

OTMT

**Before Operating Your Tools,
Please Read These Instructions Carefully**



ITEM NO.87-115-925&926
MODEL NO . OT21513A/OT21516



BENCH DRILL PRESSES

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WARNING

For Your Own Safety Read Instructions Manual Before Operating Drill Press:

1. Wear eye protection.
2. Do not wear gloves, necktie or loose clothing.
3. Clamp or brace work-piece against column to prevent rotation.
4. Use recommended speed for drill accessory and work-piece material.

GENERAL SAFETY INSTRUCTIONS

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a 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 EXVIRONMENT.** Don't use power tools in damp or wet locations or expose them to rain. Keep work area well lighted.
5. **KEEP CHILDREN AWAY.** ALL visitors should be kept at safe a distance from work area.
6. **MAKE WORKSHOP KID PROOF** with padlocks master switches or by removing starter keys.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.
9. **WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets or other jewelry to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
10. **ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eye glasses may have impact resistant lenses but 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 the tool.
12. **DON'T OVER REACH.** 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 accessories such as blades, bits, cutters, etc.
15. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in OFF position before plugging in.
16. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for accessories. The use of improper accessories may cause injury to persons or property.
17. **NEVER STAND ON TOOL.** Serious injury could occur if the tools 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 operated and perform its' intended function-check for alignment of moving parts binding of moving parts breakage of parts and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced before operation this tool.
19. **DIRECTION OF FEED;** Feed work into a blade or cutter against the direction of rotation of the blade or cutter.
20. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes ot a complete stop.

SAFETY INSTRUCTIONS FOR DRILL PRESS

1. Wear eye protection.
2. Do not wear gloves, necktie or loose clothing.
3. Clamp or brace work piece against column to prevent rotation.
4. Use recommended speed for drill accessory and work-piece material.
5. Be sure drill bit or cutting tools is securely locked in the chuck.
6. Be sure chuck key is removed from the chuck before turning on power.
7. Adjust the table or depth stop to avoid drilling into the table. Shut off the power remove the drill bit or cutting tool and clean the table before releasing the machine.
8. Do not operate until drill press is completely assembled and installed according to the instruction.
9. If any part of your drill press has been damaged, broken or malfunction, do not operate it until the part is properly repaired or replaced.
10. Never place your fingers in a position where they could contact the drill or other cutting tools. The work-piece may unexpectedly shift..
11. Never use your hand to hold the work-piece while drilling, always screw the work piece right on the working table or use a drill vise to prevent accidental injury.
12. Never perform any operation by moving the head or table with respect to one another. Do not pull the motor switch "ON" or stare any operation before checking that the head and the table lock handles are clamped tight to the column and head and table support collars are correctly positioned.
13. Before pulling the motor switch "ON" be sure the belt guard is closed and the chuck is installed properly.
14. Lock the motor switch when leaving the drill press. Do not perform layout, assembly or setup work on the table while the cutting tools is rotating.

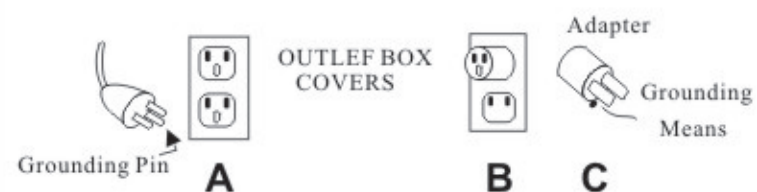
VOLTAGE WARNING

1. Before connecting the tool to a power source (receptacle, outlet, etc) Be sure the voltage supplied is the same as the rating on the tool motor.
 2. A power source with voltage greater than that specified for the tool can result in serious injury to the user.
 3. If you're unsure of the voltage rating do not use tool.
- Also using a power source with voltage less than that required for the tool will harm the motor.

GROUNDING INSTRUCTIONS

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 tools is properly grounded.
5. Use only 3-wire extension cords that have 3-prong mounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.
7. This tool is intended for use on a circuit that has an outlet that look 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 2-pole receptacle as shown in Sketch B if a properly grounded outlet is not available. The temporary adapter should be used only until a qualified electrician can install a properly grounded outlet. The green colored rigid ear, lug, etc. extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box.

GROUNDING METHODS



ASSEMBLY

When assembling unit, refer to drawings for parts location.

(Please see diagrams on pages 5 and 6)

1. Place the base on a flat surface and fasten the column assembly.
2. Slip the table assembly onto the column and slide it down until it rests on the base.
3. Install the table lock handle in the table assembly.
4. Position the head assembly on top of the column and secure it in place by tightening two setscrews.
5. Assemble handles into the feed shaft on the right side of the drill press head.
6. Thoroughly clean the inside of the chuck taper and the spindle taper with a clean soft cloth and solvent. Insert the chuck onto the spindle. Tap sharply using a piece of wood to prevent damage to the chuck.
7. Place the belt on the pulley. Slide the motor until the belt is moderately tight. Tighten the slide bar bolt the drill press head.
8. Be sure the drill press switch is off and the unit unplugged. Rotate the pulleys by hand to check the alignment.
9. Close the cover. Plug the cord into a grounded outlet. "JOG" the drill press on/off briefly to be sure that all parts are clearing the guards.

TABLE ADJUSTMENTS

1. Height adjustments: To adjust table, hold the table with one hand and loosen the table lock handle. Adjust the table to the desired position and retighten the lock handle.
2. Tilting worktable: Loosen the pivot bolt. Remove the small locator pin. To do this loosen the nut until the pin easily ships out. Tilt the table to the desired angle up to 45 degree and retighten bolt. Reinsert the locator pin when returning the table to zero degree.
3. Rotation of worktable: Loosen the table bracket bolt (item 7 in assembly diagram). To obtain more distance between the chuck and the table, the worktable can be rotated 180 degree and the base can be used as a worktable. This will permit the drilling of larger objects.

INSTALLATION

1. After installing the drill press, use kerosene to wash off the anti-rust oil protective coating applied at the factory. Then wipe drill with lubrication oil.
2. Install your drill press on a sturdy surface.
 - a. Check the drill press for shaking when the motor is switch "ON".
 - b. Check the spindle shaft movement for wobble or binding.

OPERATION

1. Screw or clamp the work piece to the drill table before drilling. This will prevent injuries and increase precision workmanship.
2. Insert selected drill bit in the chuck that is located below the spindle shaft.
3. Plug the electric cord into outlet and press "ON" the switch. Then the spindle shaft will rotate freely.
4. When drilling hold the handle at the right side of the head frame and press downward.
5. If the spindle shaft rotates counter clockwise it is probably caused by reversed motor wiring connection. Unplug drill, check and reverse the two power connection to motor (do not change ground wire). Return to step 3 above.

MAINTENANCE

After using the machine, clean it completely and lubricate all sliding and moving parts. For your own safety, turn switch "OFF" and remove plug from power source outlet before maintaining or lubrication your drill press.

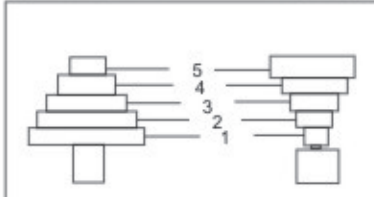
CAUTION

1. Before changing the speed or cutting bits, turn off the switch and wait until the machine is completely stop.
2. Remove the chuck key before starting the motor.
3. Never use your hand to hold an object while drilling it. Always screw or clamp the work piece tight on the drill table or use drill press vise to secure material to be drilled.
4. Keep your hand away from the drill bit while drilling.
5. Wear safety glasses when operation this drill press.

CHANGING SPEEDS

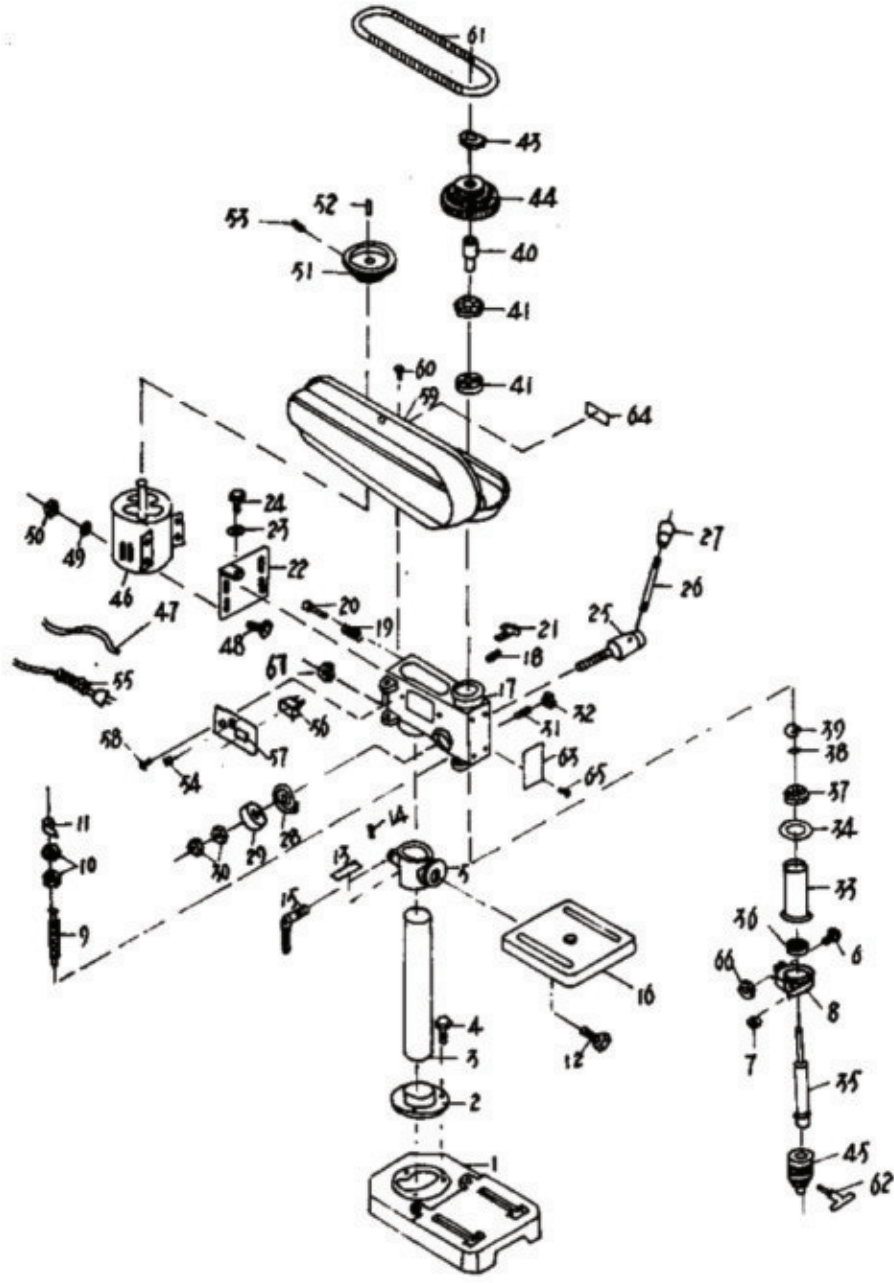
To change spindle speed, loosen the slide bar bolt, on the right side of the head. Slide the motor toward the front of the drill press and then tighten the slide bar bolt. This will loosen the belt and permit relocating the belt to desired pulley for the desired spindle speed. After selection has been made loosen the slide bar bolt, slide the motor toward the rear of the drill press and tighten the slide bar bolt again, check the belt for proper tension and make any final adjustment.

SPINDLE MOTOR 5 SPEED



R.P.M	1	2	3	4	5
50HZ	620	920	1280	1750	2620
60HZ	740	1100	1530	2100	3140

EXPLODED -VIEW -DIAGRAM



PARTS LIST

Part No.	Description	Qty	No.	Description	Qty	No.	Description	Qty
1305-1	Base	1	1305-24	Bolt	2	1305-47	Motor wire	1
1305-2	Column holder	1	1305-25	Fed shaft	1	1305-48	Bolt	4
1305-3	Column	1	1305-26	Handle bar	1	1305-49	Washer	4
1305-4	Bolt	3	1305-27	Grip	1	1305-50	Nut	1
1305-5	Table bracket	1	1305-28	Coil spring	1	1305-51	Motor pulley	1
1305-6	Headless set screw	1	1305-29	Spring cover	1	1305-52	Key	1
1306-7	Net	1	1305-30	Nut	2	1305-53	Headless set screw	2
1305-8	Set ring	1	1305-31	Quill set screw	1	1305-54	Wire insulator	2
1305-9	Bolt set	1	1305-32	Nut	1	1305-55	Wire	1
1305-10	Nut	1	1305-33	Quill	1	1305-56	Switch	1
1305-11	Scale	1	1305-34	Rubber washer	1	1305-57	Switch cover	1
1305-12	Pivot bolt	1	1305-35	Shalt	1	1305-58	Cross head set screw	3
1305-13	Angle scale	1	1305-36	Ball bearing	1	1305-59	Pulley cover	1
1305-14	Set screw	2	1305-37	Ball bearing	1	1305-60	Hat screw	4
1305-15	Table lock handle	1	1305-38	Retaining ring	1	1305-61	Vbelt wle	1
1305-16	Table	1	1305-39	Retaining ring	1	1305-62	Chuck key	1
1305-17	Head	1	1305-40	Driving sleeve	1	1305-63	Label	1
1305-18	Headless screw	2	1305-41	Ball bearing	2	1305-64	Speed label	1
1305-19	Spring	1	1305-43	Pulley set nut	1	1305-65	Drive screw	4
1305-20	Slide bar	1	1305-44	Spindle pulley	1	1305-66	Nut	1
1305-21	Slide bar boil	1	1305-45	Chuck	1	1305-67	Nut	2
1305-22	Motor base	1	1305-46	Mtor	1			
1305-23	washer	1						

Reference List of Devolution and Various Materials

Rotating Sped RPM	Materials					Gun Metal
	Cast Iron	Steel	Iron	Aluminum		
Drill Dia.(mm)						
Φ 3	2550	1600	2230			
Φ 4	1900	1200	1680			
Φ 5	1530	955	1340			
Φ 6	1270	800	1100			
Φ 7	1090	680	960			
Φ 8	960	600	840			
Φ 9	850	530	740			
Φ 10	765	480	670			
Φ 11	700	435	610	2600	2170	
Φ 12	640	400	560	2400	2000	
Φ 13	590	370	615	2200	1840	

TROUBLE SHOOTING

warning for your own safety .trun"OFF" or "O"and always remove plug frm power source outler before,roubleshooting

Trouble	Probable Cause	Remedy
Noisy operation	<ol style="list-style-type: none"> 1.Incorrect belt tension 2.Dry spindle 3.Loose spindle pulley or Motor pulley 	<ol style="list-style-type: none"> 1.Adjust tension. 2.Lubricate spindle 3.Tighten setscrews in pulleys
Bit bums or smokes	<ol style="list-style-type: none"> 1.Incorrect speed 2.Chips not coming out of hole. 3.Dull bit. 4.Feeding too lowly. 5.Dry cutting bit. 6.Bit running backwards. 	<ol style="list-style-type: none"> 1.Change speed 2.Retract bit frequently to clear chips 3.Sharpen or replace bit 4.Feed fast enough for drill bit to cut 5.Lubricate bit 6.Cheek motor rotation
Excessive drill run-out or wobble	<ol style="list-style-type: none"> 1.Bent bit 2.Worn spindle bearings 3.Bit not properly installed in chuck 4.Chuck not properly installed. 	<ol style="list-style-type: none"> 1.Use a straight bit 2.Replace bearings 3.Install bit properly 4.Intall chuck properly
Drill binds in work piece	<ol style="list-style-type: none"> 1.Bent bit 2.Worn spindle bearings 3.Bit not properly installed in chuck 	<ol style="list-style-type: none"> 1.Support or clamp work piece 2.Reduce feed rate 3.ADJUST TENSION
Work piece torn from hand	<ol style="list-style-type: none"> 1. Not supported or champed properly. 	<ol style="list-style-type: none"> 1.Support or clamp work piece properly
Motor running but shaft does not turn	<ol style="list-style-type: none"> 1. Setscrew in trolley works loose. 	<ol style="list-style-type: none"> 1.Lighten setscrew