



## DAKE DRILL PRESS

# TB-16V

### INSTRUCTIONAL MANUAL



#### WARNING!

Read and understand all instructions and responsibilities before operating. Failure to follow safety instructions and labels could result in serious injury.



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## TABLE OF CONTENTS

DAKE STANDARD LIMITED WARRANTY .....	2
RETURN & REFUND POLICY .....	4
SPECIFICATIONS .....	5
SAFETY .....	6
SAFETY FEATURES .....	8
SET UP .....	9
UNCRATING AND INSTALLATION .....	9
GROUNDING INSTRUCTIONS .....	9
BELT INSTALLATION .....	10
OPERATION .....	10
DRILL/CHUCK INSTALLATION .....	10
INSTALLATION OF DRILL BIT .....	11
TOOLING REMOVAL .....	11
TABLE HEIGHT ADJUSTMENT .....	11
TABLE SWING ADJUSTMENT .....	12
FEED DEPTH ADJUSTMENT .....	12
WORK HOLDING .....	13
SPEED ADJUSTMENT .....	13
MAINTENANCE .....	14
TROUBLESHOOTING .....	15
ELECTRICAL DIAGRAMS .....	17
EXPLODED VIEW .....	18
PARTS LIST .....	19
ORDERING INFORMATION .....	19



## DAKE STANDARD LIMITED WARRANTY

### *Finished Machines*

Dake warrants to the original purchaser the finished machine manufactured or distributed by it to be free from defects in material and workmanship under normal use and service within 1 year (12 months) from the delivery date to the end user.

### *Parts*

Dake warrants to the original purchaser the component part manufactured or distributed by it to be free from defects in material and workmanship under normal use and service within 30 days from the delivery date to the end user.

The standard limited warranty includes the replacement of the defective component part at no cost to the end user.

### *Sale of Service (Repairs)*

Dake warrants to the original purchaser the component part repaired by Dake Corporation at the manufacturing facility to be free from defects in material and workmanship under normal use and service within 90 days from the return date to the end user, as it pertains to the repair work completed. The standard limited warranty includes repair of the defective component part, at no cost to the end user.

## Warranty Process

Subject to the conditions hereinafter set forth, the manufacturer will repair or replace any portion of the product that proves defective in materials or workmanship. The manufacturer retains the sole right and option, after inspection, to determine whether to repair or replace defective equipment, parts or components. The manufacturer will assume ownership of any defective parts replaced under this warranty.

All requested warranty claims must be communicated to the distributor or representative responsible for the sale. Once communication has been initiated, Dake Customer Service must be contacted for approval:

Phone: (800) 937-3253

Email: [customerservice@dakecorp.com](mailto:customerservice@dakecorp.com)

When contacting Dake, please have the following information readily available:

- Model #
- Serial #
- Sales Order #

Purchasers who notify Dake within the warranty period will be issued a Case number and/or a Return Material Authorization (RMA) number. If the item is to be returned per Dake's request, the RMA number must be clearly written on the exterior packaging. Any item shipped to Dake without an RMA will not be processed.

**Warranty Exceptions:**

The following conditions are not applicable to the standard limited warranty:

- (a) Part installation or machine service was not completed by a certified professional, and is not in accordance with applicable local codes, ordinances and good trade practices.
- (b) Defects or malfunctions resulting from improper installation or failure to operate or maintain the unit in accordance with the printed instructions provided.
- (c) Defects or malfunctions resulting from abuse, accident, neglect or damage outside of prepaid freight terms.
- (d) Normal maintenance service or preventative maintenance, and the parts used in connection with such service.
- (e) Units and parts which have been altered or repaired, other than by the manufacturer or as specifically authorized by the manufacturer.
- (f) Alterations made to the machine that were not previously approved by the manufacturer, or that are used for purposes other than the original design of the machine.



## **RETURN & REFUND POLICY**

Thank you for purchasing from Dake! If you are not entirely satisfied with your purchase, we are here to help.

### **Returns**

All Dake manufactured / distributed machines, parts and couplings include a 30-day return option. These policies are valid from the date of final shipment to the end user.

To be eligible for a return, the item must be unused and in the same condition as received.

All requested warranty claims must be communicated to the distributor or representative responsible for the sale. Once communication has been initiated, Dake Customer Service must be contacted for approval:

Phone: (800) 937-3253

Email: [customerservice@dakecorp.com](mailto:customerservice@dakecorp.com)

Once the return request has been approved by Customer Service, a representative will supply a Return Material Authorization (RMA) number. The returned item must have the provided RMA number clearly marked on the outside packaging. Any item received without an RMA number clearly visible on the packaging will not be processed.

An RMA number can only be provided by the Dake Customer Service team and must be obtained prior to the return shipment.

### **Refunds**

Once the item has been received and inspected for damages, a representative will notify the requestor referencing the provided RMA number.

If the return is approved, a refund will be issued to the original method of payment, less a 20% restocking fee. The restocking fee may be waived if an order is placed at the time of return with like-value merchandise.

Transportation costs are the responsibility of the end user and will not be credited upon return approval.

Any item that is returned after the initial 30 days or has excessive/obvious use will not be considered for a full refund.



## SPECIFICATIONS


<b>Model</b>	TB-16V
<b>Number</b>	977102-1
<b>Voltage</b>	110V Single Phase
<b>Horsepower</b>	1/2 HP
<b>Drill Type</b>	Bench
<b>Max. Drill Capacity</b>	5/8"
<b>Spindle Taper</b>	MT2
<b>Spindle Travel</b>	3-1/8"
<b>Max. Work Diameter</b>	14-1/8"

<b>Speeds</b>	Mechanical Variator
<b>Spindle Speed Range</b>	545-4,000 RPM
<b>Column Diameter</b>	3-1/8"
<b>Table</b>	11-3/4" x 11-3/4"
<b>Base</b>	17-3/4" x 12-1/4"
<b>Spindle to Table</b>	16-1/2"
<b>Spindle to Base</b>	26-1/2"
<b>Overall Height</b>	42-1/2"
<b>Weight</b>	175 lbs.

In the space provided record the serial number and model number of the machine. If contacting Dake this information must be provided to assist in identifying the specific machine.

<b>Serial No.</b>	
<b>Model No.</b>	
<b>Date Purchased:</b>	

## SAFETY

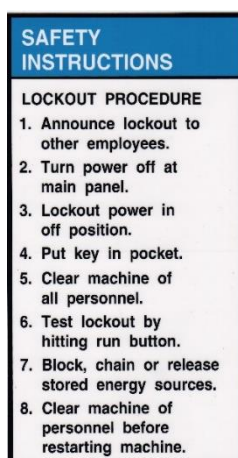
 **This is the safety alert symbol.** When you see this symbol on your machine be alert to the potential for personal injury.

**Carefully read all safety messages in these instructions and on your machine safety signs.** Keep safety labels in good condition. Replace missing or damaged labels.

Employer is responsible to perform a hazard/PPE assessment before work activity.



Label Part No.  
84395



Label Part No.  
76462



Label Part No.  
300168



Label Part No.  
82199



**WARNING:** This product contains Nickel, a chemical known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### Additional Safety Warnings:

- Keep guards in place and in working order.
- Remove adjusting key and wrenches, be in the habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.
- Keep work area clean. Cluttered areas and benches invite accidents.
- Do not use in dangerous environments. Do not use in damp or wet locations or expose them to rain.
- Do not force tool. Machine will do a better and safer job at the rate for which it was designed.
- Use the right tool. Do not force the tool or use the machine to do a job for which it was not designed.



- Use recommended speed for drill accessories and workpiece material.
- Do not wear gloves, neckties, necklaces, rings, or loose clothing. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- Always use safety glasses. Also use face or dust mask if cutting operation is dusty.
- Secure work. Use clamps or vise to hold work. Do not hold parts with hands.
- Do not overreach. Keep proper footing and balance at all times.
- Maintain tools with care. Keep tools sharp and clean for best and safest performance.
- Disconnect drill press from power before servicing or changing accessories such as bits, cutters, etc.
- Never stand on machine for risk of serious injury.
- Never leave tool running unattended. Turn power off. Do not leave machine until it comes to a complete stop.
- Be sure drill bit or cutting tool is securely in the chuck.
- Never place your fingers in a position where they could contact the drill or cutting tool of the work piece should unexpectedly shift.
- Never perform any operation by moving the head or table with respect to one another.
- Do not switch machine on or start any operation before checking that the head and table lock handles are clamped tight to column, and the head and table support collars are correctly positioned.
- Operation of the drill press incorrectly, or on a dangerous fashion can result in serious injury or death, damage to the machine, it's components, or cutting tool.
- The drill press is designed for drilling and boring operations. Cautions is required when operating the drill press because it can be dangerous due to the high spindle rotation speed.
- Guards such as pulley cover and chuck guard must be in place and in working condition to prevent hazard.
- Switch the power off before setting, inspecting, lubricating, cleaning, or changing the drill bit.
- To clamp work piece to brace against column to prevent material rotation.
- Using recommended speed for drill bit, and work piece material.
- All visitors should be kept a safe distance from work area.
- Make workshop kid proof with padlocks, master switches, or by removing the starter key.
- Reduce the risk of accidental starting. Make sure switch is in off position before plugging in.
- Use recommended accessories. The use of improper accessories may cause risk of injury.



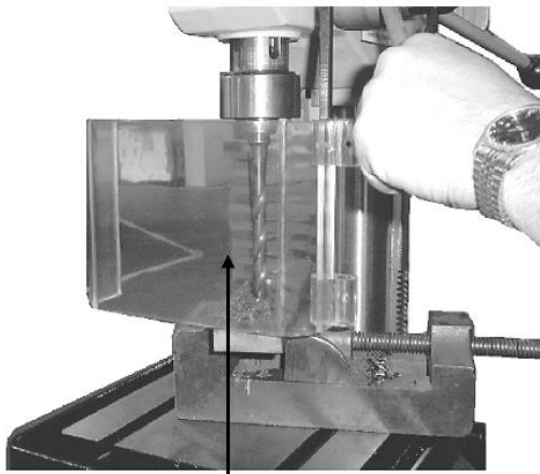
- Adjust the table or depth stop to avoiding drilling into the table, shut off the power. Remove the drill bit or cutting tool, and clean the table before leaving the machine.
- Do not operate until completely assembled and installed according to the instructions.
- If any part of your drill press is malfunctioning, has been damaged, or broken do not operate until the part is properly repaired or replaced.
- Lockout the motor switch when leaving the drill press. Don't perform layout, assembly, or setup work on the table while the cutting tools rotating.


### Voltage Warning:

- Before connecting the machine to a power source know your incoming voltage.
- At power source with voltage greater than that specified for the machine can result in serious injury to the user and can damage the machine.
- Using a power source with voltage less than that of the machines rating can damage the motor and other components.
- If you are unsure of the voltage rating do not use the machine.

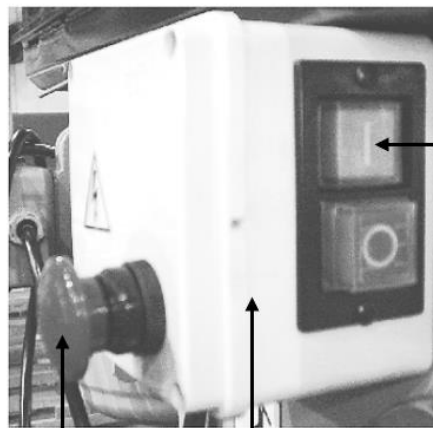
### SAFETY FEATURES

CHUCK/CHIP GUARD



 For operation safety, always use proper positioned chuck guard

CE CERTIFIED ELECTRONICS



Membrane covered ON/OFF push buttons

Emergency stop button

Low voltage, thermo protection

\*Belt interlock not shown



## SET UP

### UNCRATING AND INSTALLATION

1. Location of the drill press should be in a well-lit area with correct power supply and that will not interfere with other machines or operations.
2. Carefully uncrate machine and inspect all packing to make sure no parts are manuals are thrown out.
3. When transporting the machine please use caution. If using a sling have someone steady the machine while moving.
4. Install your drill press on a sturdy level workbench. It must be anchored to workbench; **the machine is top heavy.**
5. Connect appropriate power to the machine. Make sure circuit breakers are suitable for the machine. Consult local codes for proper installation of machine. Always route power cables in a safe manner away from traffic areas, damp areas, heat, and moving parts.
6. After installing the drill press, use degreasing product to clean off the anti-rust oil which was applied at the factory. Then wipe machined surfaces with a light coating of lubricant oil (way oil).
7. Check for damaged parts before further use of the machine. A guard or other part that is damaged should be replaced or repaired before use. Carefully check to determine that it will operate properly and perform its intended function. Check for alignment of moving parts and binding of moving parts. Breakage of parts or mountings and or any other conditions that could be affect its operation.


### GROUNDING INSTRUCTIONS

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electrical shock. This machine is equipped with an electric cord must be used with 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 qualified electrician.
- Improper connection of the equipment grounding can result in a risk of electrical shock. The conductor with insulation having an outer surface that is green with yellow stripes is 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 serviceman if the grounding instructions are not completely understood, or if in doubt as whether the machine is properly grounded.
- It is not recommended to use an extension cord on the machine. If one must be used, use only a grounded cord on the machine and length of run needed.
- Repaired or replace damaged or worn cords immediately.



## BELT INSTALLATION

 **WARNING:** Do not change the distance between the spindle pulley and motor pulley. And lockout the machine before changing the belt.

1. Turn the variable speed handwheel clockwise direction to open the groove of the spindle pulley.
2. Put the belt on the pulley from spindle pulley to motor pulley.
3. Turn the motor pulley handle to tension the belt.
4. Close pulley cover before proceeding to operate machine.

## OPERATION

### DRILL/CHUCK INSTALLATION

1. Before inserting drill bits, chucks, or arbors always clean out the spindle hole and taper hole with a clean cloth.
2. Open chuck jaws completely by turning attached chuck key counter-clockwise until the jaws are fully opened.
3. To install the chuck to the arbor tightly, slide the chuck into the taper forcing it into the spindle with by handle.
4. Place a block of wood on the table then lower the spindle to contact the wood and press the chuck tightly into the spindle taper.
5. Install a taper shaft drill into the taper the same way as you would the chuck. If an adaptor is used it must fit the taper correctly and the bit must fit snug in the adaptor.

## INSTALLATION OF DRILL BIT

A drill bit with a shaft of at least 1" long should be used to allow correct chuck jaw contact. If the shaft is under 1" do not insert bit as far into the chuck where it allows jaw contact with the drill flutes.

Center drill bit into the chuck and tighten the chuck securely with the chuck key.

Note: Always use sharp, straight bits. Never use bits with turned down shafts. Never exceed the maximum shaft diameter bit size for the machine.



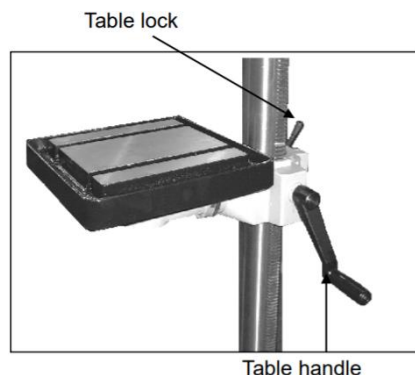
## TOOLING REMOVAL

1. Before removing the chuck or bit from the machine be sure the spindle has come to complete stop and power is off.
2. If needed rotate spindle by hand to align the spindle and quill openings.
3. Insert the wedge removal tool while supporting the tooling tap the wedge to remove the tooling.

## TABLE HEIGHT ADJUSTMENT

1. Loosen the clamp bolt then adjusting the table with the bracket handle to desired work height.
2. Retighten the clamp securely when table is adjusted to desired height.

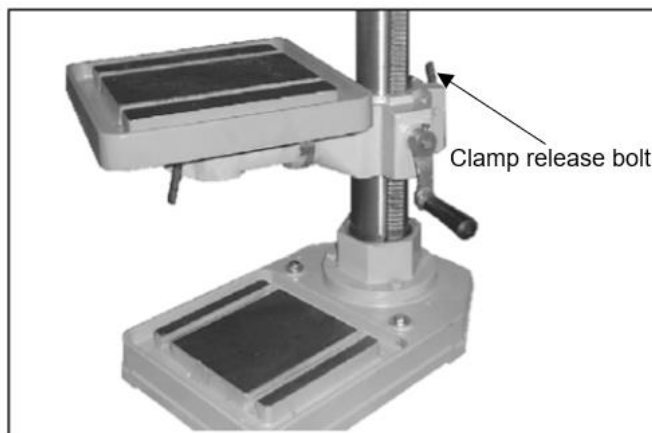
Note: Keep table adjustment rack clean from debris. Never attempt to move table with clamp bolt tightened.



## TABLE SWING ADJUSTMENT

1. To swing the table up to 360°, loosen the clamp release bolt and swing the table to the desired position.
2. After table is in the correct position, tighten clamp release bolt securely.

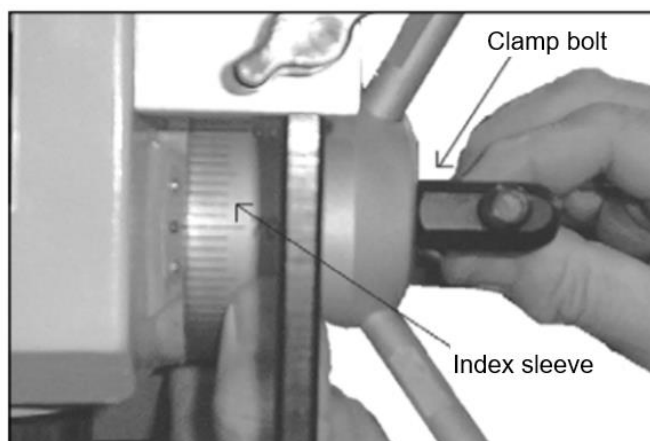
Note: Never swing the table if any material or fixturing is on it. Only adjust when table is free of loose articles.



## FEED DEPTH ADJUSTMENT

1. Setting the feed depth adjustment is done by loosening the clamp bolt on the spindle depth index sleeve.
2. Rotate to desired length, and securely tighten the clamp bolt.

Note: Never make this adjustment while machine is running.



## WORK HOLDING

When drilling directly on the table surface it is recommended that a piece of wood or plywood be clamped securely to the table under the work piece. This will minimize splintering or burring as the drill breaks through the work. It will minimize drill bit and table damage. Clamp work piece to the table whenever possible. The table has “T-slots” that allow for many different clamping configurations. When part cannot be affixed to the table a drill vise that is bolted to the table must be used to hold the work piece safely.

## SPEED ADJUSTMENT

**⚠ WARNING: Never turn the variable speed handwheel when machine is in a stopped position.**

The power of spindle revolution comes from spindle pulley and motor pulley driving.

The design of the spindle and motor pulley are stepless variable speed drive, therefore for speed change only turn the variable speed handwheel, no need to stop machine to change the belt on the pulleys.


1. Turn the variable speed hand wheel to change speed.
  - a. Clockwise to increase the speed.
  - b. Counter-clockwise to decrease speed.

### Proper drill speed for a given drill bit size:

	Material Type				
	Cast Steel	Tool Steel	Cast Iron	Mild Steel	Alum. & Copper
Drill Dia.	RPM				
1/16"	2,445	3,665	4,890	6,110	12,225
1/8"	1,220	1,831	2,445	3,055	6,110
3/16"	815	1,220	1,630	2,035	4,075
1/4"	610	915	1,220	1,530	3,055
5/16"	490	735	980	1,220	2,445
3/8"	405	610	815	1,020	2,035
7/16"	350	525	700	870	1,745
1/2"	305	460	610	765	1,530
5/8"	245	365	490	610	1,220
3/4"	205	305	405	510	1,020
7/8"	174	261	348	435	762
1"	153	229	306	382	668
1-1/8"	136	204	272	340	595
1-1/4"	122	167	244	306	535



## MAINTENANCE

 **Before performing any maintenance ensure that the machine is LOCKED OUT and unplugged.**

Special maintenance operations must be carried out by skilled personnel. However, we advise contacting DAKE. The term special maintenance also covers resetting of protection/safety equipment and devices.

- On a regular basis, blow out any dust that may accumulate inside the motor (frequency depends on environment the machine is in).
- A coat of automotive wax needs to be applied to the table and column to help keep the surface clean.
- If the power cord is worn, cut, or damaged in any way have it replaced immediately.
- All ball bearings are packed with grease at the factory and require no further lubrication.
- Periodically lubricate the gear and rack table elevation mechanism, the spindle splines and rack (teeth on quill).
- After each use the machine should be cleaned.
- Weekly lubrication of all sliding or moving parts with light weight or way oil is recommended.



## TROUBLESHOOTING

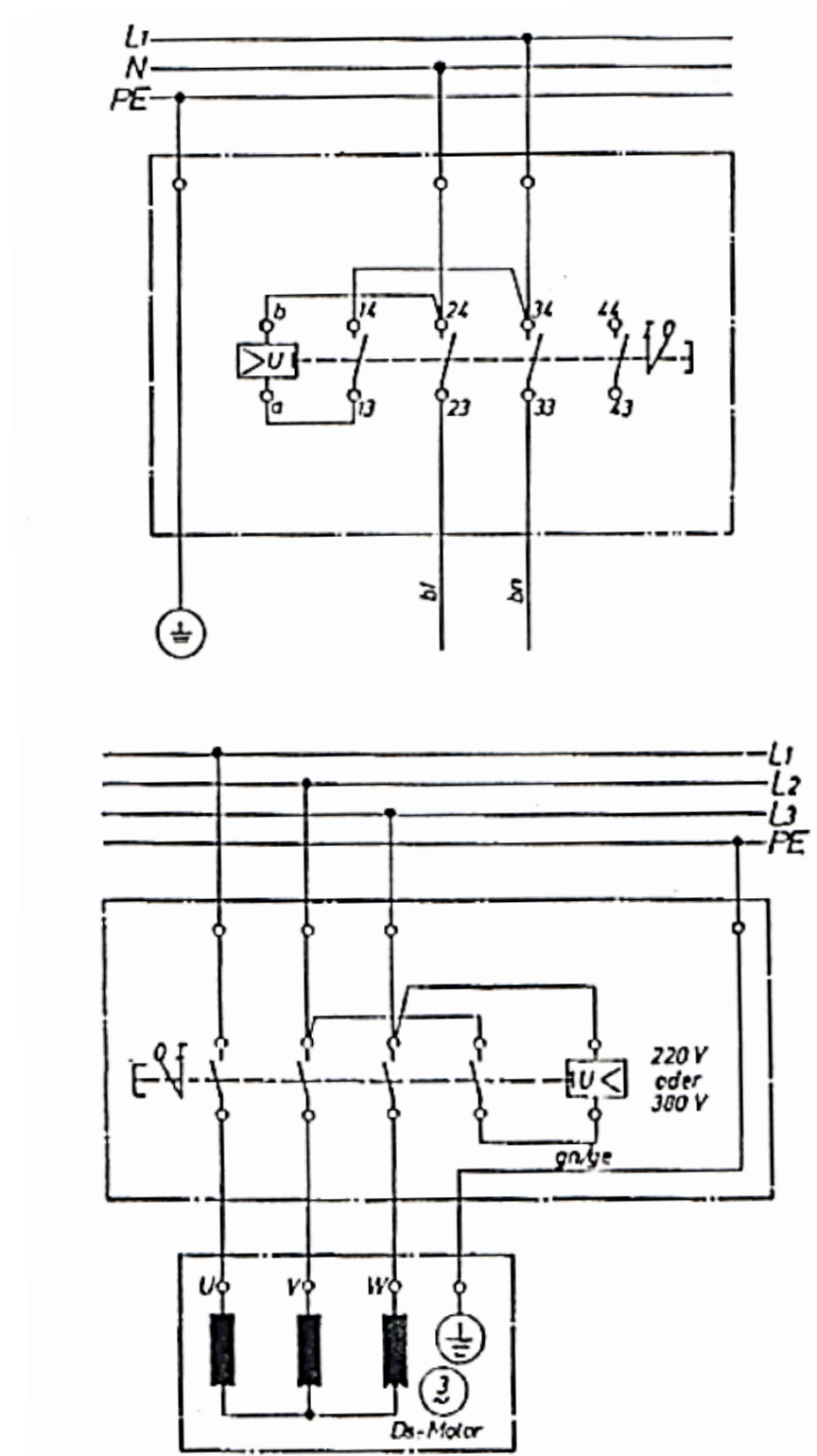
SYMPTOM	CAUSE	SOLUTION
Machine does not turn on	Machine not plugged in	Plug in to proper receptacle
	Too long or not correct extension cord	Remove extension cord and plug directly in to receptacle
	Emergency stop button is activated	Deactivate emergency button
	Pulley cover is open	Close pulley cover
Bit burns or smokes	Incorrect speed	Change speed, see chart in manual
	Chips are not coming out of hole	Retract bit frequently to clear chips
	Dull bit	Sharpen or replace bit
	Down feed is too slow	Feed bit fast enough, allow drill press to cut
	Not lubricated	Lubricate bit
	Bit is running backwards	Check motor rotation
Excessive drill runout or wobble	Bent bit	Replace bit
	Worn spindle bearing	Replace bearing
	Bit not properly installed in chuck	Remove and replace correctly
	Chuck not properly installed	Remove and replace correctly
Drill binds in workpiece	Workpiece pinching	Support or clamp workpiece
	Improper belt tension, belt may be stretched or damaged	Check belt for damage and replace if needed
Workpiece torn	Not supported or clamped properly	Support or clamp workpiece
Noisy Operation	Improper belt tension, belt may be stretched or damaged	Check belt for damage and replace if needed
	Dry spindle	Lubricate spindle
	Spindle bearing worn	Replace bearing



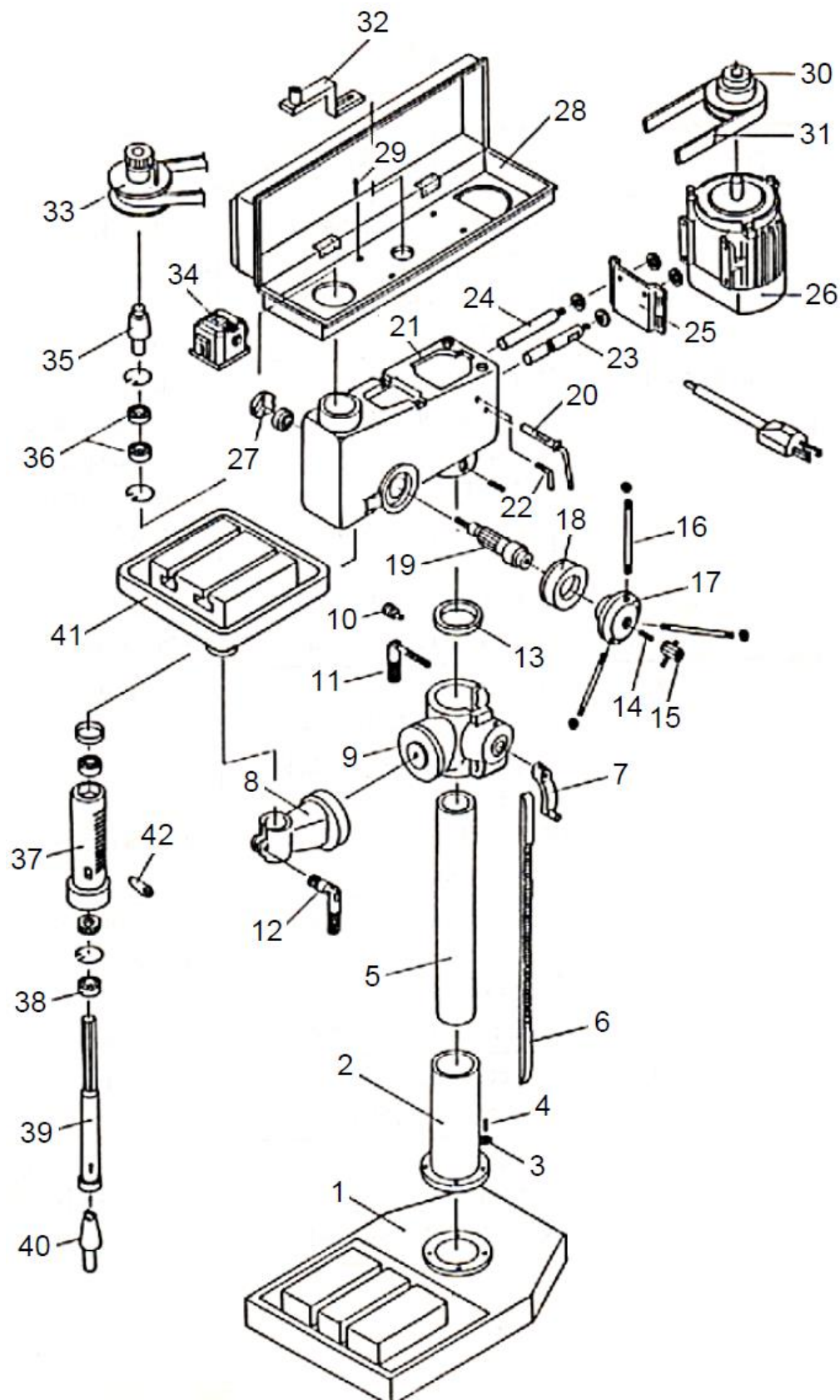


SYMPTOM	CAUSE	SOLUTION
Chuck or quills fall out	Rust inhibitor, dirt, debris in or on quill or spindle taper	Clean chuck and quill
Table difficult to raise	Needs lubrication	Lubricate with light oil
	Table lock tightened	Loosen clamp
	Bent rack	Straighten rack
Spindle does not move up or down	Belt is broken or slipping	Check belt for damage and replace if needed
	Debris in quill	Clean quill and teeth
	Feed depth adjustment is set	See "Feed Depth Adjustment" in this manual
Spindle does not rotate	Belt tension is too loose	Check belt for damage and replace if needed
	Belt is broken or worn	Replace belt
	Taper is slipping in spindle	Clean chuck and quill
	Motor is not rotating	Troubleshoot motor or contact DAKE

## ELECTRICAL DIAGRAMS



## EXPLODED VIEW





## PARTS LIST

Item No.	Part Description
1	Base
2	Flange
3	Washer
4	Screw
5	Column
6	Rack
7	Handle
8	Table Arm
9	Table Bracket
10	Worm
11	Clamp Bolt
12	Clamp Bolt
13	Collar
14	Screw
15	Clamp Bolt
16	Handle
17	Feed Head
18	Scale Sleeve
19	Feed Shaft
20	Belt Adjust Handle
21	Head

Item No.	Part Description
22	Wing Bolt
23	Rod – A
24	Rod – B
25	Motor Plate
26	Motor
27	Spring & Cup
28	Pulley Cover
29	Screw
30	Motor Pulley
31	Belt
32	Rod Support
33	Spindle Pulley
34	Switch
35	Insert Pulley
36	Bearing
37	Quill
38	Bearing
39	Spindle
40	Arbor
41	Table
42	Wedge

***Please contact factory for current prices.***

## ORDERING INFORMATION

Parts are available for direct purchase from Dake or through a distributor. When placing a parts order, you will need to provide the part number, name of part, and model number. All parts shipped F.O.B. Factory in Grand Haven, MI