

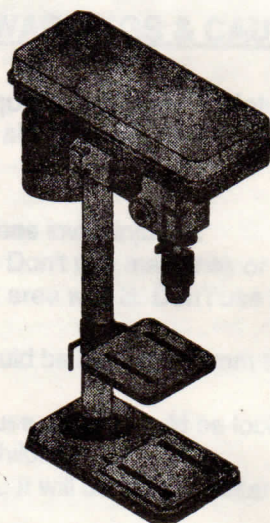
CENTRAL MACHINERY

®

5 SPEED DRILL PRESS

Model 34231

ASSEMBLY & OPERATING INSTRUCTIONS



Distributed Exclusively by



**HARBOR FREIGHT
TOOLS**



3491 Mission Oaks Blvd. / Camarillo, CA 93011

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For technical questions and replacement parts, please call 1-800-444-3353.

SPECIFICATIONS

Specification	Rating
Max. Plunging Distance	8 1/4"
Motor	1/3 HP. 2.3 amps @ 110V; 60Hz / 1720 amps
Overall Height	22-12"
Table	6-1/2" square
Speeds	620,1100,1720,2340,3100 RPM

SAVE THIS MANUAL

You will need this manual for the safety instructions, operating instructions, and parts list. Put it in a safe, dry place for future reference. **Keep your invoice with this manual. Write the invoice number on the inside of the front cover.**

**READ ALL INSTRUCTIONS
BEFORE ASSEMBLING OR
OPERATING THE DRILL
PRESS.**

SAFETY WARNINGS & CAUTIONS

When using electric tools, machines or equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury. **READ ALL INSTRUCTIONS BEFORE USING THIS TOOL**

1. **KEEP WORK AREA CLEAN.** Cluttered areas invite injuries.
2. **CONSIDER WORK AREA CONDITIONS.** Don't use machines or power tools in damp, wet, or poorly lit locations. Don't expose to rain. Keep work area well lit. Don't use tools in the presence of flammable gases or liquids.
3. **KEEP CHILDREN AWAY.** All children should be kept away from the work area. Don't let them handle machines, tools or extension cords.
4. **STORE IDLE EQUIPMENT.** When not in use, tools should be locked up in a dry location to inhibit rust. If possible, store in an area out of reach of children.
5. **DON'T FORCE THE MACHINE OR TOOL.** It will do the job better and more safely at the rate for which it was intended.
6. **USE THE RIGHT TOOL.** Don't force a small tool or attachment to do the work of a larger industrial tool. Don't use a tool for a purpose for which it was not intended.
7. **DRESS PROPERLY.** Don't wear loose clothing or jewelry. They can be caught in moving parts. Protective, electrically non-conductive gloves and non-skid footwear are recommended when working. Wear confining hair covering to contain long hair, preventing it from getting caught in machinery.
8. **USE EYE AND EAR PROTECTION.** Use a full face mask if the work you're doing produces metal filings, dust or wood chips. Goggles are acceptable in other situations. Wear a clean dust mask if the work creates a lot of fine or coarse dust. When operating for extended periods of time, use approved ear protection. Safety goggles, ear protectors, and dust masks are available from Harbor Freight Tools.
9. **DON'T ABUSE THE POWER CORD.** Do not yank it to disconnect it from receptacle. Do not move bench-mounted or floor-standing machines with the power cord in the outlet. Keep cord away from heat, oil, and sharp edges.
10. **SECURE WORK.** Use clamps or a vise to hold the work if possible. It's safer than using your hands and it frees both hands to operate the tool.
11. **DON'T OVERREACH.** Keep proper footing and balance at all times. Do not reach over or across machines that are running.

12. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have them repaired by an authorized service facility. Keep handles dry, clean, and free from oil and grease.
13. **DISCONNECT POWER.** Unplug when not in use, before servicing, and when changing accessories such as blades, bits, and cutters.
14. **REMOVE CHUCK KEY.** Make it a habit to check that the chuck key is removed from the tool and work surface before plugging it in.
15. **OUTDOOR EXTENSION CORDS.** When the equipment is operated outdoors, use only extension cords intended for outside use. See chart under "Extension Cords" for the proper AWG rating depending upon length of the cord.
16. **STAY ALERT.** Watch what you are doing, use common sense. Don't operate any tool when you are tired.
17. **CHECK DAMAGED PARTS.** Before using any tool, any part that appears 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 other conditions that may affect its operation. Any part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in the instruction manual. Have defective switches replaced by an authorized service center. Don't use the tool if switch does not turn on and off properly.
18. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
19. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
20. **DO NOT OPERATE TOOL IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate machine.
21. **NEVER LEAVE TOOL RUNNING UNATTENDED.** Always turn off power. Do not leave tool until it comes to a complete stop.
22. **DO NOT ALTER TOOL.** Any alterations or modifications to this tool may result in dangerous conditions. Remember this tool is precision built to perform specific operations. Any alterations will void the warranty.
23. **DO NOT DISASSEMBLE.** When service is required, take tool to a qualified technician. Incorrect reassembly can result in electric shock, fire, or further damage to the tool.
24. **IF THE BIT BINDS,** reverse drilling direction to remove the bit from work. Then inspect bit for sharpness. Use a new bit if necessary.

VOLTAGE WARNING

Common household current is 110-120 volts. As long as your tool is rated from 110V-120V there will be no complications using this tool with household receptacles. If your tool is rated 220V-240V it has a completely different style of plug and must be used with a 220V-240V receptacle. Never try to plug a 110V-120V tool into a 220V-240V circuit (or vice-versa) or serious complications will arise, including possible injury to the operator. The plugs and receptacle have completely different shapes to prevent this from occurring accidentally. Do not modify your plug in any way. If you have any doubts, call a qualified electrician.

EXTENSION CORDS

You must use a three-prong extension cord with three-prong receptacles. Only use rounded jacket extension cords, preferably listed by the Underwriters Laboratories (UL). Make sure the cord is rated for outdoor use if you plan on using the tool outside; if you plan on indoor use, you may also use an outdoor rated cord. Extension cords rated for outdoor use have the letters "WA" on the cord jacket.

The extension cord must have a minimum wire size depending on the amperage of the tool and the length of the extension cord. This size is signified by its AWG (American Wire Gauge) rating; the smaller the gauge, the greater the cable's capacity. If you are using two or more cords, the total length of the combined cords must be used to determine the minimum AWG rating. Each of the cords used must meet this rating.

The chart below is used to determine the rating required according to the length of the cord(s). The amps of your tool are found either in this manual, or on the nameplate of the tool.

AMP RATING	TOTAL EXTENSION CORD(S) LENGTH IN FEET								
	25	50	75	100	125	150	175	200	
0-10.0	18	18	16	16	14	14	12	12	A
10.1-13.0	16	16	14	14	14	12	12	12	W
13.1-15	14	14	12	12	12	12	12	—	G

Cord Length / Tool Amp Rating / Cord AWG Rating Chart

Always inspect extension cords for any damage. If there are any loose, frayed or exposed wires, damaged insulation, or defective connections, replace the cord. Harbor Freight Tools can supply UL listed and outdoor rated cords in various AWG ratings if needed.

UNPACKING LIST

Item #	Description	Qty
N/A	Table Assembly	1
N/A	Drill Press Assembly	1
N/A	Instruction Manual	1
1	Base	1

Item #	Description	Qty
4	Column	1
5	Bolt	3
10	Handle Spokes	3
73	Chuck	1

ASSEMBLY

Step 1: Place the **BASE (#1)** on a flat stable surface.

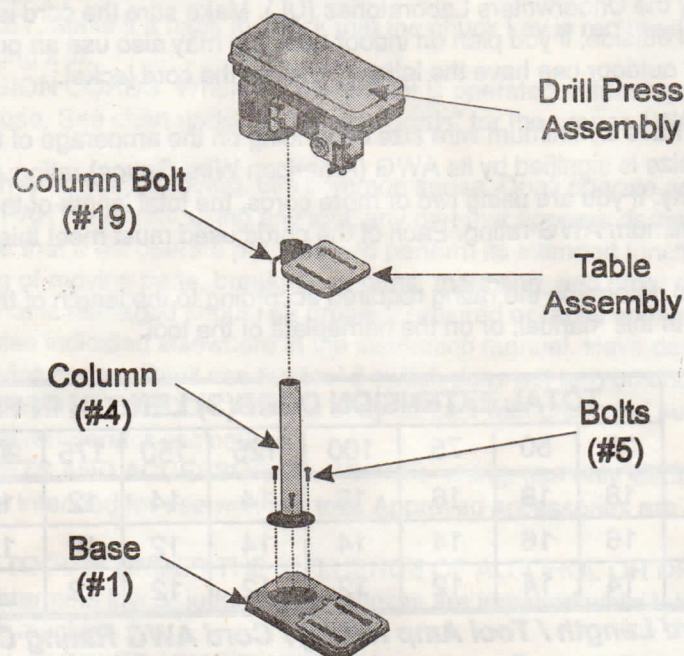


Figure 1 -- Assembly

Step 2: Place the **COLUMN (#4)** on the **BASE** and secure using its **BOLTS (#5)** as shown in Figure 1.

Step 3: Slide the **Table Assembly** onto the **COLUMN** and secure it in place by tightening the **COLUMN BOLT (#19)**.

Step 4: Place the **Drill Press Assembly** onto the **COLUMN**. It may be secured in place by tightening its **SET SCREW (#26)**.

Step 5: Attach the **HANDLE SPOKES (#43)** to the **CROSS SHAFT (#38)** as shown in Figure 2.

Step 6: Put a slight amount of Graphite Spray onto the **SPINDLE (#58)** and then fit the **CHUCK (#73)** onto the **SPINDLE**.

Step 7: Place a piece of wood under the end of the **CHUCK** and use a hammer to sharply tap the **CHUCK** in to place. The **CHUCK** must be firmly afixed to the **SPINDLE** for the Drill Press to operate correctly.

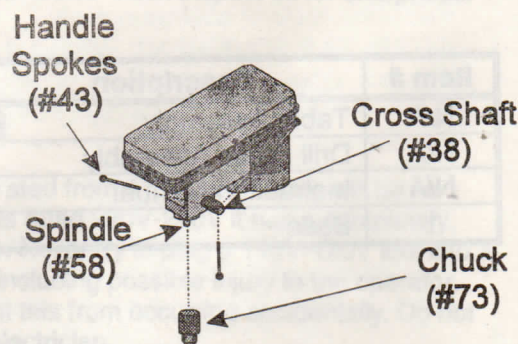


Figure 2 -- Attaching the Handle Spokes and Chuck

OPERATION

General

The following tips may prove helpful in using this tool:

Do not wear gloves while operating this tool. Gloves may catch in moving parts and cause severe injury.

Avoid overloading the tool. Always use sharpened drill bits. Do not apply excessive pressure to the Drill Press while drilling. If the speed drops abnormally, decrease pressure immediately. If the bit stops abruptly or the bit becomes blocked, switch the Drill Press off at once.

Ensure the safety of the work space. Clear the work area of all parts and debris that may cause injury by flying objects. Securely fix the work piece with a suitable clamp before drilling to avoid hand injury.

Inspect the drill before use. Before drilling, run the tool for about ten seconds to ensure all moving parts are running smoothly and there are no loose parts, rattles, or sparking that would indicate defects.

Drilling metal. Use a cutting lubricant when drilling metal. For easier starting, center punch the hole before drilling. Use only enough pressure to keep the bit cutting. After the bit has broken through the metal, turn the work piece over and finish the hole from the reverse side of your work.

Drilling wood or plastic. There is no need to bear down on the tool when drilling holes in wood using a wood drill with a guide screw. The guide makes it bore naturally by itself. Once the bit has broken through the wood, complete the hole from the opposite side to avoid splintering.

Inserting And Removing Drill Bits

To insert and remove drill bits, do the following:

Step 1: Turn the CHUCK to open the CHUCK jaws until there is enough space to accept the drill bit you have chosen. Refer to Figure 3.

Step 2: Insert the drill bit.

Step 3: Turn the CHUCK to tighten the jaws around the drill bit shaft.

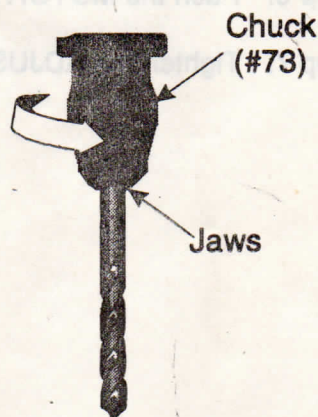
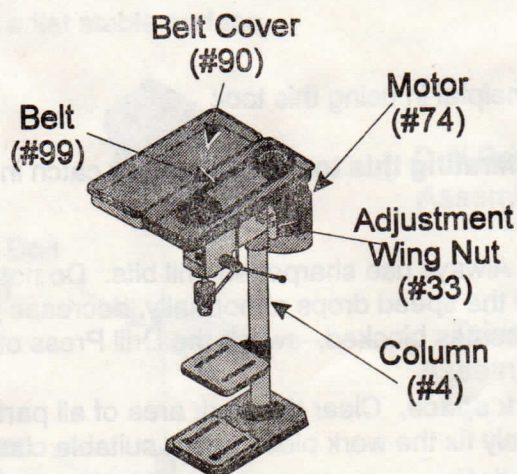


Figure 3 -- Installing Drill Bits

Setting Spindle Speed

**Figure 4 -- Setting the Speed Spindle**

The speed of your Drill Press may be adjusted by positioning the BELTS on the PULLEYS. **Never attempt to change the Drill Press speed without first unplugging the Drill Press motor.**

- Step 1: Loosen the ADJUSTMENT WINGNUT (#33).
- Step 2: Decrease the tension on the BELT (#99) by pushing the MOTOR (#74) towards the COLUMN (#4).
- Step 4: Refer to the SPINDLE (#58) speed chart located on the inside of the BELT COVER (#90) for the desired BELT and pulley combination.
- Step 5: Place the BELT on the pulleys.
- Step 6: Push the MOTOR away from the COLUMN to tighten the BELT on the pulleys.
- Step 7: Tighten the ADJUSTMENT WINGNUT.

Adjusting Plunging Depth Scale

Your Drill Press has a maximum plunging depth of 2". The scale must be adjusted before use to ensure an accurate reading.

Step 1: Loosen the CAP SCREW (#7).

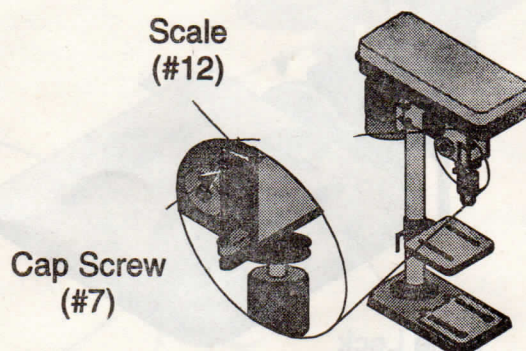


Figure 5 – Loosening the Scale Set Wingnut

Step 2: Set the DEPTH POINTER (#70) TO 0".

Step 3: Tighten the CAP SCREW.

Table Adjustment

Step 1: Move the TABLE (#21) up and down by loosening the COLUMN LOCK HANDLE (#19) and sliding it up or down on the COLUMN (#4).

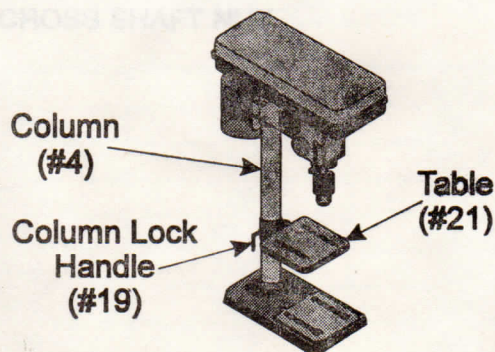


Figure 6 – Adjusting Table

Step 2: When the TABLE is in the desired location, tighten the COLUMN LOCK HANDLE.

Diagonal Drilling

Your Drill Press may be used for diagonal drilling or for drilling into an inclined workpiece. Always clamp the workpiece down when drilling with the TABLE (#21) in an angled position.

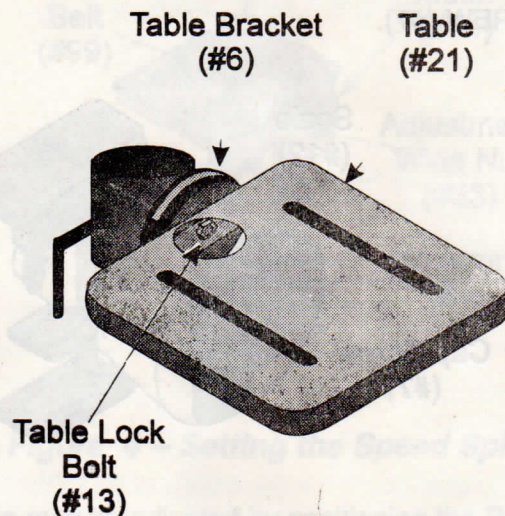


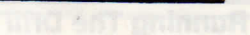
Figure 7 -- Turning the Table

Step 1: The TABLE will spin on the TABLE BRACKET (#6) by loosening the TABLE LOCK BOLT (#13) and turning the TABLE to the desired position. The TABLE may be angled up to 40 degrees in either direction.

Step 2: When the TABLE is in the desired location, tighten the TABLE LOCK HANDLE.



Figure 8 -- Adjusting Table



- (min)

Running The Drill

- Step 1: Set the TABLE (#21) in the desired position, making sure that the drill bit will not bite into the TABLE (see Table Adjustment instructions above).
- Step 2: Make sure the Drill Press ON/OFF SWITCH (#87) is in the off position and plug the Drill Press into the appropriate electrical outlet (see Voltage Warning).
- Step 3: See the Materials Drill Speed Table at the end of this section to choose the correct belt and pulley combination.
- Step 4: Place the workpiece on the TABLE and clamp it down.
- Step 5: Turn the Drill Press on by flipping the SWITCH to the on position.
- Step 6: Once the drill has reached a constant speed, lower it by turning the CROSS SHAFT (#38) handle in a counterclockwise direction.
- Step 7: When finished, allow the SPINDLE (#58) to rise completely back in place before turning off the Drill Press.
- Step 8: When the SPINDLE has stopped spinning, remove the workpiece. Always wait until the SPINDLE has stopped spinning completely before attempting to remove the workpiece.

Cross - Reference List of Drill, RPM and Materials

MATERIAL				
Drill Dia. (mm)	Cast Iron	Steel	Iron	Aluminum
ROTATION SPEED - RPM				
3	2550	1500	2230	9500
4	1900	1200	1680	7200
5	1530	955	1340	5700
6	1270	800	1100	4800
7	1090	680	960	4100
8	960	600	840	3600
9	850	530	740	3200
10	765	480	670	2860
11	700	435	610	2500
12	640	400	560	2400
13	590	370	515	2200

MAINTENANCE

Cleaning

Always keep the MOTOR (#74) clean. The ventilation passage should be kept clean and free from obstruction. Prevent metal, wood chips, dust and debris from accumulating in this area. Clean immediately after use to maintain the tool in the best, safest operating condition. Use a clean cloth to wipe off tool. Use of oil, grease, and other substances may cause deterioration.

Always keep the CHUCK (#73) clean. If jaws do not operate smoothly, have CHUCK serviced by a qualified technician.

PARTS LIST

Item #	Description	Qty
1	Base	1
2	Column Holder	1
4	Column	1
5	Hex Bolt	3
6	Table Bracket	1
7	Cap Screw	1
8	Set Ring	1
9	Hex Nut	1
10	Set Bolt	1
11	Hex Nut	1
12	Scale	1
13	Table Lock Bolt	1
14	Locater Pin	1
15	Hex Nut	1
16	Angle Scale	1
19	Column Lock Handle	1
21	Working Table	1
25	Head Frame	1
26	Set Screw	1
31	Spring	1
32	Motor Bar	1
32-1	Slide Bar	1
33	Adjustment Wingnut	1
35	Washer	2
36	Hex Bolt	2
37	Hex Nut	2
37-1	Bolt	1
37-2	Nut	1
38	Cross Shaft	1
43	Handle Spokes	3
44	Handle Grip	3
49	Coil Spring	1
50	Spring Cover	1
51	Spring Seat	1
52	Spring Seat Set Screw	1
53	Nut	2
54	Quill Set Screw	1

Item #	Description	Qty
55	Nut	1
56	Quill	1
57	Rubber Washer	1
58	Spindle Shaft	1
59	Ball Bearing	1
61	Ball Bearing	1
62	Retaining Ring	1
63	Retaining Ring	1
65	Driving Sleeve	1
66	Ball Bearing	2
67	Collar	1
69	Pulley Nut	1
70	Spindle Pulley	1
71	Arbor	1
73	Chuck	1
74	Motor	1
75	Motor Cable	1
76	Bolt	1
79	Motor Pulley	1
80	Key	1
81	Set Screw	2
82	Wire Insulator	1
83	Wire Cover	1
84	Screw	1
85	Electric Cord	1
86	Clip Terminal	1
87	Switch	1
88	Switch Cover	1
89	Switch Cover Screw	1
90	Belt Cover	1
91	Switch Bracket	1
92	Screw	1
94	Belt Cover Knob	1
96	Dampener	4
99	V-Belt	1
100	Hex Screw	1

DRILL PRESS ASSEMBLY

