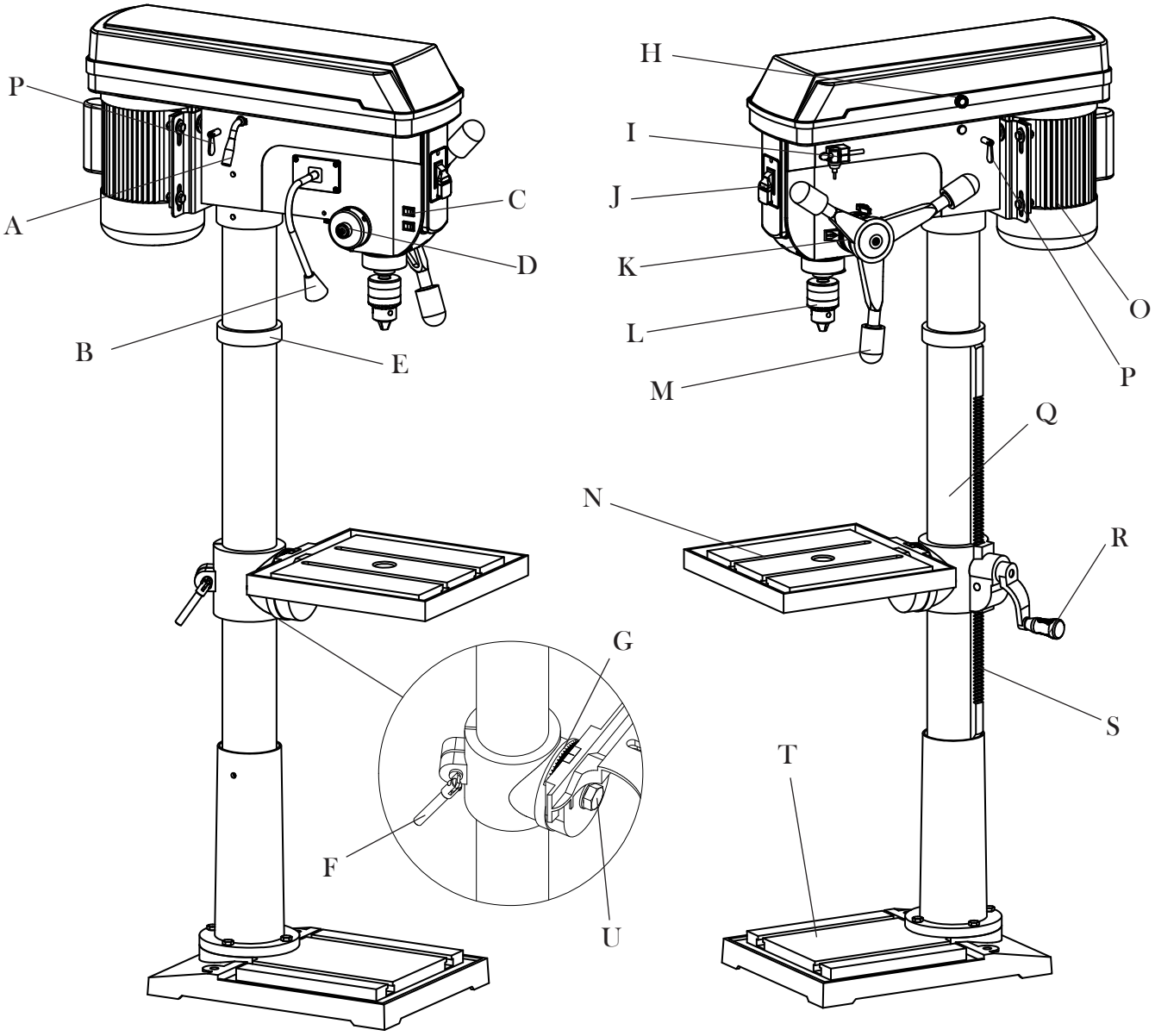
Make sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it.

Protect your extension cords from sharp objects, excessive heat and damp/wet areas.

Use a separate electrical circuit for your tools. This circuit must not be less than a #12 wire and should be protected with a 15 A time-delayed fuse. Before connecting the motor to the power line, make sure the switch is in the OFF position and the electric current is rated the same as the current stamped on the motor nameplate. Running at a lower voltage will damage the motor.

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

KNOW YOUR DRILL PRESS



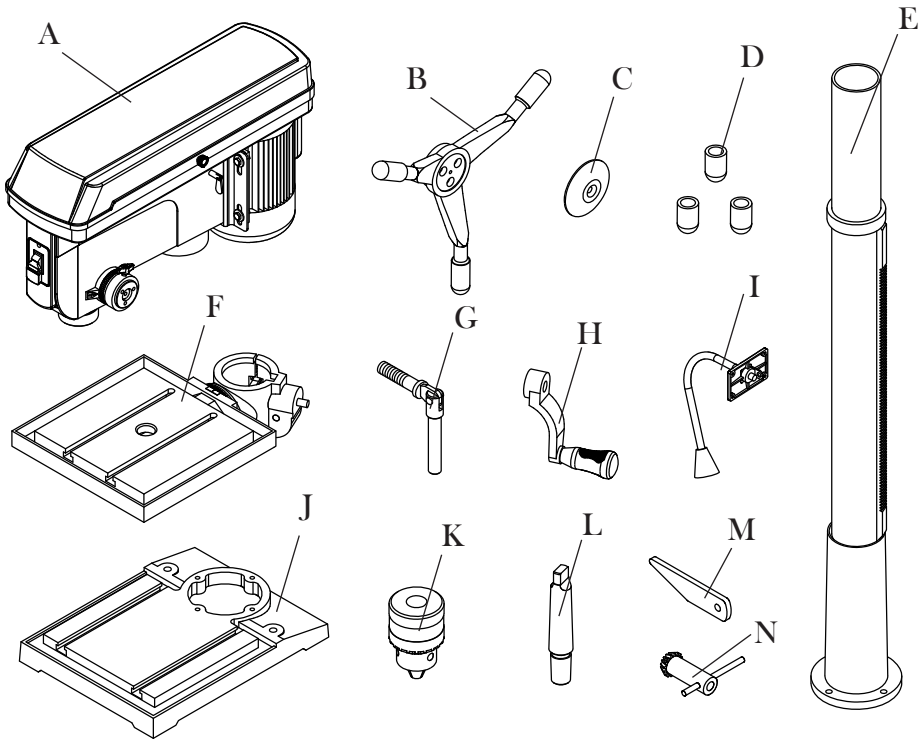
A Belt Tension Adjustment Handle
B Work Light
C Laser and Work Light Switches
D Spring Housing
E Column Collar
F Table Locking Handle
G Bevel Scale
H Pulley Cover
I Chuck Key
J Power Switch
K Depth Adjustment Scale
L Chuck
M Feed Handles
N Table
O Motor
P Motor Locking Wing Screw
Q Column
R Table Adjustment Crank
S Rack
T Base
U Bevel Lock Bolt

ASSEMBLY AND ADJUSTMENTS

UNPACKING

Unpack the drill press and all of its parts. Compare against the list below. Do not discard the carton or any packaging until the drill press is completely assembled.

To protect the drill press from moisture, a protective coating has been applied to the machine's surfaces. Remove this coating with a soft cloth moistened with kerosene or WD-40®. Do not use acetone, gasoline, or lacquer thinner to clean. Apply a coat of good paste wax to the table and column. Wipe all parts with a clean dry cloth.



CONTENTS INCLUDE:

A - Head Assembly
B - Feed Handle
C - Hub Cover
D - Handle Cap
E - Column Assembly
F - Table Assembly
G - Table Locking Handle
H - Table Adjustment Crank
I - LED Light
J - Base
K - Chuck
L - Arbor
M - Chuck Tool
N - Chuck Key

Not Shown: Hex wrenches (3, 4, 5, 6 mm), hex bolt M10X30, pan head screw M4X10, socket head screw M8X12, flat head screw M6X16

ASSEMBLY AND ADJUSTMENTS

WARNING: If any part is missing or damaged, do not plug the drill press in until the missing or damaged part is repaired or replaced.

ASSEMBLY

1. Position the base on the floor. Attach the column to the base using four M10X30 hex head bolts (Fig. 1).

2. Loosen the set screw and remove the column collar and gear rack from the column. With the help of a friend, place the rack inside the table bracket before sliding the table assembly with the rack down onto the column (Fig. 2). Place the column collar down over the rack after positioning the rack and the table in place. Tighten the collar's set screw with a hex wrench to hold the rack into position.

3. Install the table adjustment crank (Fig. 3 - 1). Secure it in place by tightening the set screw (Fig. 3 - 2). This handle will control the height of the drill press table.

4. Screw the table locking handle into position (Fig. 4 - 1). Tightening this handle prevents the table from swivelling and having its height adjusted.

5. Install the head assembly with the help of a friend by carefully lifting the head above the column. Slide it onto the column, making sure the neck goes down as far as possible (Fig. 5).

6. Align the head with the base so they are parallel with one another and facing the same direction. Tighten the set screw (Fig. 6 - 1).

7. Install the feed handles (Fig. 7 - 1) into place using three M8X12mm socket head screws (Fig. 7 - 2).

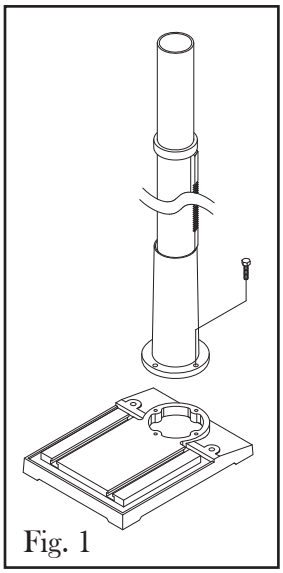


Fig. 1

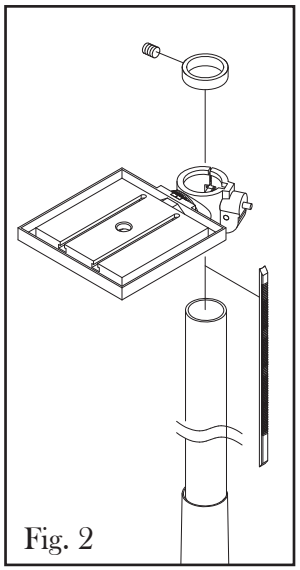
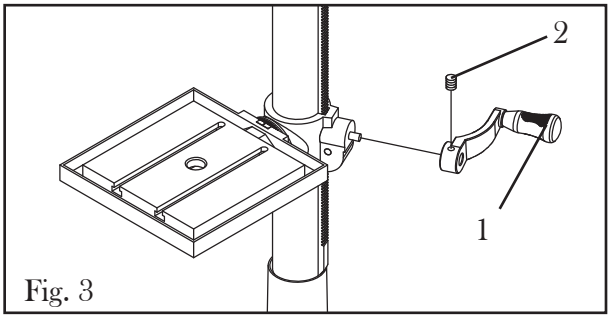


Fig. 2



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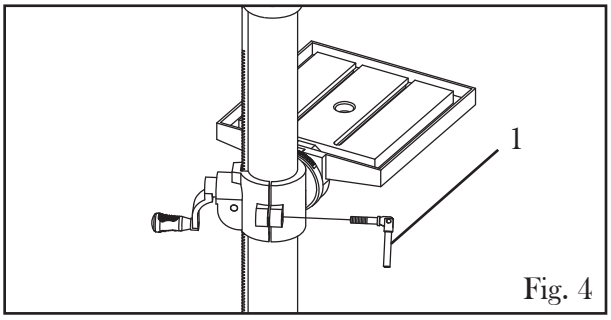

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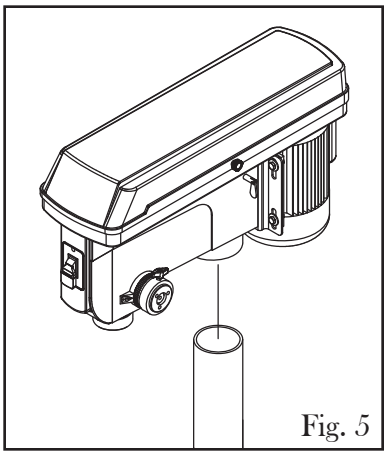
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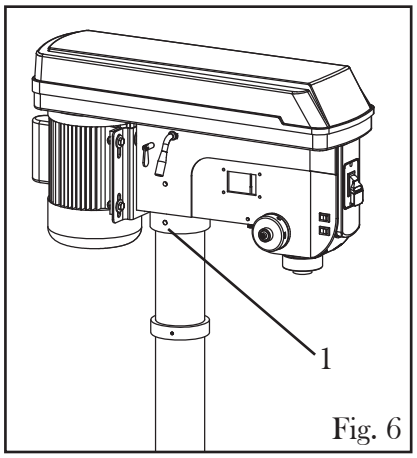


Fig. 6

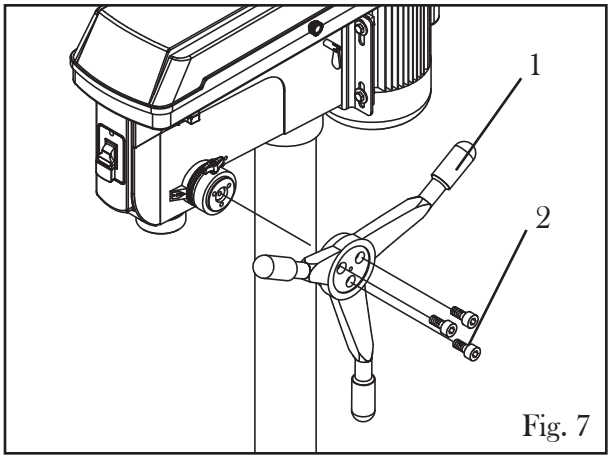


Fig. 7

ASSEMBLY (CONT.)

8. Assemble the hub cover (Fig. 8 - 1) and fasten it in place with a M6X16 flat head screw (Fig. 8 - 2). Attach the three handle caps (Fig. 9 -1).

9. To install the LED light assembly, connect the lamp plug contact (Fig. 10 - 2) to the power source plug contact (Fig. 10 - 3) within the drill's head.

10. Use four pan head screws (Fig. 10 - 1) to install the lamp assembly to the drill press head. Flip the LED lamp switch (Fig. 10 - 4) to check if the lamp is working properly.

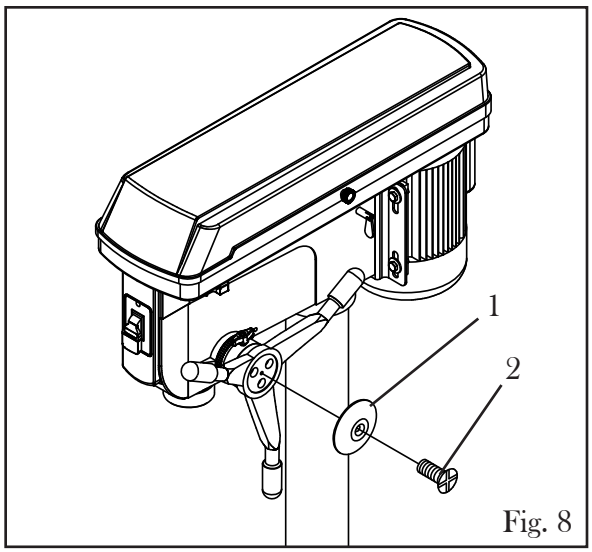


Fig. 8

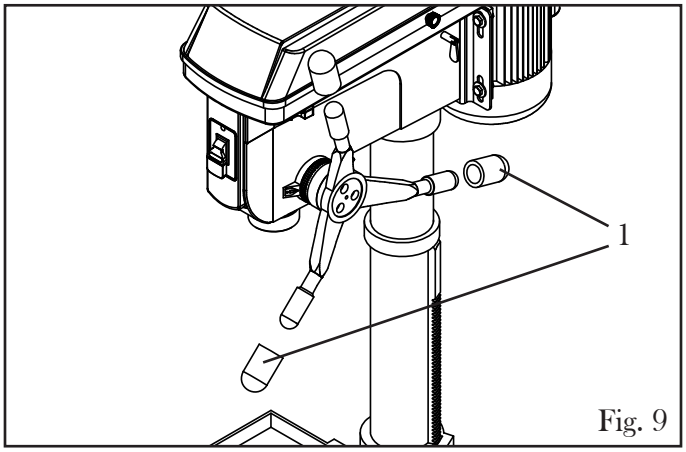


Fig. 9

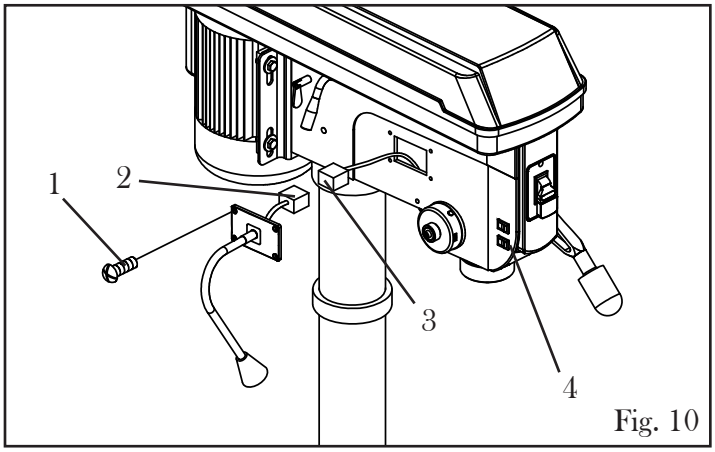


Fig. 10

INSTALLING THE CHUCK

Before installing the chuck and arbor to the drill press head, clean the surfaces with a non-petroleum based product such as alcohol or lacquer thinner. Any oil or grease must be removed, otherwise the chuck runs the risk of coming loose during operation.

1. Push the arbor (Fig. 11 - 1) onto the spindle.

2. Push the chuck (Fig. 11 - 2) onto the arbor.

3. Using a wood mallet (not included), firmly tap the chuck upward into position on the spindle shaft (Fig. 12).

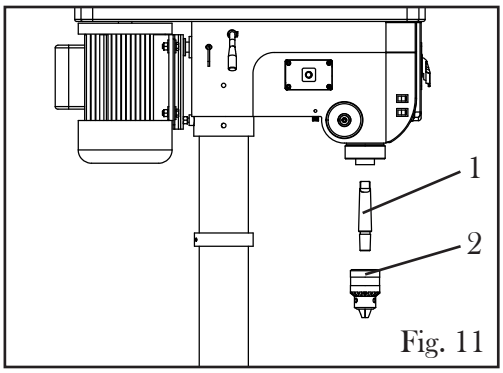


Fig. 11

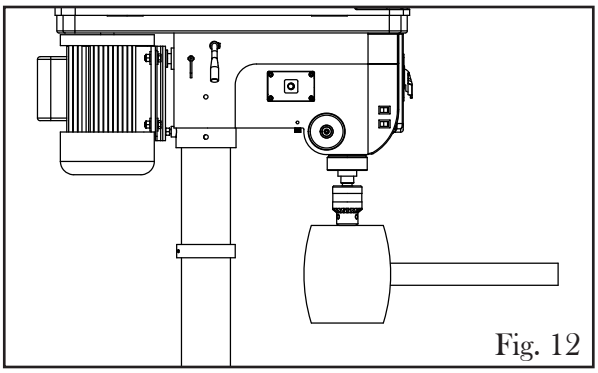


Fig. 12

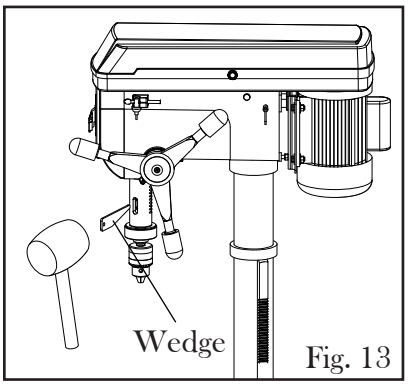


Fig. 13

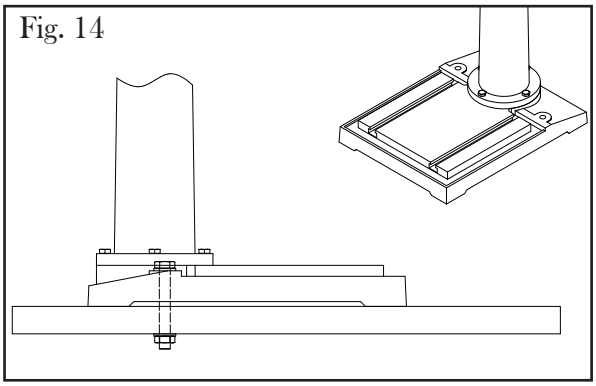


Fig. 14

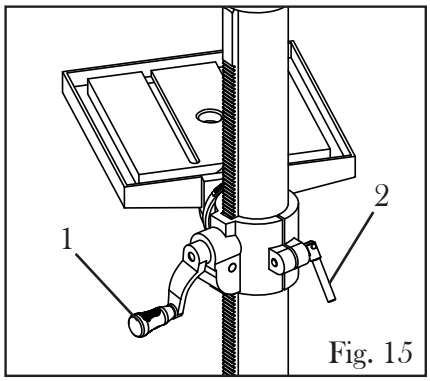


Fig. 15

REMOVING THE CHUCK (Fig. 13)
1. Turn the feed handles to lower the chuck to the lowest position.

2. Slide the wedge into the opening in the quill. Tap on the wedge using a hammer (not included). The chuck and arbor will drop out.

Note: To avoid possible damage to the drill or chuck, be prepared to catch the chuck as it falls. As a safeguard, the table can be raised to its maximum height as a backup in case you miss the falling chuck.

MOUNT THE DRILL PRESS (Fig. 14)
The drill press must be securely fastened through the mounting holes to a stand or workbench with heavy-duty fasteners. This will prevent the drill press from tipping over, sliding, or walking during operation.

IMPORTANT: If the stand or workbench has a tendency to move during operation, fasten the workbench securely to the floor.

ADJUSTMENTS
To adjust the height of the drill press table, loosen the table locking handle (Fig. 15 - 2) and turn the table adjustment crank (Fig. 15 - 1).

To bevel the table in either direction, loosen the hex bolt located underneath the table (Fig. 16 - 1). Bevel the table in either direction (Fig. 17). Once the desired position has been achieved, retighten the hex bolt (Fig. 16 - 1).

To swing the table around the column, loosen the locking handle (Fig. 15 - 2) and swing the table and the rack into the desired position (Fig. 18). Retighten the table locking handle once the desired position has been reached.

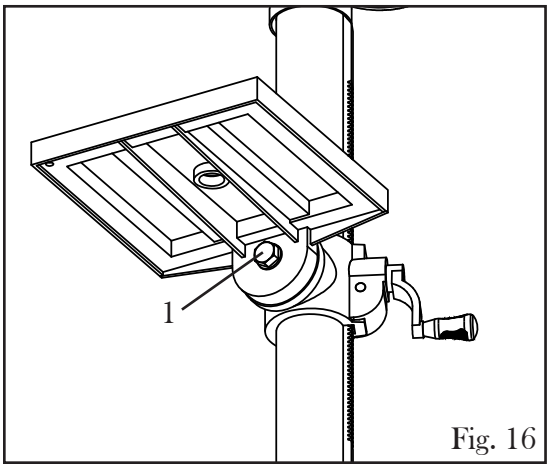


Fig. 16

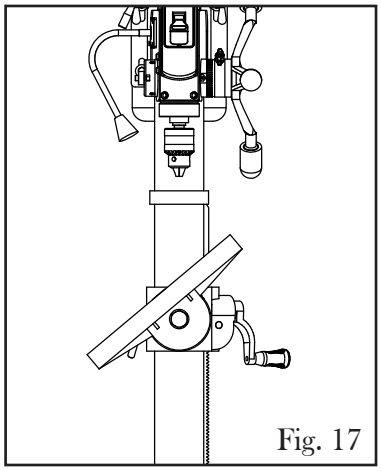


Fig. 17

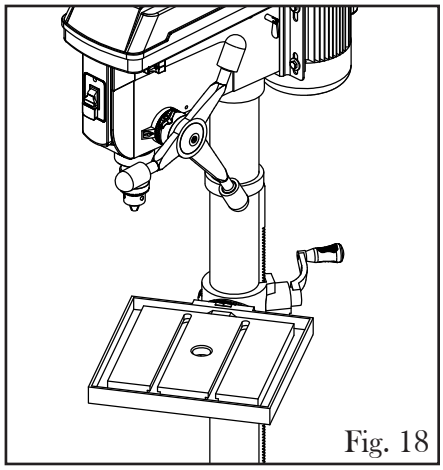


Fig. 18

FEED DEPTH ADJUSTMENT
Turn the depth scale ring to the desired depth (Fig. 19 - 1). Lock the scale ring in place with the depth knob (Fig. 19 - 2). The spindle will now stop after traveling the selected distance.

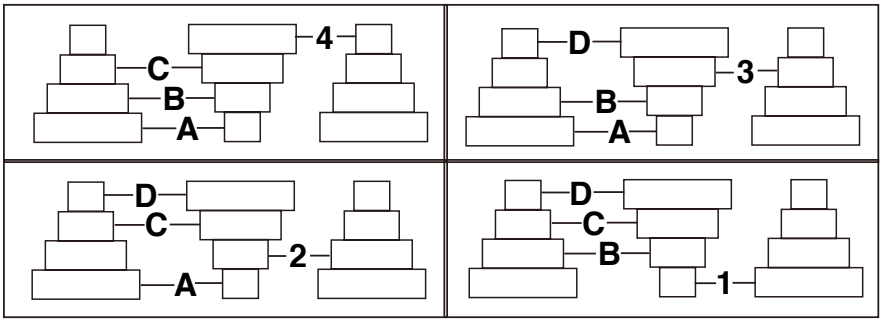
SPEED ADJUSTMENT (FIG. 20 & 21)
This drill press has 12 speeds. The speeds can be changed by changing the belt locations on the motor pulleys as shown in Fig. 21.

To change the locations on the pulleys, open the belt cover. Loosen the wing screw and the two nuts on the motor support plate (Fig. 20 - 3). Turn the belt tension adjustment handle (Fig. 20 - 2) to loosen the belt tension. Then change the belt's location to the desired speed.

QUILL SPEED ADJUSTMENT
The quill return spring may need adjustment if the quill starts returning too slowly or rapidly. Make sure to wear gloves during quill spindle adjustments to help prevent injuries from sudden and rapid disengagement of the spring housing.

1. Loosen the screw and nut (Fig. 22 - 1 and 2), making sure that the spring housing (Fig. 22 - 3) remains engaged with the head casting.

2. While firmly holding the spring housing, pull out the housing and rotate it (counterclockwise to increase or clockwise to decrease the spring tension) until the set screw (Fig. 22 - 4) becomes engaged with the next notch on the spring housing. Turn the nut (Fig. 22 - 2) until it contacts the spring housing. Tighten the screw (Fig. 22 - 1) against the nut to hold the housing in place.



SPINDLE SPEED

180 RPM - A4	520 RPM - B3	1520 RPM - B1
290 RPM - B4	560 RPM - A2	1720 RPM - D2
320 RPM - A3	1000 RPM - D3	2150 RPM - C1
400 RPM - C4	1240 RPM - C2	2940 RPM - D1

Fig. 21

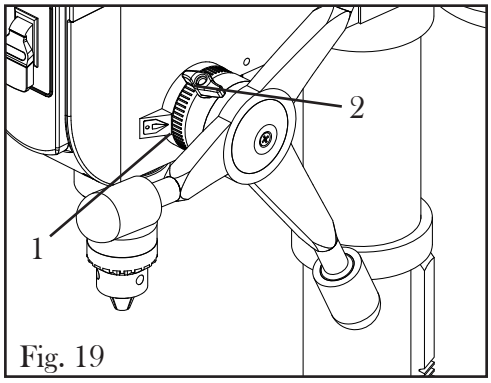


Fig. 19

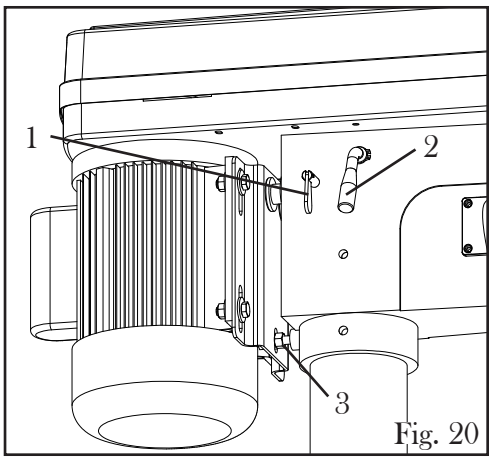


Fig. 20

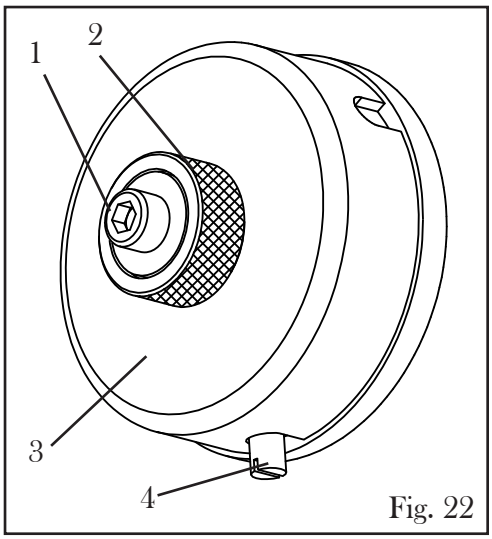


Fig. 22

RECOMMENDED SPEED FOR DRILL SIZE & MATERIAL

SPEED RANGE RPM	WOOD		ALUM ZINC BRASS		IRON STEEL	
	in.	mm	in.	mm	in.	mm
2940	3/8	9.5	7/32	5.6	3/32	2.4
2150	5/8	16.0	11/32	8.75	5/32	4.0
1520	7/8	22.0	15/32	12.0	1/4	6.4
1000	1 1/4	31.75	11/16	17.5	3/8	9.5
520	1 5/8	41.4	3/4	19.0	1/2	12.5

INSTALLING A DRILL BIT

1. With the switch OFF, open the chuck jaws (Fig. 23 - 1) using the chuck key (Fig. 23 - 2). Turn the chuck key counterclockwise to open the jaws.

2. Insert the drill bit (Fig. 23 - 3) into the chuck far enough to obtain the maximum gripping by the jaws, but not far enough to touch the spiral grooves of the drill bit when the jaws are tightened.

3. Make sure the drill is centered in the chuck. Turn the chuck key (Fig. 23 - 2) clockwise to tighten the jaws.

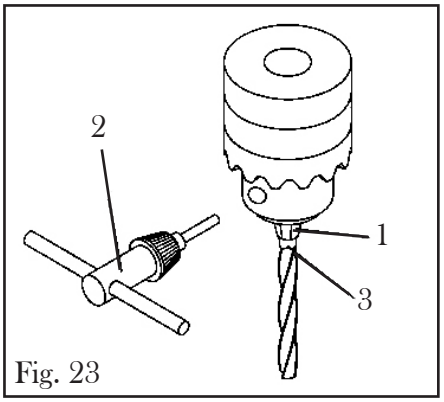


Fig. 23

POSITION THE TABLE AND WORKPIECE

Always place a piece of backup material (wood, plywood, etc.) on the table underneath the workpiece . This will prevent splintering or blowout on the underside of the workpiece as the drill bit breaks through. To keep the material from spinning out of control, it must contact the left side of the column, or be clamped (not included) to the table.

To prevent the workpiece or back-up material from spinning or rotating, you MUST position it against the left side of the column (Fig. 24).

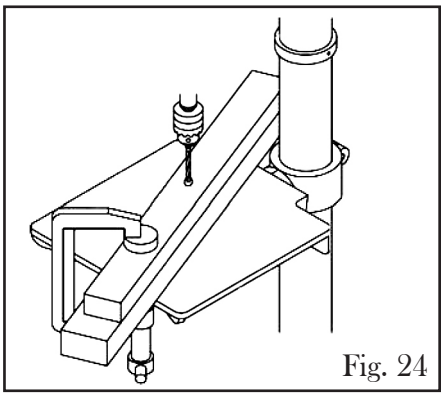


Fig. 24

Note: For small 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 to avoid injury.

GENERAL DRILLING GUIDELINES - DRILLING A HOLE

WARNING: To prevent the workpiece and the backup material from slipping from your hand while drilling, position the workpiece and backup material to the left side of the column. If the workpiece and the backup material are not long enough to reach the column, clamp the workpiece and backup material to the table. Failure to do this could result in personal injury.

1. Mark where you want to drill the workpiece by using a center punch or a sharp nail. Turn ON the laser to mark your drilling point also.

2. Before turning the drill press ON, turn the feed handles to bring the drill bit down. Line the drill bit tip up with the mark. Clamp the workpiece in place.

3. Turn ON the drill press and pull down on the feed handles with the appropriate force needed to allow the drill bit to drill the material.

4. It is good practice to touch the bit to the surface before fully committing to the cut to mark the surface of your work piece. This helps ensure a straighter cut/hole while maximizing accuracy.

5. Make sure to routinely retract the bit to remove shavings and wood chips from the hole in order to prevent the drill bit from binding.

Note: Feeding too slowly might cause the drill bit to turn in the chuck. Feeding too rapidly might stop the motor, cause the belt to slip, force the workpiece loose, or break the drill bit. Practice with scrap material to get the feel of the machine before attempting to do any drilling operation.

USING THE LASER GUIDE

WARNING: Do not stare directly at the laser beam. Please observe all safety rules.
- Never aim the beam at a person or an object other than the workpiece.
- Do not project the laser beam into the eyes of others.
- Always make sure the laser beam is aimed at a workpiece that does not possess reflective surfaces, as the laser beam could project into your eyes or the eyes of others.

The laser guide should be adjusted prior to operation. To adjust the laser guide:
1. Mark an "X" on a piece of scrap wood.

2. Insert a small drill bit into the chuck and align its tip to the intersection of the lines of the "X."

3. Secure the board to the table.

4. Turn on the laser switch and verify that the laser lines align with the "X" on the workpiece.

5. If the laser lines don't align, loosen the set screws (Fig. 25 - 1) on each side of the head and rotate the laser guides (Fig. 25 - 2) until the lines meet in the center of the "X." Retighten the lock knobs to secure it in place.

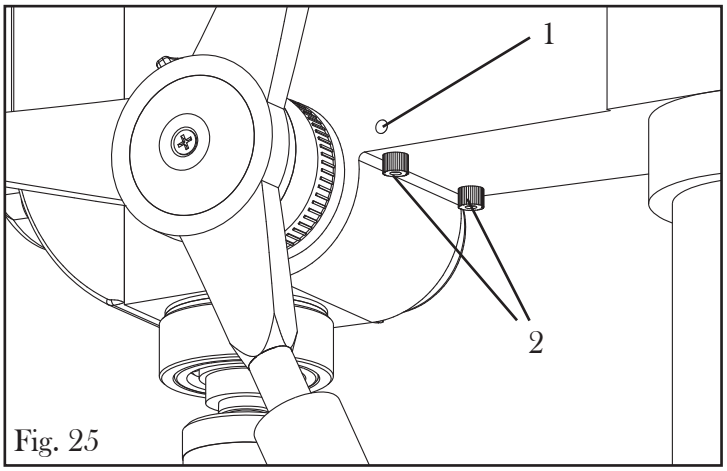


Fig. 25

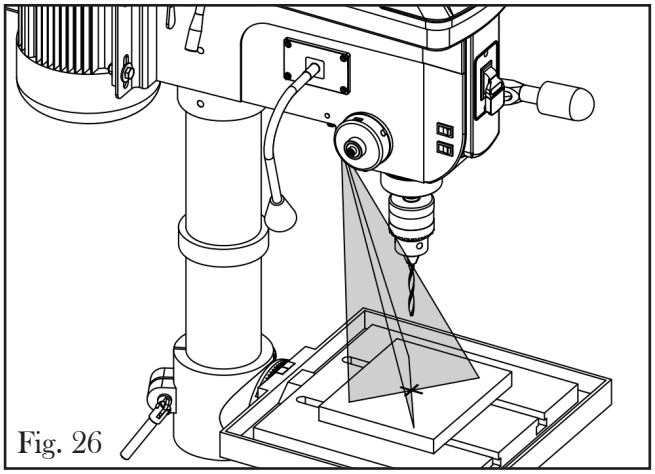


Fig. 26

ANGULAR "PLAY" OF THE SPINDLE (Fig. 27)
Move the spindle to the lowest downward position and hold in place. Try to make the spindle revolve around its axis while also moving it with a side motion. If there is too much "play", proceed as follows:

1. Loosen the lock nut.

2. Without obstructing the upward and downward motion of the spindle, turn the screw clockwise to eliminate the "play." Note: A little bit of "play" is normal.

3. Tighten the lock nut.

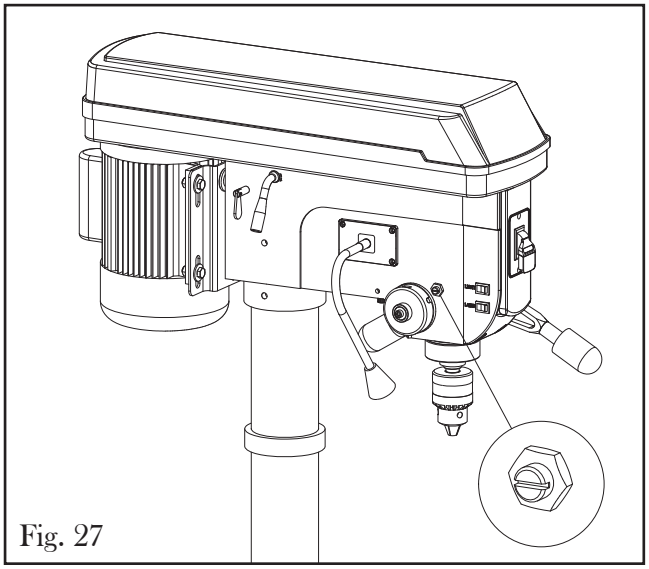


Fig. 27

OPERATION

DRILLING SPEEDS

There are a few important factors to keep in mind when determining the best drilling speed: material type, hole size, drill bit or cutter type, and desired quality level. Smaller drill bits require greater speed than larger drill bits. Softer materials require greater speed than harder materials. See page 12 for recommended speeds for particular materials.

DRILLING METAL

- Use metal-piercing twist drill bits.
- It is always necessary to lubricate the tip of the drill with oil to prevent overheating of the drill bit.
- All metal workpieces should be clamped down securely. Any tilting, twisting, or shifting causes a rough drill hole, and increases the potential of drill bit breakage.
- Never hold a metal workpiece with your bare hands. The cutting edge of the drill bit may seize the workpiece and throw it, causing serious injury. The drill bit will break if the metal piece suddenly hits the column.
- If the metal is flat, clamp a piece of wood under it to prevent turning. If it cannot be laid flat on the table, then it should be blocked and clamped.

DRILLING WOOD

- Brad point bits are preferred. Metal piercing twist bits may be used on wood.
- Do not use auger bits. Auger bits turn so rapidly that they can lift the workpiece off of the table and whirl it around.
- Always protect the drill bit by positioning the table so that the drill bit will enter the center hole when drilling through the workpiece.
- To prevent splintering, feed the drill bit slowly right as the bit is about to cut through to the backside of the workpiece.
- To reduce splintering and protect the point of the bit, use scrap wood as a backing or a base block under the workpiece.

FEEDING THE DRILL BIT

- Pull down on the feed handles with only enough force to allow the drill bit to cut.
- Feeding too rapidly might stall the motor, cause the belt to slip, damage the workpiece, or break the drill bit.
- Feeding too slowly will cause the drill bit to heat up and burn the workpiece.

MAINTENANCE

WARNING: For your safety, turn the switch off and remove the plug from the power supply before maintaining or lubricating the drill press.

Vacuum sawdust or metal shavings that accumulate in and on the motor, pulley housing, table, and work surface.

Apply a light coat of paste wax to the column and table to help keep these surfaces clean and rust-free.

The ball bearings in the spindle and the V-belt pulley assembly are greased and permanently sealed. Pull the spindle down and oil the spindle sleeve moderately every three months.

Lubricate the table bracket and locking knobs if they become difficult to use.

CAUTION: All servicing of the drill press should be performed by a qualified service technician.

TROUBLESHOOTING

PROBLEM	CAUSES	SOLUTIONS
Noisy operation	1) Incorrect belt tension 2) Dry spindle 3) Loose spindle pulley 4) Loose motor pulley	1) Adjust the belt tension (See REPLACE THE BELT section) 2) Lubricate the spindle 3) Tighten the retaining nut on the pulley insert 4) Tighten the set screw on the side of the motor pulley
The drill bit burns or smokes	1) Drilling at the incorrect speed 2) The wood chips are not coming out of the hole 3) Dull drill bit 4) Feeding the workpiece too slowly 5) Not lubricated	1) Change the speed 2) Retract the drill bit frequently to clear the chips 3) Sharpen or replace the drill bit 4) Feed fast enough to cut the workpiece 5) Lubricate the drill bit with cutting oil or motor oil
Excessive drill run out or wobble, drilled hole is not round	1) Bent drill bit 2) Bit improperly installed in the chuck 3) Worn spindle bearings 4) Lengths of cutting flutes or angles not appropriate for the hardness of the wood grain 5) Chuck not properly installed	1) Replace the drill bit 2) Reinstall the bit. 3) Replace the bearing. Take to a qualified service technician 4) Sharpen the drill bit correctly or replace with the appropriate type. 5) Reinstall the chuck.
Drill bit binds in the workpiece	1) The workpiece is pinching the bit 2) Excessive feed pressure	1) Support or clamp the workpiece. 2) Feed more slowly.
Spindle returns too slowly or too quickly	Coil spring has improper tension	Adjust the coil spring tension
Chuck falls off spindle	Dirt, grease, or oil on the tapered surface on the spindle or in the chuck	Clean the tapered surface of both the chuck and spindle with a household detergent.
Motor will not run	1) Defective or broken switch 2) Defective or damaged power cord 3) Open circuit, loose connections, or burned out motor 4) Low voltage	1) Take to a qualified service technician 2) Take to a qualified service technician 3) Take to a qualified service technician 4) Check the power line for the proper voltage. Use another circuit or have a qualified electrician upgrade the service.
Motor stalls	1) Short circuit in motor 2) Incorrect fuses or circuit breakers 3) Overloaded circuit 4) Low Voltage	1) Take to a qualified service technician 2) Replace with correct fuse or circuit breaker for the circuit 3) Turn off other machines and retry 4) Check the power line for the proper voltage. Use another circuit or have a qualified electrician upgrade the service.

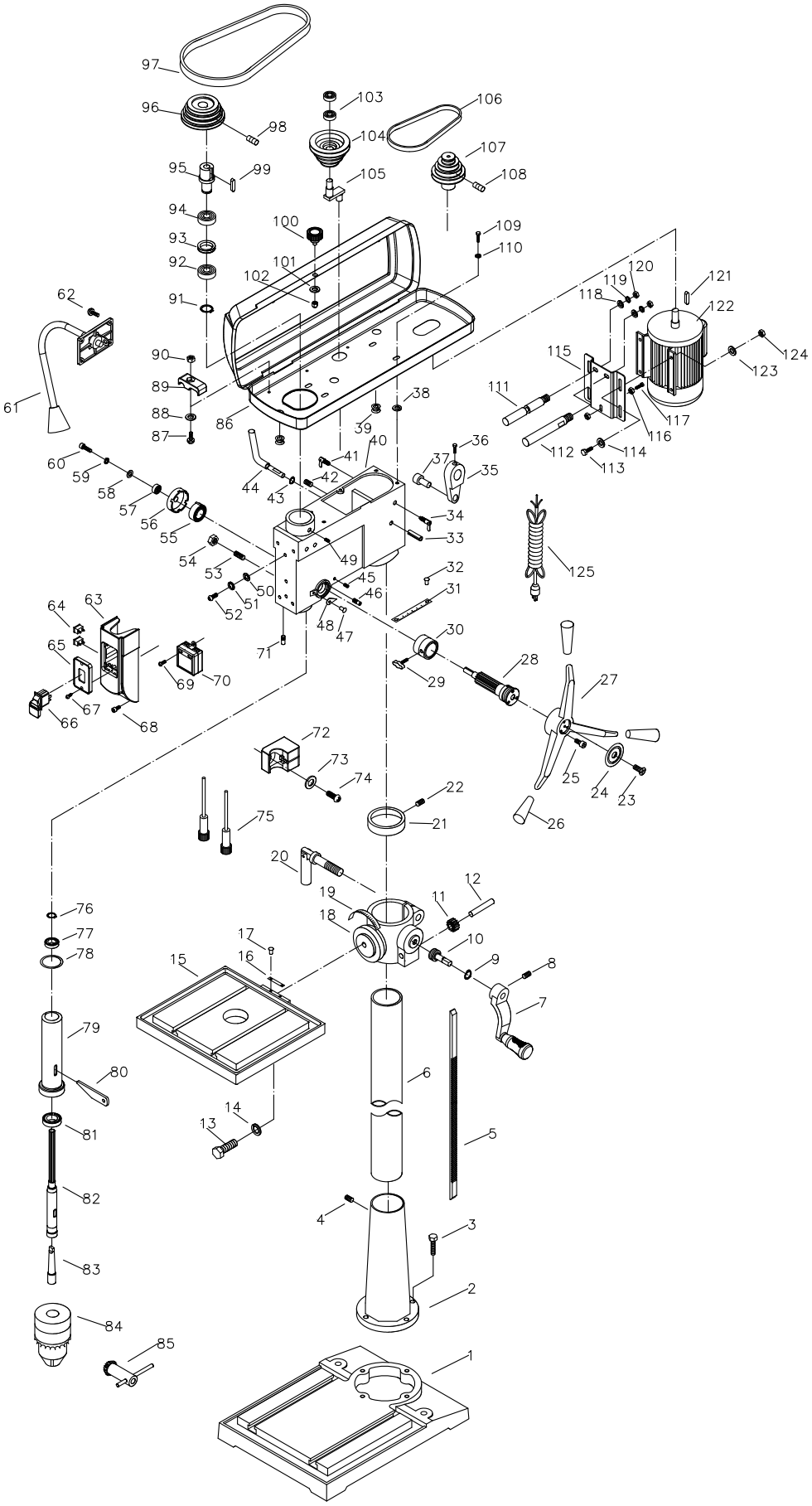
EXPLODED VIEW & PARTS LIST

No.	Part Number	Description	Qty
1	4227-001	Base	1
2	4227-002	Column support	1
3	4227-003	Hex head bolt	4
4	4227-004	Set screw	2
5	4227-005	Gear rack	1
6	4227-006	Column	1
7	4227-007	Table adjusting handle	1
8	4227-008	Set screw	1
9	4227-009	Retaining ring	1
10	4227-010	Worm shaft	1
11	4227-011	Worm gear	1
12	4227-012	Pin	1
13	4227-013	Hex head bolt	1
14	4227-014	Lock washer	1
15	4227-015	Table	1
16	4227-016	Pointer	1
17	4227-017	Rivet	2
18	4227-018	Table support bracket	1
19	4227-019	Angle scale	1
20	4227-020	Table locking handle	1
21	4227-021	Column collar	1
22	4227-022	Set screw	1
23	4227-023	Flat head screw	1
24	4227-024	Hub cover	1
25	4227-025	Socket head screw	3
26	4227-026	Handle cap	3
27	4227-027	Feed handle	1
28	4227-028	Gear shaft	1
29	4227-029	Wing screw	1
30	4227-030	Scale ring	1
31	4227-031	Depth scale	1
32	4227-032	Rivet	2
33	4227-033	Spring pin	2
34	4227-034	Wing screw	1
35	4227-035	Belt tension block	1
36	4227-036	Hex head bolt	1
37	4227-037	Pin	1
38	4227-038	Rubber washer	4
39	4227-039	Bushing	2
40	4227-040	Head	1
41	4227-041	Wing screw	1
42	4227-042	Set screw	2

No.	Part Number	Description	Qty
43	4227-043	Retaining ring	1
44	4227-044	Belt tension handle	1
45	4227-045	Set screw	2
46	4227-046	Pin	1
47	4227-047	Rivet	2
48	4227-048	Pointer	1
49	4227-049	Set screw	1
50	4227-050	Serrated washer	1
51	4227-051	Lock washer	1
52	4227-052	Pan head screw	1
53	4227-053	Set screw	1
54	4227-054	Nut	1
55	4227-055	Spring	1
56	4227-056	Spring cap	1
57	4227-057	Nut	1
58	4227-058	Flat washer	1
59	4227-059	Lock washer	1
60	4227-060	Socket head screw	1
61	4227-061	LED light assembly	1
62	4227-062	Pan head screw	4
63	4227-063	Switch box	1
64	4227-064	LED & Laser switch	2
65	4227-065	Switch plate	1
66	4227-066	Switch	1
67	4227-067	Thread forming screw	2
68	4227-068	Socket head screw	4
69	4227-069	Pan head screw	2
70	4227-070	Transformer	1
71	4227-071	Set screw	1
72	4227-072	Chuck key seat	1
73	4227-073	Flat washer	1
74	4227-074	Pan head screw	1
75	4227-075	Laser	2
76	4227-076	Retaining ring	1
77	4227-077	Ball bearing	1
78	4227-078	Rubber washer	1
79	4227-079	Quill	1
80	4227-080	Chuck removing tool	1
81	4227-081	Ball bearing	1
82	4227-082	Spindle	1
83	4227-083	Arbor	1
84	4227-084	Chuck	1

No.	Part Number	Description	Qty
85	4227-085	Chuck key	1
86	4227-086	Belt house	1
87	4227-087	Pan head screw	3
88	4227-088	Flat washer	3
89	4227-089	Cord clamp	3
90	4227-090	Nut	3
91	4227-091	Retaining ring	1
92	4227-092	Ball bearing	1
93	4227-093	Spacer	1
94	4227-094	Ball bearing	1
95	4227-095	Sleeve	1
96	4227-096	Spindle pulley	1
97	4227-097	V belt	1
98	4227-098	Set screw	1
99	4227-099	Key	1
100	4227-100	Belt house knob	1
101	4227-101	Flat washer	1
102	4227-102	Nut	1
103	4227-103	Ball bearing	2
104	4227-104	Idle pulley	1
105	4227-105	Crank shaft	1
106	4227-106	V belt	1
107	4227-107	Motor pulley	1
108	4227-108	Set screw	1
109	4227-109	Hex head bolt	4
110	4227-110	Flat washer	4
111	4227-111	Sliding shaft	1
112	4227-112	Sliding shaft	1
113	4227-113	Hex head bolt	4
114	4227-114	Flat washer	4
115	4227-115	Motor support plate	1
116	4227-116	Nut	2
117	4227-117	Hex head bolt	1
118	4227-118	Flat washer	4
119	4227-119	Lock washer	2
120	4227-120	Nut	2
121	4227-121	Key	1
122	4227-122	Motor	1
123	4227-123	Flat washer	4
124	4227-124	Nut	4
125	4227-125	Power cord	1
126	4227-126	Hex wrench (not shown)	4

EXPLODED VIEW & PARTS LIST



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