34”

RADIAL ARM BENCH AND FLOOR DRILL PRESSES

(OPERATION MANUAL)

Read carefully and follow all safety rules and operating instructions before first use of this product

DESCRIPTION

Radial Arm Drill Presses feature a heavy cast iron base, a working table and head. Head moves 12½" forward and backward using a rack and pinion. Head also swivels 360° around column, tilts 90° left and 45° right. The worktable height can be also adjustable by using rack and pinion. The table can be tilted 45° both right and left, and rotates 360° on a vertical axis. The work table surface is precision ground which features slots for secure, accur ate mounting of work- piece. Other features of the drill press are an enclosed ball bearing quill assembly, quick belt change and tension mecha-nism, positive quick-adjust feed depth stop and a ⅓ HP, 1725 RPM motor. Chuck and chuck arbor are included.

The drill presses are ideal for use in home shops, mainte- nance shops and light industrial applications. Spindle speeds are adjustable for drilling steel, cast iron, aluminum, wood and plastic.

UNPACKING

Check for loose, missing or damaged parts. If any damage or loss has occurred, claim must be filed with carrier immediately. Check for completeness. Immediately report missing parts to dealer.

Drill press is shipped unassembled. Locate and identify the following assemblies and loose parts (Refer to Figures 1 and 2):

MODELZQJ3116 BENCH DRILL PRESS

A Head Assembly
B Column Assembly with Rack and Retaining Ring
C Base
D Table and Bracket Assembly with Worm Gear
E Quill Feed Handle (3)
F Bracket Locking Handle
G Table Crank Handle
H Shoe
I Drill Chuck with Key

Not Shown: M8 x 20 Hex head bolts (4), M8 x 100 Hex head bolts (4), M8 Flat washers (4), M8 Hex nuts (4), and 3mm and 4mm hex wrenches.

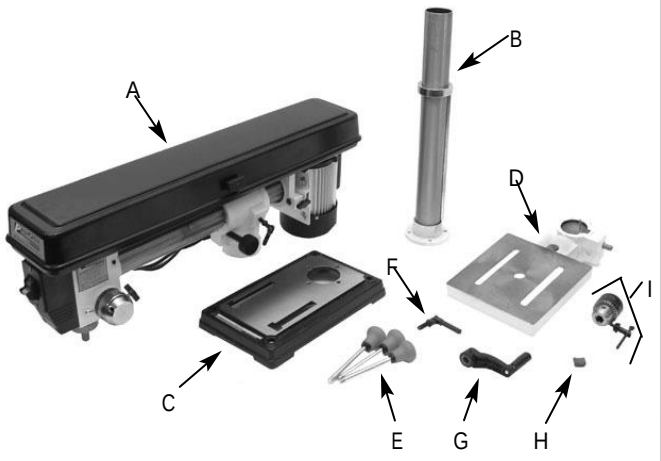

Figure 1 – ModelZQJ3116 Unpacking

MODEL ZQJ3116A FLOOR DRILL PRESS

A Head Assembly
B Column Assembly with Rack and Retaining Ring
C Base
D Table Arm and Bracket Assembly with Worm Gear
E Extension Arm
F Table
G Drill Chuck with Key
H Table Crank Handle
I Bracket Locking Handle
J Table Locking Handle
(2) K Quill Feed Handle
(3)

Not Shown: M10 x 40 Hex head bolts (4), M8 x 100 Hex head bolts (4), M8 Flat Washers (4), M8 He nuts (4), and 3mm and 4mm hex wrenches.

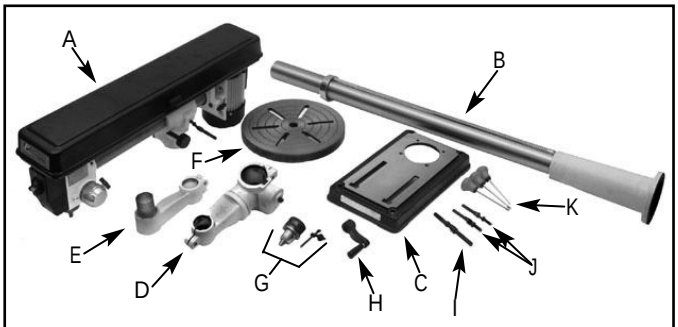

Figure 2 – Model ZQJ3116A Unpacking

IMPORTANT: The tool has been coated with a protective coating. In order to ensure proper fit and operation the coating must be removed. Remove coating with mild solvents such as mineral spirits and a soft cloth. Nonflammable solvents are recommended.
After cleaning, cover all exposed surfaces with a light coating of oil. Paste wax is recommended for table to place.

CAUTION: Never use highly volatile solvents. Avoid getting cleaning solution on paint as it may tend to deteriorate these finishes.
Use soap and water on painted components.

SPECIFICATIONS
MODEL ZQJ3116

Chuck size	3-16mm, B16
Spindle taper	MT2 ORB16
Spindle travel	3.15"
Quill diameter	1.57"
Quill collar diameter	2.05"
Column diameter	2.36"
Speeds	5
RPM	500-2450(50Hz)/600-2920(60Hz)
Swing	9-34"
Head tilt	90°L, 45°R
Table size	9⅛ x 8⅝"
Table slot	9/16"
Base size	13½ x 8¼"
Base working surface	7 x 6"
Drilling capacity (cast iron)	½"
Distance, spindle to table	3¾-13¼"
Distance, spindle to base	18"
Overall height	32"
Weight	90 lbs
Motor	see name plate

MODEL ZQJ3116A

Chuck size	3-16mm, B16
Spindle taper	MT2 or B16
Spindle travel	3.15"
Quill diameter	1.57"
Quill collar diameter	2.05"
Column diameter	2.76"
Speeds	5

UNPACKING (CONTINUED)

RPM .....500-2450(50Hz)/600-2920(60Hz)
Swing ..... 9-34"
Head tilt ..... 90°L, 45°R
Table size ..... 12" Dia.
Table slot ..... 9/16"
Base size ..... 16¼ x 9½"
Base working surface ..... 8 x 7"
Drilling capacity (cast iron) ..... ½"
Distance, spindle to table ..... 4-32¼"
Distance, spindle to base ..... 50"
Overall height ..... 65"
Weight ..... 145 lbs
Motor .....see name plate

SAFETY RULES

Before any work is done, carefully read the cautions listed. Working safely prevents accidents.

BE PREPARED FOR JOB

- Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry which may get caught in moving parts of machine.
- Wear protective hair covering to contain long hair.
- Wear safety shoes with non-slip soles.
- Wear safety glasses which comply with United States ANSI Z87.1. Everyday glasses have only impact resistant lenses. They are NOT safety glasses.
- Wear face mask or dust mask if cutting operation is dusty.
- Be alert and think clearly. Never operate power tools when tired, intoxicated or when taking medications that cause drowsiness.

WORK AREA SHOULD BE READY FOR JOB

- Keep work area clean. Cluttered work areas and work benches invite accidents.
- Do not use power tools in dangerous environments. Do not use power tools in damp or wet locations. Do not expose power tools to rain.
- Work area should be properly lighted.
- Proper electrical outlet should be available for tool. Three-prong plug should be plugged directly into properly grounded, three-prong receptacle.
- Extension cords should have a grounding prong, and the three wires of the extension cord should be of the correct gauge.
- Keep visitors at a safe distance from work area.
- Keep children out of workplace. Make workshop childproof. Use padlocks, master switches or remove switch keys to prevent any unintentional use of power tools

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TOOL SHOULD BE MAINTAINED

- Always unplug tool prior to inspection.
- Read operating instructions manual for specific maintaining and adjusting procedures.
- Keep tool lubricated.
- Use sharp cutters and keep the tool clean for safest operation.
- Remove adjusting tools. Form the habit of checking that adjusting tools are removed before turning on the machine.
- Keep all parts in working order. Check to determine that the guard or other parts will operate properly and perform their intended function.
- Check for damaged parts. Check for alignment of moving parts, binding, breakage, mounting and any other condition that may affect a tool's operation.
- Damaged parts should be properly repaired or replaced. Do not perform makeshift repairs. (Use the parts list provided to order replacement parts.)

KNOW HOW TO USE TOOL

- Use the right tool for the job. Do not force tool or attachment to do a job for which it was not designed.
- Disconnect tool when changing accessories such as bits, cutters and the like.
- Avoid accidental start-up. Make sure switch is in OFF position before plugging in.
- Do not force tool. It will work most efficiently at the rate for which it was designed.
- Handle workpiece correctly. Secure work with clamps or vise. Leave hands free to operate machine to protect hands from possible injury.
- Never leave a tool running unattended. Turn the power off and do not leave tool until it comes to a complete stop.
- Do not overreach. Keep proper footing and balance.
- Never stand on tool. Serious injury could occur if tool is tipped or if cutter is unintentionally contacted.
- Keep hands away from moving parts and cutting surfaces.
- Know your tool. Learn its operation, application and specific limitations.
- Feed work into a bit or cutter against the direction of rotation of bit or cutter.
- Turn the machine off if it jams. A cutter jams when it digs too deeply into the workpiece. (The motor force keeps it stuck in workpiece.)
- Use recommended accessories. Refer to page 13. Use of improper accessories may cause risk of injury to persons.
- Clamp workpiece or brace against column to prevent rotation.
- Use recommended speed for drill accessory and workpiece material.

WARNING: Think Safety! Safety is a combination of operator common sense and alertness at all times when drill press is being used.

ASSEMBLY

Refer to Figures 3 - 15.

MOUNT COLUMN ASSEMBLY TO BASE

Refer to Figure 3, page 4.

- Place base on flat level surface.
- Mount column assembly to base using four hex head bolts.

ASSEMBLY (CONTINUED)

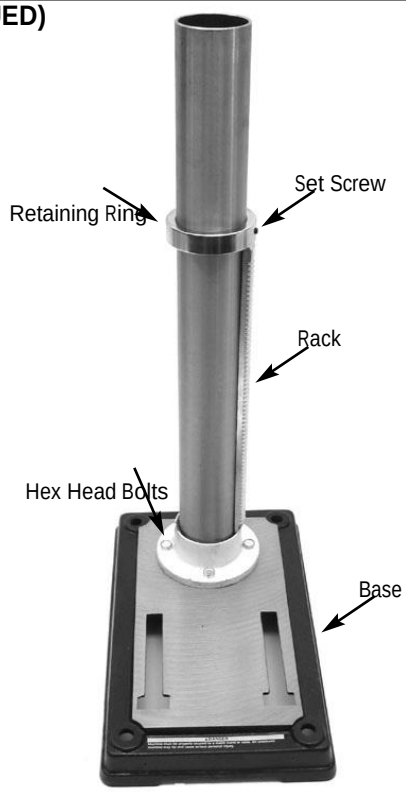

Figure 3 – Mount Column Assembly to Base

MOUNT TABLE

MODELZQJ3116

Refer to Figures 3, 4 and 5.

- Remove retaining ring by loosening set screw and also remove rack.
- Make sure worm gear is in the table bracket and engages pinion teeth.
- Place rack inside table bracket. Slide rack into the slot in the bracket so that rack teeth engage the pinion gear in the bracket.
- Slide table bracket assembly with rack over column. Place bottom end of rack inside beveled edge of column flange. See Figure 4.

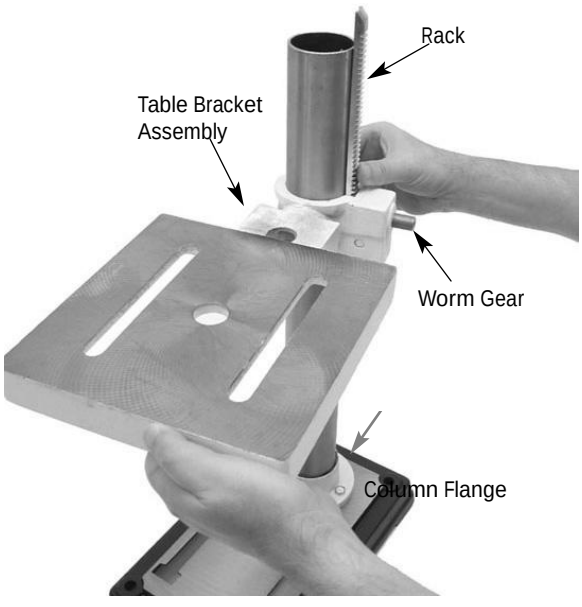

Figure 4 – Position Table Bracket Assembly on Column

- Slide retaining ring over column with beveled edge down. Position ring against top of rack so that rack is in beveled edge of ring. Secure ring with set screw.
- Rotate table assembly around column. Adjust ring as necessary to prevent binding of rack.
- Attach crank handle onto worm gear shaft. Secure handle with set screw, tighten screw on flat of worm gear shaft.
- Insert table bracket locking handle into bracket and tighten to secure bracket.

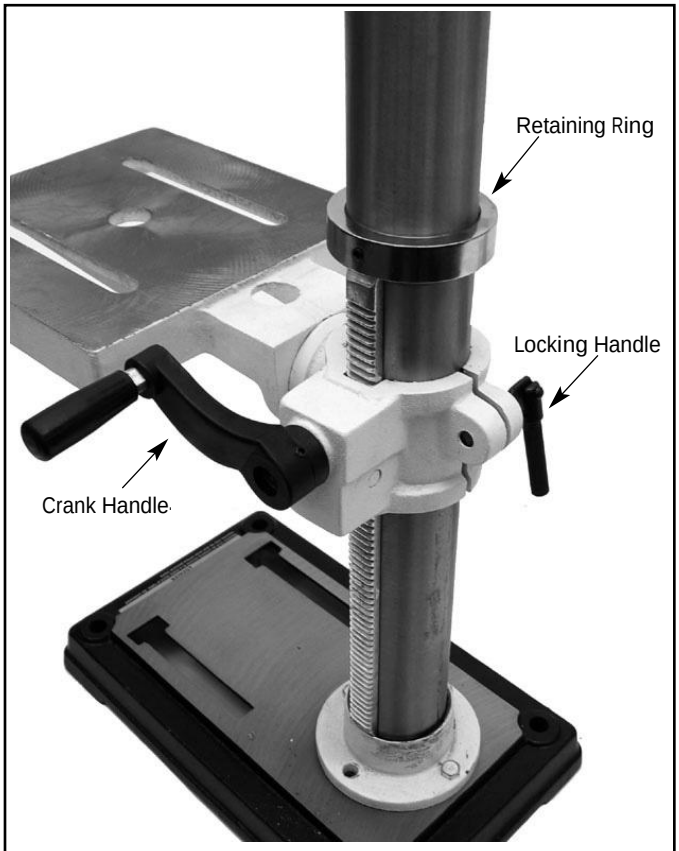

Figure 5 – Attach Retaining Ring, Crank Handle and Locking Handle

MODELZQJ3116A

Refer to Figure 3, 6, 7 and 8.

- Remove retaining ring by loosening set screw and also remove rack.
- Make sure worm gear is in the table bracket and engages pinion teeth.
- Place rack inside table bracket with large, unmachined portion of rack to the top. Slide rack onto the slot in the bracket so that rack teeth engage the pinion gear in the bracket.
- Slide table bracket assembly with rack over column. Place bottom end of rack inside beveled edge of column flange. See Figure 6, page 5.

ASSEMBLY (CONTINUED)

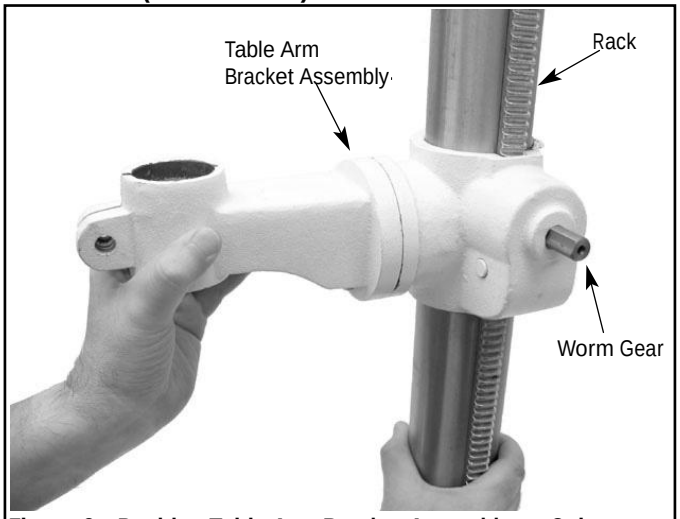

Figure 6 – Position Table Arm Bracket Assembly on Column

- Slide retaining ring over column with beveled edge down. Position ring against top of rack so that rack is in beveled edge of ring. Secure ring with set screw.
- Rotate table assembly around column. Adjust ring as necessary to prevent binding of rack.
- Attach crank handle onto worm gear shaft. Secure handle with set screw, tighten screw on flat of worm gear shaft.
- Insert table bracket locking handle into bracket and tighten to secure bracket.

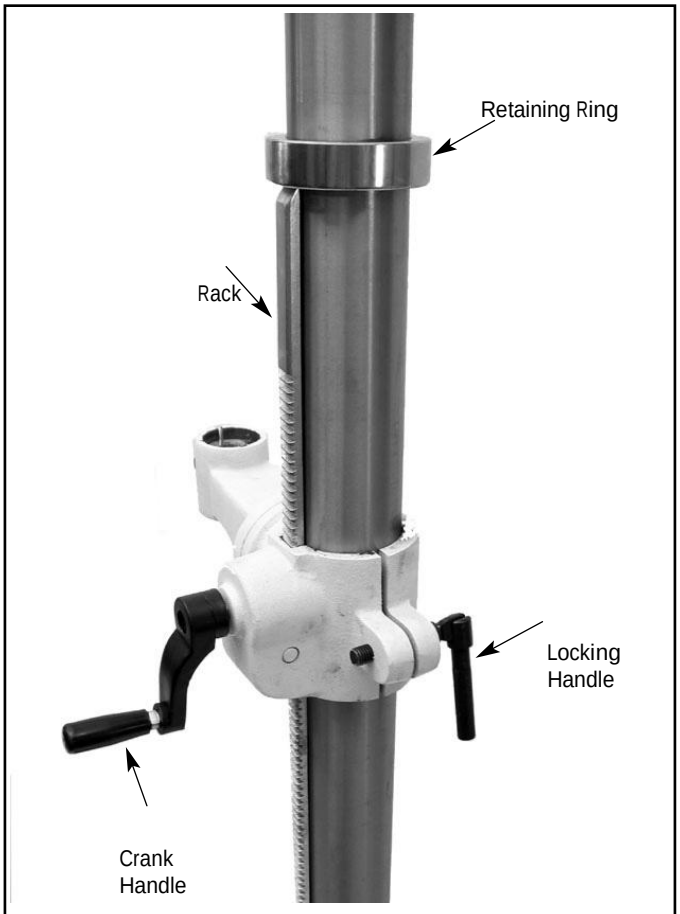

Figure 7 – Attach Retaining Ring, Crank Handle and Locking Handle

- Insert the extension arm into the table arm bracket assembly. **NOTE:** The table can be installed directly to the table arm bracket assembly.
- Insert the table into the extension arm.
- Insert locking handles into the table arm bracket assembly and extension arm. Tighten to secure table and extension arm.

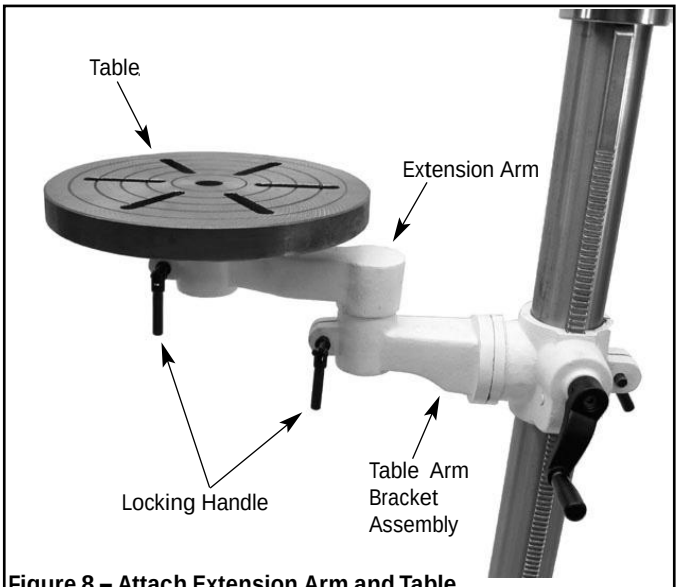

Figure 8 – Attach Extension Arm and Table

MOUNT HEAD ASSEMBLY

Refer to Figures 9 and 10.

WARNING: Although compact, the drill press head assembly is heavy. Two people are required to mount the drill press head assembly onto the column.

- Place locking shoe into the cavity in the ram bracket.

WARNING: Do not install the head assembly onto column unless the locking shoe is in place. The head assembly cannot be properly secured to the column without locking shoe.

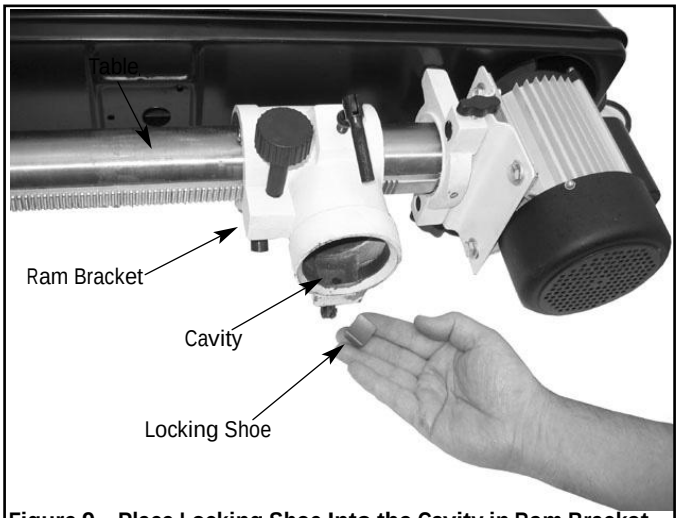

Figure 9 – Place Locking Shoe Into the Cavity in Ram Bracket

- Slide drill press head assembly onto top of column.
- Position head so that it is centered over base.
- Secure head assembly into position by tightening the locking handles (see Figure 10, page 6).

ASSEMBLY (CONTINUED)

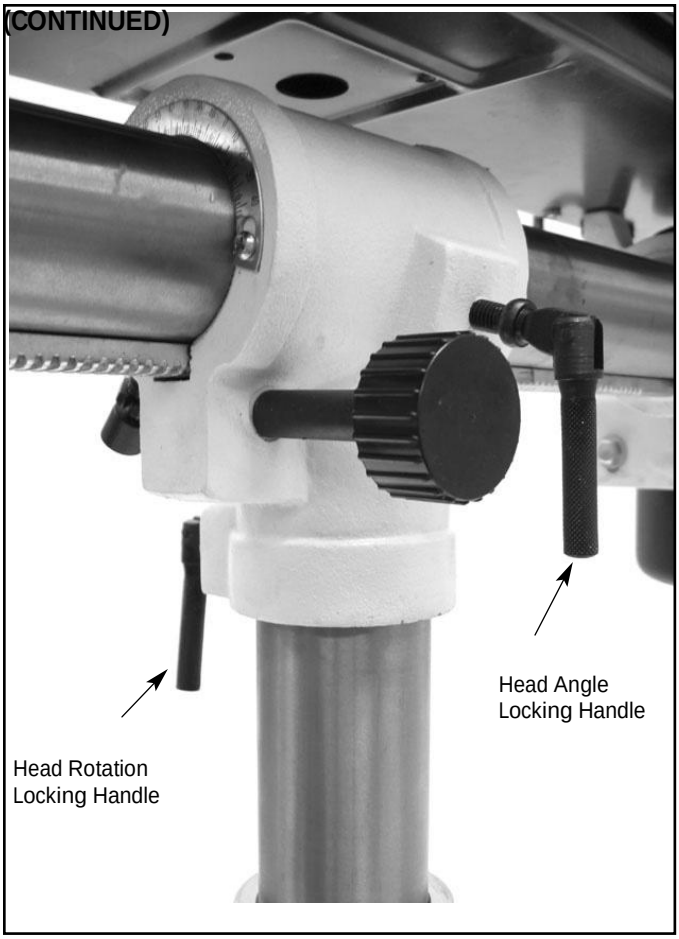

Figure 10 - Secure Head Assembly

MOUNT DRILL CHUCK

Refer to Figures 11 and 12.

- Be sure spindle taper and chuck taper are clean and dry.
- Insert chuck key into chuck and turn key counterclockwise until the chuck jaws are completely inside chuck.

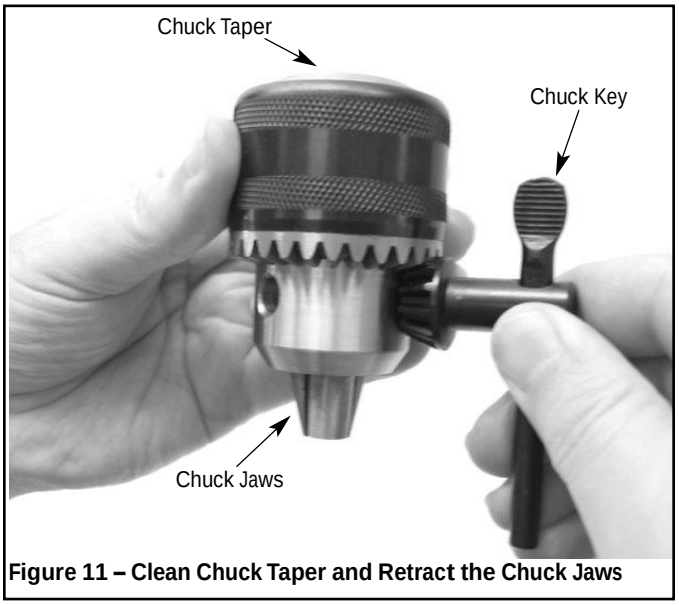

Figure 11 – Clean Chuck Taper and Retract the Chuck Jaws

- Push chuck over spindle taper and twist chuck slightly to release air trapped in taper.
- Use a hammer to carefully tap chuck securely onto the spindle.

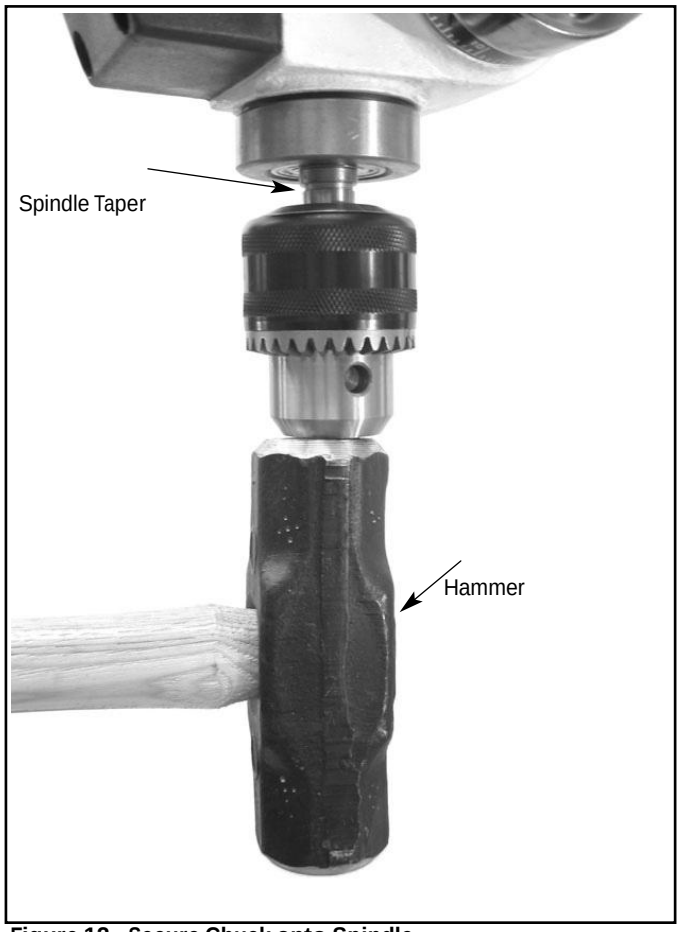

Figure 12 - Secure Chuck onto Spindle

MOUNT QUILL FEED HANDLES

Refer to Figure 13.

- Thread the three quill feed handles into the threaded holes on the pinion hub.

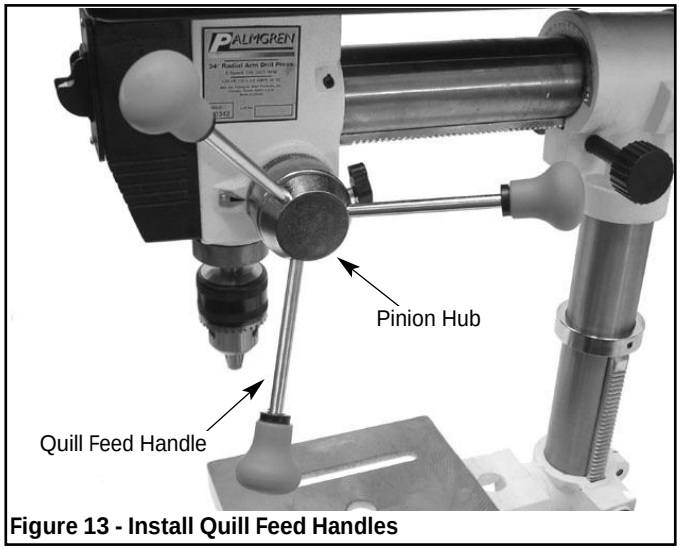

Figure 13 - Install Quill Feed Handles

ADJUST V-BELT TENSION

Refer to Figure 14, page 7.

- Open the pulley cover and loosen both motor lock knobs (one on each side of the head).
- Push motor back to apply tension to v-belt.
- Correct tension is obtained when the v-belt can be flexed approximately ⅜" at belt midpoint using finger pressure.

ASSEMBLY (CONTINUED)

- When correct tension is obtained, secure motor in position by tightening motor lock knobs.

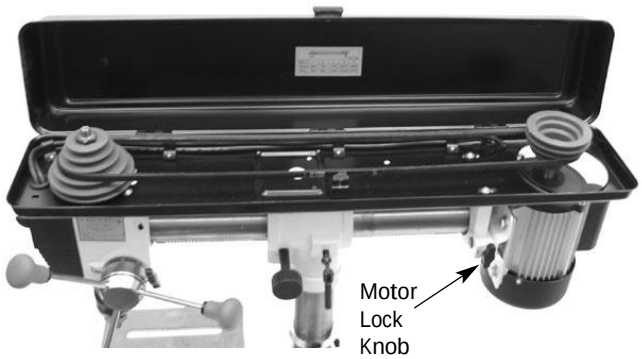

Figure 14 - Adjust V-belt Tension

INSTALLATION

MOUNT DRILL PRESS

Refer to Figure 15.

WARNING: The drill press must be mounted securely to a stand, bench or floor to prevent tipping of the machine which could cause severe personal injury.

- Drill press must be mounted to flat level surface. Use shims or machine mounts if necessary.
- Be sure to bolt drill press to floor or bench securely to prevent tipping and minimize vibration.
- Tighten all nuts and bolts that may have loosened during shipment.

Figure 15 - Secure Drill Press to Bench or Stand

POWER SOURCE

The motor is designed for operation on the voltage an frequency specified. Normal loads will be handled safely on voltages not more than 10% above or below the specified voltage.

Running the unit on voltages which are not with in the range may cause overheating and motor burn out. Heavy loads require that the voltage at motor terminals be no less than the voltage specified.

GROUNDING INSTRUCTIONS

WARNING: Improper connection of equipment grounding conductor can result in the risk of electrical shock. Equipment should be grounded while in use to protect operator from electrical shock.

Check with a qualified electrician if grounding instructions are not understood or if in doubt as to whether the tool is properly grounded.

This tool is equipped with an approved 3-conductor cord rated up to 150V and a 3-prong grounding type plug (see Figure 16) for your protection against shock hazards.

Grounding plug should be plugged directly into a properly installed and grounded 3-prong grounding-type receptacle, as shown (Figure 16).

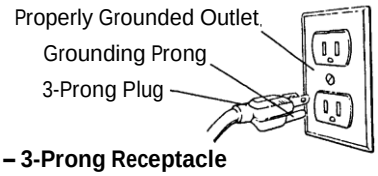

Figure 16 – 3-Prong Receptacle

Do not remove or alter grounding prong in any manner. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electrical shock.

WARNING: Do not permit fingers to touch the terminals of plug when installing or removing from outlet.

Plug must be plugged into matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify plug provided. If it will not fit in outlet, have proper outlet installed by a qualified electrician.

Inspect tool cords periodically, and if damaged, have repaired by an authorized service facility.

Green (or green and yellow) conductor in cord is the grounding wire. If repair or replacement of the electric cord or plug is necessary, do not connect the green (or green and yellow) wire to a live terminal.

Where a 2-prong wall receptacle is encountered, it must be replaced with a properly grounded 3-prong receptacle installed in accordance with National Electric Code and local codes and ordinances.

WARNING: The work should be performed by a qualified electrician.

A temporary 3-prong to 2-prong grounding adapter (see Figure 17) is available for connecting plugs to a two pole outlet if it is properly grounded.

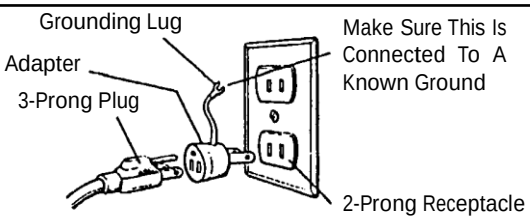

Figure 17 – 2-Prong Receptacle with Adapter

Do not use a 3-prong to 2-prong grounding adapter unless permitted by local and national codes and ordinances.

(A 3-prong to 2-prong grounding adapter is not permitted in Canada.) Where permitted, the rigid green tab or terminal on the side of the adapter must be securely connected to a permanent electrical ground such as a properly grounded water pipe, a properly grounded outlet box or a properly grounded wire system.

Many cover plate screws, water pipes and outlet boxes are not properly grounded. To ensure proper ground, grounding means must be tested by a qualified electrician.

INSTALLATION (CONTINUED)

EXTENSION CORDS

- The use of any extension cord will cause some drop in voltage and loss of power.
- Wires of the extension cord must be of sufficient size to carry the current and maintain adequate voltage.
- Use the table to determine the minimum wire size (A.W.G.) extension cord.
- Use only 3-wire extension cords having 3-prong grounding type plugs and 3-pole receptacles which accept the tool plug.
- If the extension cord is worn, cut, or damaged in any way, replace it immediately.

EXTENSION CORD LENGTH

Wire Size	A.W.G.
Up to 25 ft.	18
25-50 ft.	16

NOTE: Using extension cords over 50 ft. long is not recommended.

POWER SOURCE

Drill press requires a 115 volt, 60 Hz power source.

ELECTRICAL CONNECTIONS

Refer to Figure 18.

WARNING: All electrical connections must be performed by a qualified electrician. Make sure unit is off and disconnected from power source while motor is mounted, connected, reconnected or anytime wiring is inspected.

- The motor is wired for 115 volts and in a clockwise rotation as viewed from shaft end of motor.
- The motor cord must be secured to protect the wiring connections from possible strain.
- The power supply to motor is controlled by a locking rocker switch. Power lines are connected to the quick connect terminals of the switch.
- The green ground line must remain securely fastened to the motor ground terminal and drill press head to provide proper grounding.

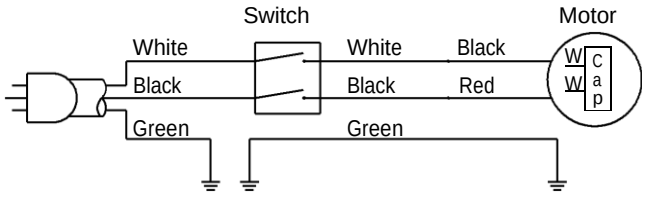

Figure 18 - Wiring Schematic for Drill Press

OPERATION

WARNING: Read and understand operating instructions and parts manual before operating this machine.

CAUTION: The operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety glasses complying with United States ANSI Z87.1 (shown on package) before commencing power tool operation.

ON/OFF SWITCH

Refer to Figure 19.

The ON/OFF switch is located on the front of the drill press head. To turn the drill press On, move the switch up to the ON position. To turn the drill press Off, move the switch down to the OFF position.

The drill press can be locked from unauthorized using by locking the switch. To lock the switch:

- Turn the switch to OFF position and disconnect drill press from power source.
- Pull the key out. The switch cannot be turned on with the key removed.(This item is suitable for American and Canada Market only.)

NOTE: Should the key be removed from the switch at the ON position, the switch can be turned off but cannot be turned on again. (This item is suitable for American and Canada Market only.)

- To replace key, slide key into the slot on switch until it snaps. (This item is suitable for American and Canada Market only.)

Figure 19 - Removing Locking Key

SPEED ADJUSTMENTS

Refer to Figures 14 and 20.

WARNING: Be sure drill press is turned off and is disconnected from power source before adjusting speeds.

- To change spindle speed, loosen motor lock knob (see Figure 14), and push the motor toward front of drill press. This will loosen the belt and permit relocating the belt to the desired pulley groove for the required spindle speed (See Figure 20, page 9).
- After belt has been repositioned, motor toward rear of drill press and tighten motor lock knob.
- Check belt for proper tension and make any final adjustment. A belt is properly tensioned when light pressure applied to mid- point of the belt produces about 3/8" deflection.

OPERATION (CONTINUED)

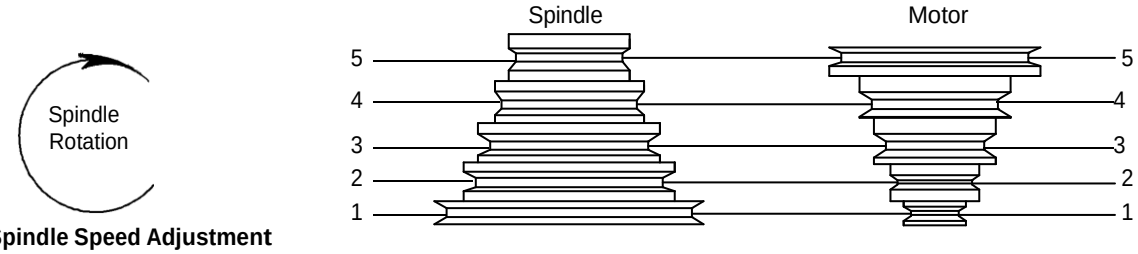

Figure 20 – Spindle Speed Adjustment

Recommended Drill Size per Material for 5 Speeds

Belt Location	RPM	Wood	Zinc Diecast	Alum. & Brass	Plastic	Cast Iron & Bronze	Steel Mild & Malleable	Steel Cast & Med. Carbon	Steel Stainless & Tool
	50Hz 60Hz	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm	in/mm
5-5	2450/2920	5/16 7.9	3/16 4.8	11/64 4.4	5/32 4.0	7/64 2.8	3/32 2.4	1/16 1.6	1/32 0.8
4-4	1870/2230	3/8 9.5	1/4 6.4	7/32 5.6	3/16 4.8	1/8 3.2	3/32 2.4	1/16 1.6	3/64 1.2
3-3	1330/1610	5/8 15.9	3/8 9.5	11/32 8.7	5/16 7.9	1/4 6.4	5/32 4.0	1/8 3.2	1/16 1.6
2-2	790/950	7/8 22.2	1/2 12.7	15/32 11.9	7/16 11.1	11/32 8.7	1/4 6.4	3/16 4.8	1/8 3.2
1-1	500/600	1¼ 31.8	3/4 19.0	11/16 17.5	5/8 15.9	1/2 12.7	3/8 9.5	5/16 7.9	1/4 6.4

HEAD ADJUSTMENTS

Refer to Figures 21 and 22.

WARNING: Be sure drill is turned off and is disconnected from power source before adjusting head.

- Head can be tilted 45° right and 90° left.
- To tilt head loosen head angle lock handle. Then pull out guide pin and turn guide pin 90°.
- Tilt head to desired angle, aligning reference mark on ram with corresponding angle on the scale. Secure in position by tightening head angle lock handle.
- To return head to 0° vertical position, loosen head angle lock handle, rotate guide pin 90° and tilt head. The guide pin will snap into slot at 0° vertical. Secure in position by tightening head angle lock handle.
- To move head forward and backward, loosen head angle lock handle. Turn head traverse knob until head is in desired position. Secure head by tightening head angle lock handle.
- To rotate head about the column, loosen head rotation lock handle. Rotate head to desired position and secure by tightening head rotation lock handle.

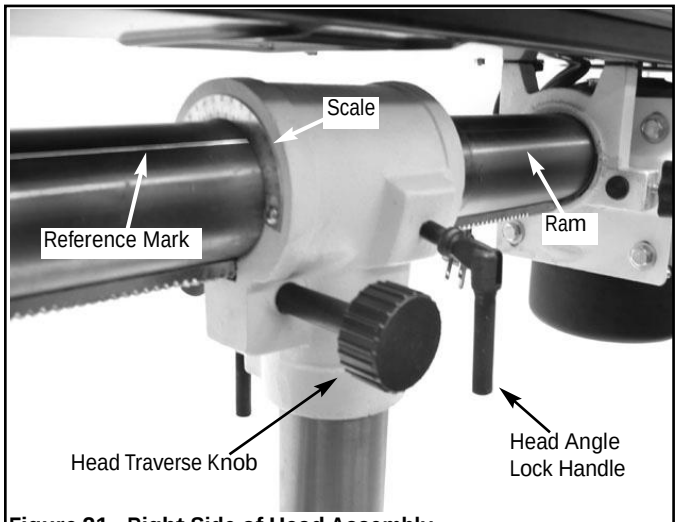

Figure 21 - Right Side of Head Assembly

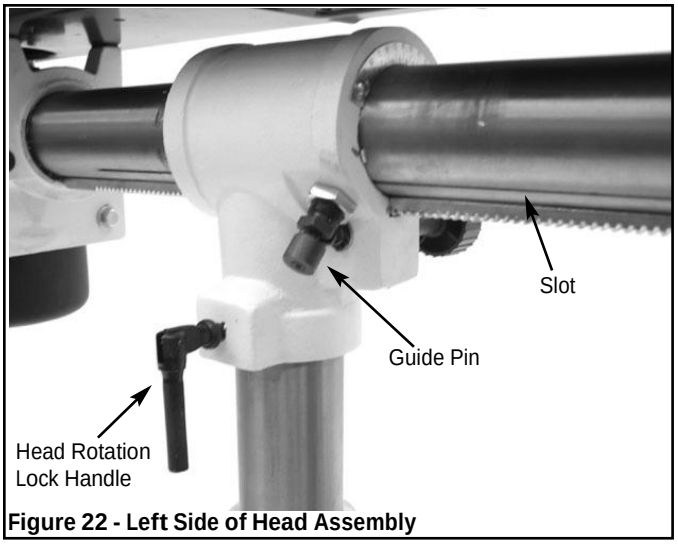

Figure 22 - Left Side of Head Assembly

TABLE ADJUSTMENTS

- Height adjustments: To adjust table, loosen locking handle and turn crank handle to desired height. Immediately retighten table bracket locking handle.
- Rotation of work table : Loosen table locking handle and rotate table to desired position and retighten handle. (Refer to Figure 7, page 5).
- Tilting work table: Loosen hex head bolt. Remove pin and nut. To do this, tighten nut until pin slips out easily. Tilt table to desired angle up to 45° and retighten hex head bolt. Reinsert pin and nut when returning the table to 0° position.
- To obtain more distance between chuck and table, the work table can be rotated 180° and base can be used as a work surface. This permits drilling of larger objects.
- Clamp table securely after adjustments have been made. (See Figure 23, page 10).

OPERATION (CONTINUED)

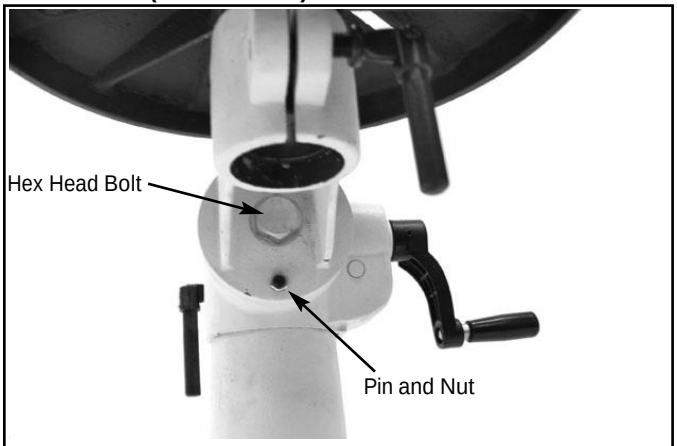

Figure 23 - Tilting Worktable

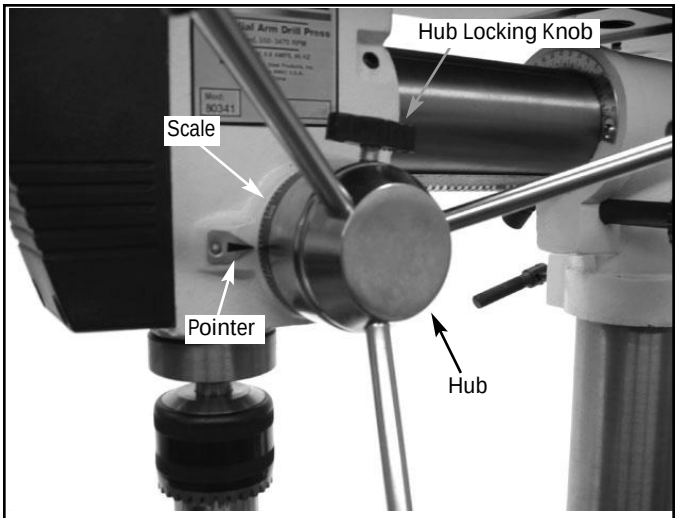

Figure 24 - Depth Stop Operation

DEPTH STOP ADJUSTMENT

Refer to Figure 24.

To control drilling depth, loosen hub locking knob and rotate hub until the desired depth on scale coincides with the pointer. Tighten knob to secure hub in position. Use this feature to drill more than one hole to the same depth.

MOUNT DRILL BIT

WARNING: Be sure drill press is turned off and is disconnected from power source before adjusting speeds.

- Place drill bit in jaws of drill chuck.
- Tighten chuck with drill chuck key. Be sure to tighten the chuck using all three key positions on the chuck body and remove chuck key.

MAINTENANCE

WARNING: Turn switch off and remove plug from power source outlet before maintaining or lubricating your drill press

V-BELT

Replace V-belt when worn.

LUBRICATION

The ball bearings are lubricated at the factory and need no further lubrication. Using 20wt. non detergent oil, periodically lubricate the splines (grooves) in the spindle and the rack (teeth on the quill) as follows:

- Lower spindle assembly (Figure 25, Ref. No. 3) all the way down.
- Apply lubricant around the inside of the hole in the spindle pulley (Figure 25, Ref. No. 72).
- Apply lubricant to rack (teeth) on quill (Figure 25, Ref. No. 6) while extended below drill press head.
- Apply lubricant to rack and pinion gear (Figures 26 and 27, Ref. Nos. 4 and 12) on column and table assembly.

CLEAN MOTOR

Frequently blow out any dust that may accumulate inside motor. If power cord is worn, cut or damaged in any way, have it replaced immediately.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Spindle does not turn	1. No power to drill press	1. Check wiring, fuse or circuit breaker
	2. Defective switch	2. Replace switch
	3. Defective motor	3. Replace motor
Noisy spindle	Defective bearings	Replace bearings
Noisy operation	1. Incorrect belt tension	1. Adjust tension
	2. Dry spindle	2. Lubricate spindle
	3. Loose spindle	3. Tighten pulley nut
	4. Loose motor pulley	4. Tighten set screw in pulley
Bit burns or smokes	1. Incorrect speed	1. Change speed
	2. Chips not coming out of table	2. Retract bit frequently to clear chips
	3. Dull bit	3. Sharpen or replace bit
	4. Feeding too slow	4. Feed faster; enough to allow drill to cut
	5. Bit not lubricated	5. Lubricate bit
	6. Bit running backwards	6. Check motor rotation to be sure it is clockwise facing shaft end
Excessive drill runout or wobble	1. Bent bit	1. Replace bit
	2. Bit not properly installed in chuck	2. Install bit properly
	3. Chuck not properly installed	3. Install chuck properly
	4. Worn spindle bearings	4. Replace bearings
Drill bit binds in workpiece	1. Workpiece pinching bit or excessive feed	1. Support or clamp work, decrease feed pressure
	2. Improper belt tension	2. Adjust tension tighter
	3. Workpiece not supported or clamped properly	3. Support or clamp workpiece securely

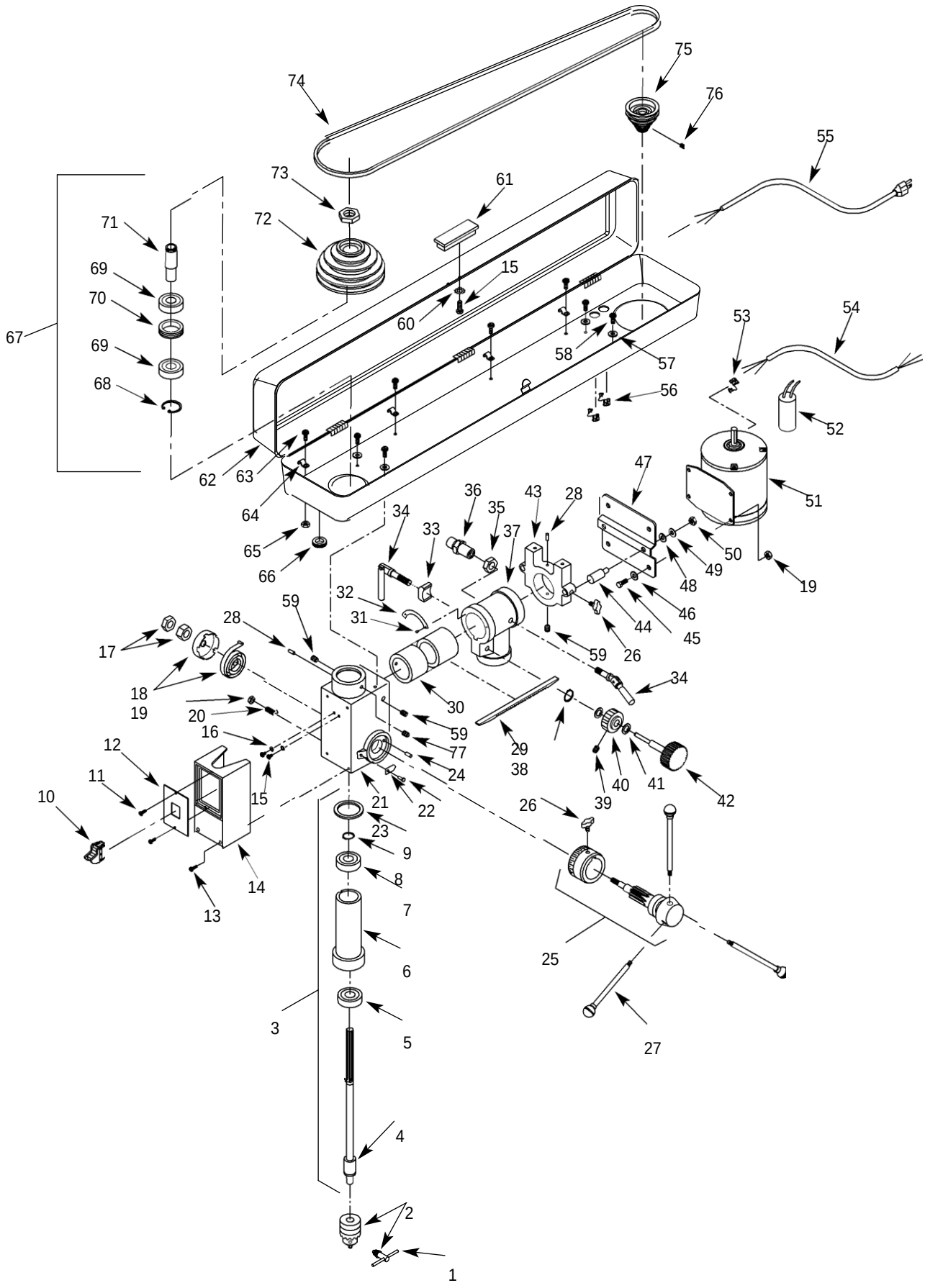

Figure 25 - Replacement Parts Illustration for Head

REPLACEMENT PARTS LIST FOR HEAD

No.	Description	Qty.	No.	Description	Qty.
1	Chuck Key	1	39	Set Screw	1
2	Chuck with Key (incl. Ref No. 1)	1	40	Gear	1
3	Lower Spindle Assembly	1	41	Spacer	2
	(incl. Ref. Nos. 4-9)		42	Knob	1
4	Spindle	1	43	Bracket	1
5	6202LL Ball Bearing	1	44	Tension Adjustment Bar	2
6	Quill	1	45	Hex Head Bolt	4
7	6201LL Ball Bearing	1	46	8mm Flat Washer	4
8	Retaining Ring	1	47	Motor Mount Plate	1
9	Rubber Bumper	1	48	10mm Flat Washer	2
10	Switch	1	49	10mm Lock Washer	2
11	Threadforming Screw	2	50	Hex Nut	2
12	Switch Plate	1	51	Motor (incl. Ref. Nos. 52-54)	1
13	Pan Head Screw	4	52	Capacitor	1
14	Cover	1	53	Strain Relief	1
15	Pan Head Screw	3	54	Motor Cord	1
16	5mm Serrated Washer	2	55	Line Cord	1
17	Hex Nut	2	56	Strain Relief	2
18	Cap cover and spring	1	57	6mm Flat Washer	4
19	Hex Nut	5	58	Pan Head Screw	4
20	Cone Point Set Screw	1	59	Set Screw	3
21	Drill Press Head	1	60	5mm Flat Washer	1
22	Pointer	1	61	Knob	1
23	Rivet	1	62	Pulley Housing	1
24	Spring Pin	1	63	Pan Head Screw	4
25	Quill Feed Assembly	1	64	Cord Clamp	4
	(incl. Ref. Nos. 26 and 27)		65	Hex Nut	4
26	Knob	3	66	Grommet	1
27	Handle with grip	3	67	Upper Spindle Assembly	1
28	Spring Pin	2		(incl. Ref. Nos. 68-71)	
29	Radial Rack	1	68	Retaining Ring	1
30	Ram	1	69	6203LL Ball Bearing	2
31	Pan Head Screw	2	70	Spacer	1
32	Scale	1	71	Upper Spindle Sleeve	1
33	Locking Shoe	1	72	Spindle Pulley	1
34	Handle	2	73	Pulley Nut	1
35	Hex Nut	1	74	V-Belt	1
36	Guide Pin Assembly	1	75	Motor Pulley	1
37	Ram Bracket (Model 80341)	1	76	Set Screw	1
37	Ram Bracket (Model 80342)	1	77	Cone Point Set Screw	1
38	Retaining Ring	1	Δ	Operator's Manual	1

Δ Not shown.

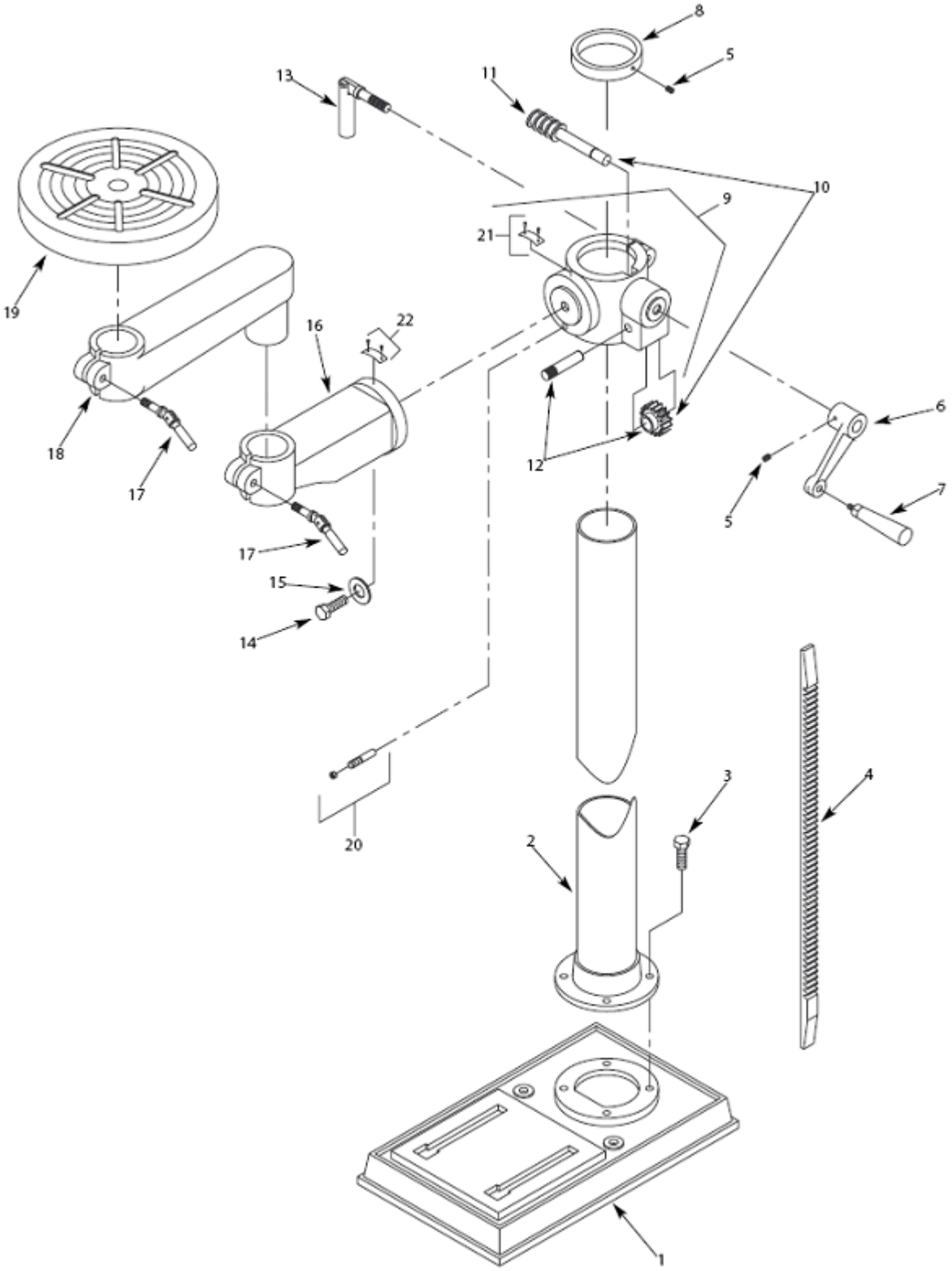

Figure 27 - Replacement Parts Illustration for Base (Model ZQJ3116A)

REPLACEMENT PARTS LIST FOR BASE (MODEL ZQJ3116A)

No.	Description		Qty.
1	Base		1
2	Column Assembly		1
3	8-1.25 x 20mm Socket Head Bolt	*	4
4	Rack		1
5	6-1.0 x 10mm Set Screw	*	2
6	Crank		1
7	Handle		1
8	Rack Retaining Ring		1
9	Table bracket assembly (Incl. Ref. Nos. 12 and 21)		1
10	Worm and Pinion Gear Set		1
11	Worm Gear		1
12	Pinion Gear and Shaft		1
13	Locking Handle		1
14	12-1.75 x 25mm Hex Head Bolt	*	1
15	12mm Flat Washer	*	1
16	Arm		1
17	Locking Handle		2
18	Extension Arm		1
19	Table		1
20	Index Pin and Nut		1
21	6-1.0mm Hex Nut	*	1
21	Scale with Rivets		1
22	Indicator with Rivets		1

* Standard hardware item available locally.