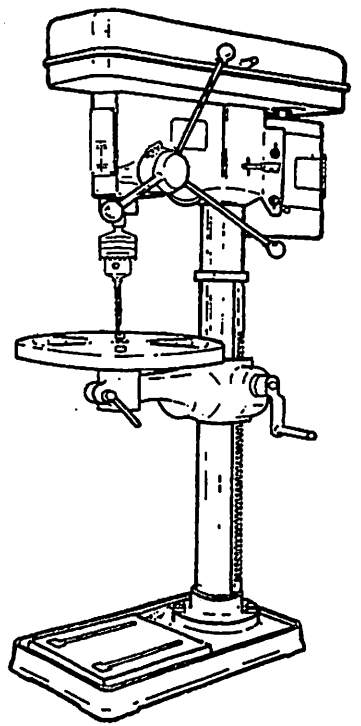
INSTRUCTION MANUAL

DRILLING MACHINE



FOR YOUR OWN SAFETY READ INSTRUCTION MANUAL
BEFRE OPERATING DRILLING MACHINE
RETAIN THIS MANUAL FOR FUTURE REFERENCE

BENCH DRILLING MACHINE PACKING LIST

No.	Name	13J		13E		13		16Q		16J		16JF		16G		19G		25GF		32JF	
		Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty	Spec	Q'ty
1	Assembly of spindle box		1		1		1		1		1		1		1		1		1		1
2	Assembly of table		1		1		1		1		1		1		1		1		1		1
3	Base		1		1		1		1		1		1		1		1		1		1
4	Column box		1									other box	1								
5	Drill chuck	Φ13	1	Φ13	1	Φ13	1	Φ16	1	Φ16	1	Φ16	1	Φ16	1	Φ16	1	Φ16	1	Φ16	1
6	V-belt	0-710	1	0-800	1	A-42"	1	0-520	2	A-584	1	A-584	1	A-600	1	A-630	1	A-787	1	A-1000	1
										A-600		A-600	1	A-630	1	A-660	1	A-889	1	A-889	1
7	Inner-hexagonspanner	4		4		4	1	4	1	4	1	4	1	4	1	4/5	1	5	1	5	1
8	Terminal of spindle								1		1		1		1		1		1		1
9	Hex bolts											M8×25	4								
												M12×50	4								
10	Wedge shifter								1		1		1		1		1		1		
11	Hex nuts											M8	4								
12	Washers											8	4								
13	Instruction manual		1		1		1		1		1		1		1		1		1		1
14	Packing list		1		1		1		1		1		1		1		1		1		1
15	Short bust										1							MT3/2	1	MT4/3	1
																		MT3/1	1	MT4/2	1

WARNING

For Your Own Safety Read Instruction Manual before Operating Drilling machine

1. Wear eye protection.
2. Do dot wear gloves necktie or loose clothing.
3. Clamp work piece or brace against column to prevent rotation.
4. Use recommended speed for drill accessory and work piece material.

SAFETY INSTRUCTIONS FOR DRILLING MACHINE

1. Wear eye protection.
2. Do dot wear gloves, necktie, or loose clothing.
3. Clamp work piece or brace against column to prevent rotation.
4. Use recommended speed for drill accessory and work piece material.
5. Be sure drill bit or cutting tool 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 atop to avoid drilling into the table. Shut off the power remove the drill bit on cutting tool and clean the table before leaving the machine.
8. Do dot operate until it is completely assembled and installed according to the instructions.
9. If any part of your drilling machine is malfunction or has been damaged or broken. do mot operate 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 tool if the work piece should unexpectedly shirt.
11. Never use your hand to bole on the object while drilling always screw the object tight on the working table or use the drill vise to prevent injury.
12. Never perform any operation by moving the bead or table with respect to one another. Do not pull the motor switch "ON" or start any operation before checking the bead and table lock handles are clamped tight to column and bead and table support collars are correctly position
13. Before pulling the motor with "on" be positive the belt guard is down the chuck is installed properly.
14. Lock the motor switch when leaving the drilling machine. Do not perform layout. assembly or setup word on the table while the cutting tool is rotating.

VOLTAGE WARNING

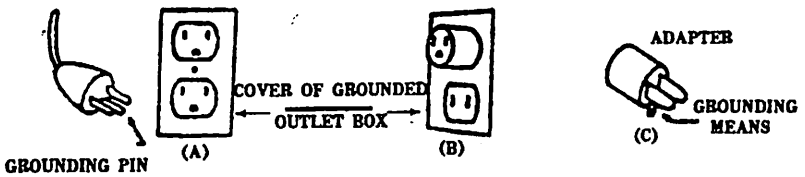
1. before connecting the tool to a power source(receptacle outlet etc) Be sure the voltage supplied is the game as the rating on the tool itself.
2. A power source with voltage greater than that specified for the tool can result in serious in jury to the user
3. If you're of the voltage rating do not use tool also using a power source with voltage less than that of the tool will harm the motor.

GROUNDING INSTRUCTIONS

1. In the event of a malfunction or breakdown grounding privides a path of least resistance for electric current to reduce the rise of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounded in 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 epuipment -grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer that is green with or with our yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood or if in doubt as to whether the tool is properly grounded.
5. Use only 3 wire extension cords that bave3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. repair or replace damaged or worn cord immedistely.
7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated in Sketch in Figure. The tool has a grounding plug that looks like the plug illustrated in Sketch in figure. A temporary adapter which looks like the adapter illustrated in Sketches B if a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear. lug. etc. extending from the adapter must be connected ground such as a properly grounded outlet box.

GROUNDING METHODS



ASSEMBLY (Please refer to assembly diagram on page 3.4)

1. Bench Drilling Machine
   a. Open the box and take out the base (No.1), working table (No.7or8) and column (No.2)assembly place it on a flat surface.
   b. Take out the head (No.23) and assemble to the column (No.2)
   c. Assemble the handle bar (No.31) and gripe (No.32) then screw it in the handle body (No.30)
2. Floor Type Drilling Machine
   a. Open the box and take out the base (No.1) and place it on a flat floor
   b. Take out the column (No.2) with bracket (No.5) and screw it on the base (No.1)
   c. Take out the bead (No.23) and assemble to the column (No.2)
   d. Than use the allen key for tightening the headless set screw (No.5)
   e. Bring out the handle bar (No.31) and gripe (No.32) then screw it in the handle body (No.30)

If any parts are missing. do not attempt to assemble the drilling machine plug in the power cord or turn the swich the missing parts are obtaind and installed correctly. Upon completion of assemble. Drilling machine can be washed with kerosene to remove anti-rust oil applied at factory then libricating oilcan be applied.

that can be clamped in center position at any height Feed slowly when the bit is about to cut through the wood to prevent splintering at any height Feed slowly when the bit is about to cut through the wood to prevent splintering the bottom face Use a scrap piece of wood for a base block under the word. This helps to reduce splintering and protects the point of the bit.

4. You can place any size of drill bit you desire in the chuck which is place below the spindle shaft.
5. Plug the electric socket to the outle and press "NO" the swich, then the spindle shaft will rotate freely.
6. When drilling hold on the handle at right side of the head frame and press downward.

ROUND-OUT TOLERANCE

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

MORSE TAPER DRILL BITS

To use mores taper bits remove chuck and taper. To remove taper and chuck adjust stationary depth to 3 inches (see septh instruction) Turn spindle manually lining up spindle and quill key holed. Using key bartap lightly until taper and chuck fall out loosen scale set handle and allow spindle assembly to return to its original position. Place tapered bit into the spindle hole twisting and pushing upward until bit is sung, place a block of wood on the table and crank up table until the tapered bit is firmly into the spindle.

LUBRICATION

The ball bearing in the quill and v-belt pulley are grease-sealed for life. Pull quill down to maximum depth and oil moderately once every 3 months. Oil slide bars lightly every 2 months Grease bracket if cranking becomes difficult.

MAINTENANCE

After using the machine you have to clean it completely and lubricate all sliding and moving parts.

PRECAUTION

1. In changing the speed you have to turn off the switch and wait until the machine is completely stop.
2. Take off the chuck key before starting the motor.
3. Never use your hand to hold on the object while drilling. Always screw the object tight on the working table use the drilling machine vise to prevent accident injury.
4. Keep off your hand from the drill bit while drilling.
5. If the spindle shaft rotate counter-clockwise. It means the wiring connection are wrong, so turn off the switch and change the connection, after changing the spindle shaft will rotate clockwise.

Reference list of drill, Revolution and Various Materials

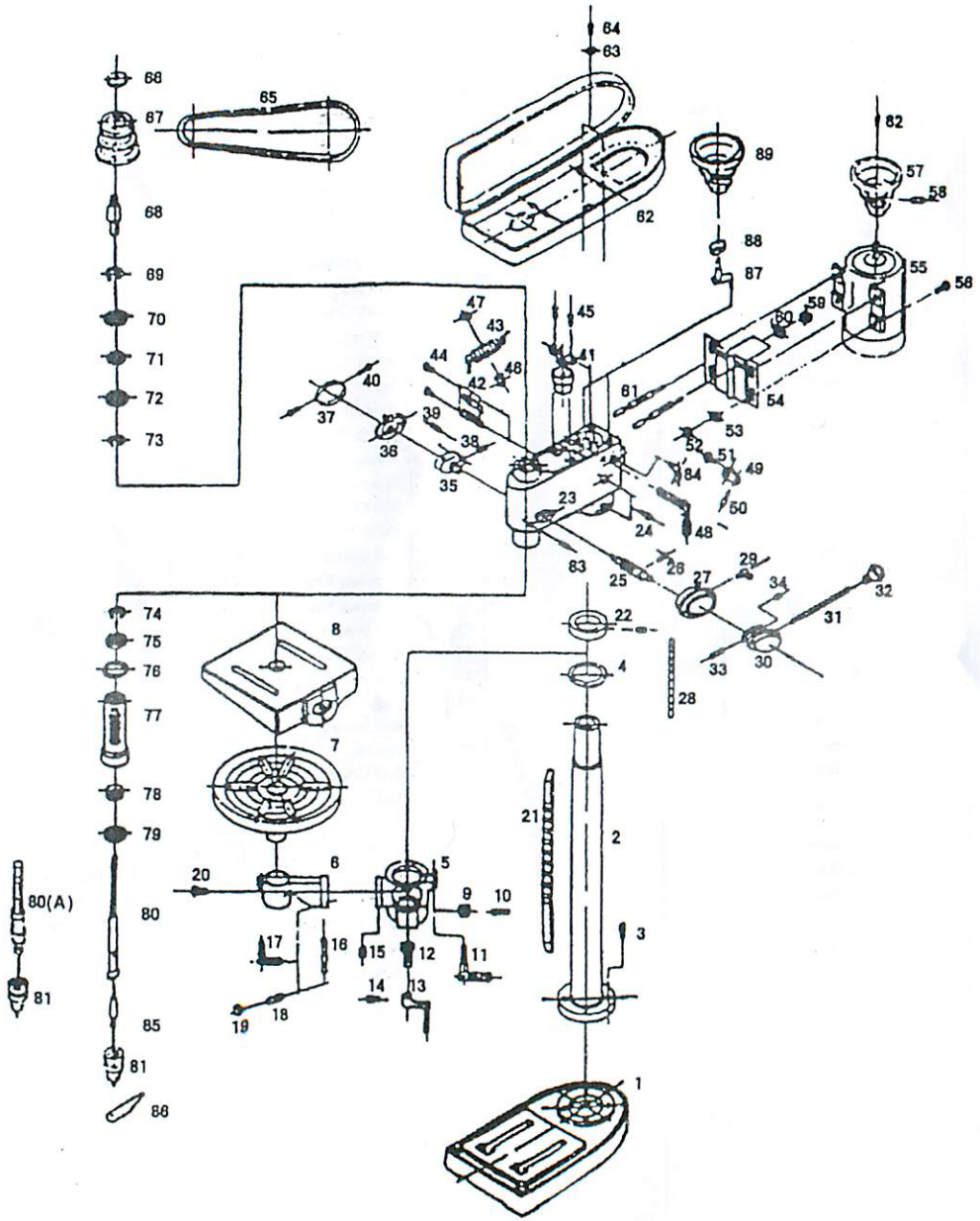
Drill Dia (mm)	Material				
	Cast Iron	Steel	Iron	Aluminum	Gun Metals
	Botative speed R.P.M				
Φ3	2550	1700	2230	6600	6000
Φ4	1900	1270	1680	5000	4500
Φ5	1530	1020	1340	4000	3600
Φ6	1270	850	1100	3300	3000
Φ8	1090	720	960	2800	2500
Φ9	960	630	840	2500	2250
Φ10	850	560	740	2200	2000
Φ11	765	510	670	2000	1800
Φ12	700	460	610	1800	1600
Φ13	640	420	560	1600	1500
Φ14	590	390	515	1500	1380
Φ15	545	360	480	1400	1280
Φ16	480	320	420	1250	1120
Φ18	425	280	370	1100	1000
Φ20	380	255	335	1000	900
Φ22	350	230	305	910	810
Φ25	305	210	270	800	720

OPERATION

Use scrap material for practice to the feel of the machine before attempting regular work.

1. Correct drilling speeds factors which determine the best speed to use in any of drill or other cutter, and quality of cut desired. The smaller the drill the greater the re-quired RPM, in sift materials, the speed should be higher than for hard metals.
2. Drilling in metal use clamps to hold the work when drilling in metal. The work should never be held in the bare hand, the lips of the drill may seize the work at any time especially when breaking through the stock. If the piece is whirled out of the operator's hand. He may be injured firmly while drilling any tilting twisting or shifting results not only in a rough bole, but also increases drill breakage. For flat work, lay the piece on a wooden base and clamp it firmly down against the table to prevent it from turning. If the piece is of irregular shape and cannot be laid flat on the table it should be securely blocked and clamped.
3. Boring in Wood Twist drills, although intended for metal drilling may also be used or boring holes in wood. However. Machine spur bits are generally prenferred for working in wood. Then cut a square bottom hole and are designed for removal of wood chips Do not use hand bits have a screw tip. At drilling machine speeds they turn into the wood so rapidly as to life the work off the table and whirl it. For through boring, line up the table so that the bit will enter the center bole to avoid damage. Scrible a vertical line on the front of the column and a matchmark on the table bracket so

ASSEMBLY DIAGRAM



PARTS LIST

FART NO	DESCRIPTION	Q'TT	REMARK	FART NO	DESCRIPTION	Q'TT	REMARK
1	Base	1	Round Table Only	51	Set Screw	1	
2	Colmma	1		52	Nut	4	
3	Bolt	1		53	Washer	4	
4	Dust Cover	3or 4		54	Motor Base	1	
5	Table bracket	1		55	Motor	1	
6	Table Are bracket	1		56	Bolt	4	
7	Table (Round)	1		57	Motor Pulley	1	
8	Table (Square)	1		58	Headless Set Screw	1	
9	Gear	1		59	Nut	2	
10	Shaft	1		60	Spring Washer	2	
11	Clamp Bolt	1		61	Slide Bar	2	
12	Ware Gear	1		62	Pulley Cover	1	
13	Handle	1		63	Washer	4 or 6	
14	Set Bole	1		64	Screw	4 or 6	
15	Angle Scale	1		65	V-Belt	1 or 2	
16	Scale	1		66	Pulley Nut	1	
17	Table Bolt	1		67	Spindle Pulley	1	
18	Pin	1		68	Spring Sleeve	1	
19	Not	1		69	Retaining Ring	1	
20	Set Screw	1		70	Ball Bearing	1	
21	Rack	1		71	Collar	1	
22	Rack Ring	1		72	Ball Bearing	1	
23	Body	1		73	Retaining Ring	1	
24	Headless Set Screw	1		74	Retaining Ring	1	
25	Feed Shaft	1		75	Ball Bearing	1	
26	Screw	1		76	Rubber Washer	1	
27	Scale Rick	1		77	Sleeve	1	
28	Scale	1		78	Thrust Bearing	1	
29	Clamp Bolt	1		79	Ball Bearing	1	
30	Handle body	1		80	Spindle	1	
31	Handle bay	1		81	Drill Chuck	1	
32	Knob	1		82	Key	1	
33	Roll pin	1		83	Pin	1	
34	Scale Guider	1		84	Slide Bar	1 or 2	
35	Spring Seat	1		85	Arbor	1	YT Type Only
36	Spring Plate	1		86	Wedge shifter	1	YT Type Only
37	Spring Cap	1		87	Center Pulley shaft	1	12 9 Speed Only
38	Ser Screw	1		88	Ball Bearing	2	
39	Spring Cap	1		89	Center Puller	1	12 9 Speed Only
40	Screw	1					
41	Light Socket	1					
42	Switch	1					
43	Wire	1					
44	Screw	2					
45	Cap Screw	2					
46	Bush (Rubber)	2					
47	Wire Clip	2					
48	Snifter Bar	1					
49	Shifter	1					
50	Pin	1					

INSTALLATION

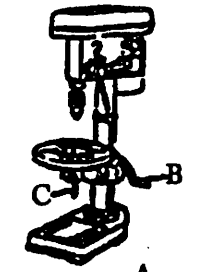
Install your tapping & drilling machine in flate. Sturdy floor or surface

1 Check if the tapping & drilling machine is shaking when the motor is switch "ON"

2 Check the table bracket if it is moving smoothly up and down.

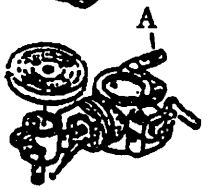
3 Check if the spindle shaft moves smoothly.

TABLE ADJUSTMENTS



To adjust table up or down, loosen column lock handle (A) then turn crank handle (B) to desired height. Re-tighten column lock handle (A) before drilling operation.

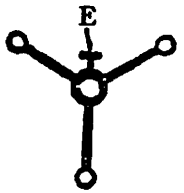
To swing table 360 loosen column lock handle (A) then swing table to appropriate position, re-tighten column lock handle. For long work pieces swing table 180 and use the base as your table.



To rotate table 360 loosen table lock handle (C), rotate table to desired position and retighten table lock handle (C).

To tilt table ,loose the pivot bolt ,Remove the small locator pin TO do this "tighten" the nut until the pin easily slips out .Tilt the table to the desired angle up to 45 and retighten bolt Reinsert the locator pin when returning the table to zero degree.

SPINDLE ADJUSTMENTS



To stop drill at desired depth, loosen scale set handle (E) located on feed shaft assembly, rotate spindle depth to desired depth and tighten scale set handle.

To hold a stationary depth, loosen scale set handle (E) turn feed shaft to lowest point then rotate spindle depth to desired depth and retighten scale set handle. This will hold the spindle assemble stationary at desired depth.

DRILL CHUCK AND ARBOR

Slide small end of arbor into the chuck, place long end inside spindle hold crank table 5 inches from tip of spindle, open chuck completely pull feed shaft down pressing the chuck against the table till arbor is secure.

CHANGING SPEEDS

To change spindle speed, loose the slide bar. Bolts and pull cam handle toward the front of the drill press Relocate belts on appropriate pulley rungs for the required spindle speed Push cam handle toward the motor and then tighten the slide bar bolt Check the belts for proper tension and make any final adjustment.