PALMGREN®

33" RADIAL ARM BENCH AND FLOOR DRILL PRESSES

Model 9680341C

Model 9680342C

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

964894002 - 0622

GETTING STARTED

STRUCTURAL REQUIREMENTS

Make sure all supporting structures and load attaching devices are strong enough to hold your intended loads. If in doubt, consult a qualified structural engineer.

ELECTRICAL REQUIREMENTS

Refer to Specifications on page 4 for the tools electrical requirements. The standard allowable voltage variation is plus or minus 10%.

TOOLS NEEDED

Standard mechanic's hand tool set.

UNPACKING

WARNING: Be careful not to touch overhead power lines, piping, lighting, etc. if lifting equipment is used. Drill Press weighs approximately 280 lbs, proper tools, equipment and qualified personnel should be employed in all phases of unpacking and installation.

Crates should be handled with care to avoid damage from dropping, bumping, etc. Store and unpack crates with correct side up. After uncrating Drill Press, inspect carefully for any damage that may have occurred during transit. 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 partially assembled. End user will need to assemble loose parts to machine.

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 metal surfaces with a light coating of oil.

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.

UNPACK

Unbolt saw from pallet and carefully lift drill from pallet using appropriate hoisting equipment. Do not discard packing materials until after machine has been inspected for damage and completeness. Locate loose parts and set aside.

INSPECT

After unpacking the unit, carefully inspect for any damage that may have occurred during transit. Check for loose, missing or damaged parts. Shipping damage claims must be filed with the carrier.

All tools should be visually inspected before use, in addition to regular periodic maintenance inspections.

Be sure that the voltage labeled on the unit matches your power supply.

CONTENTS MODEL 9680341C BENCH DRILL PRESS

A Head Assembly (1)
B Column Assembly (1)
C Base (1)
D Table and Bracket Assembly with Worm Gear (1)
E Quill Feed Handle (3)
F Table Crank Handle (1)
G Retaining Ring (1)
H Rack (1)
I Drill Chuck with Key (1)
J Yoke (1)
K Strap (1)

Not Shown: Operating Instructions and Parts Manual (1), Chuck arbor (1), Drift key (1), Lock handle (1), Shoe (1), M10 x 30 Hex head bolts (2), M10 Flat washers (2), M10 Hex nuts (2), M8 x 30 Hex head bolts (4), M8 Flat washers (4), M8 Lock washers (4), and 3mm and 4mm hex wrenches (1 ea.).

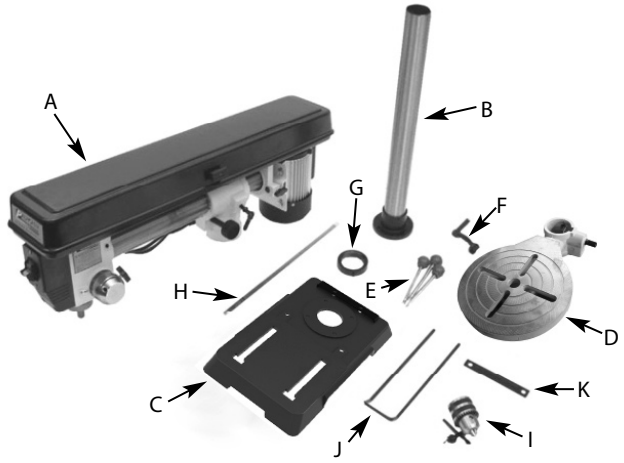

Figure 1 – Model 9680341C contents.

CONTENTS MODEL 9680342C FLOOR DRILL PRESS

A Head Assembly (1)
B Column Assembly (1)
D Base (1)
E Table Arm and Bracket Assembly with Worm Gear (1)
F Extension Arm (1)
G Table (1)
H Drill Chuck with Key (1)
I Table Crank Handle (1)
J Quill Feed Handle (3)
K Retaining Ring (1)
L Rack (1)
M Yoke (1)
N Strap (1)

Not Shown: Operating Instructions and Parts Manual (1), Chuck arbor (1), Drift key (1), Lock handle (1), Shoe (1), M10 x 40 Hex head bolts (4), M8 Flat Washers (4), M8 Lock washers (4), and 3mm, 4mm and 5mm hex wrenches (1 ea.).

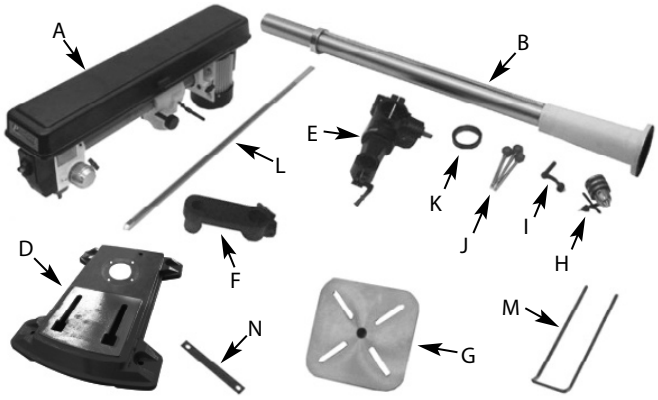

Figure 2 – Model 9680342C contents.

SAFETY RULES

WARNING: For your own safety, read all of the instructions and precautions before operating tool.

PROPOSITION 65 WARNING: Some dust created by using power tools contain chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks and cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area and work with approved safety equipment. Always wear **OSHA/NIOSH** approved, properly fitting face mask or respirator when using such tools.

WARNING: Always follow proper operating procedures as defined in this manual even if you are familiar with the use of this or similar tools. Remember that being careless for even a fraction of a second can result in severe personal injury.

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.

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.)

Use padlocks, master switches or remove switch keys to prevent any unintentional use of power tools.

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. 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.

SPECIFICATIONS

MODEL 9680341C BENCH DRILL PRESS

Chuck size	0.8 – 16mm, JT3
Spindle taper	MT2
Spindle travel	3.15″
Quill diameter	1.57″
Quill collar diameter	2.36″
Column diameter	2.56″
Speeds	5
RPM	600 – 3100
Swing	11″ – 33″
Head tilt	45°L, 90°R
Table size	11 3/8″ × 10″
Table slot	5/8″
Base size	16″ × 9 3/4″
Base working surface	8 7/8″ × 7 1/4″
Drilling capacity (cast iron)	5/8″
Distance, spindle to table	5/8″ – 16″
Distance, spindle to base	21 7/8″
Overall height	34 5/8″
Weight	95 lbs
Motor	1/2 HP, 120 V, 1725 RPM, 5.0 A

MODEL 9680342C FLOOR DRILL PRESS

Chuck size	0.8 – 16mm, JT3
Spindle taper	MT2
Spindle travel	3.15″
Quill diameter	1.57″
Quill collar diameter	2.36″
Column diameter	2.75″
Speeds	5
RPM	600 – 3100
Swing	11″ – 33″
Head tilt	45°L, 90°R
Table size	12″ × 12″
Table slot	5/8″
Base size	15″ × 21″
Base working surface	8″ × 8″
Drilling capacity (cast iron)	5/8″
Distance, spindle to table	5 1/8″ – 30 1/2″
Distance, spindle to base	51 1/2″
Overall height	65″
Weight	143 lbs
Motor	1/2 HP, 120 V, 1725 RPM, 5.0 A

ASSEMBLY

Refer to Figures 3 - 12 and 22.

MOUNT COLUMN ASSEMBLY TO BASE 9680341C

Refer to Figures 3 and 23.

- Place base on flat level surface.
- Mount column assembly to base using four hex head bolts, lock washers and flat washers.
- Push supporting yoke (Ref. No. 6) into holes at rear of base (Ref. No. 1) with bent portion of yoke facing down.
- Use strap, washers, bolts and nuts (Ref. Nos. 2 - 5) to secure yoke in position.

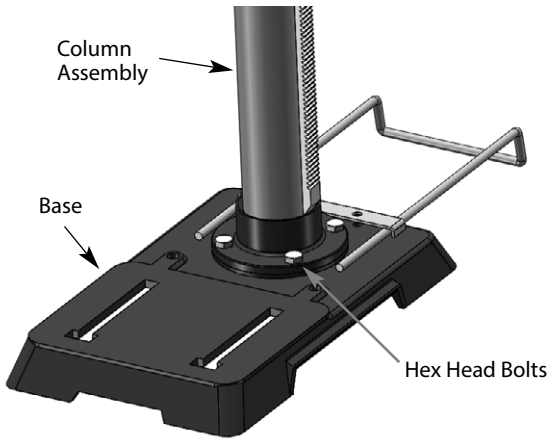

Figure 3 – Mount column assembly to base 9680341C.

MOUNT COLUMN ASSEMBLY TO BASE 9680342C

Refer to Figure 4.

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

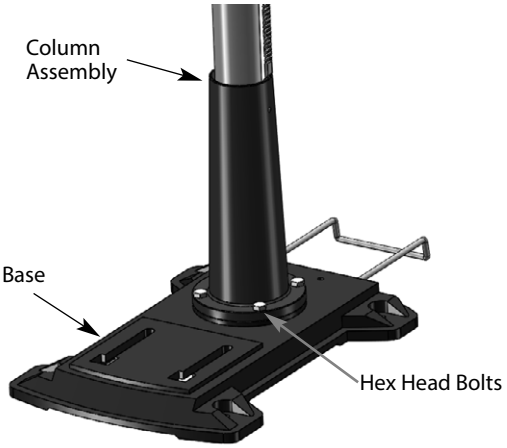

Figure 4 – Mount column flange to base 9680342C.

ASSEMBLY (CONTINUED)

MOUNT TABLE BRACKET ASSEMBLY 9680341C

Refer to Figures 5 and 6.

- 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. Large non-machined portion of rack should be at top.
- Slide table bracket assembly with rack over column. Place bottom end of rack inside beveled edge of column flange. See Figure 5.

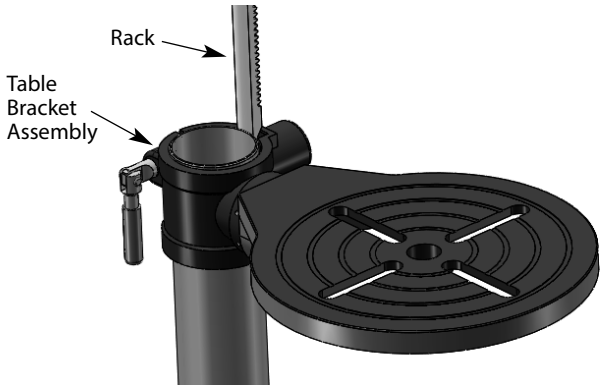

Figure 5 – Position table bracket assembly on column 9680341C.

- 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 screw, tighten screw on flat of worm gear shaft.

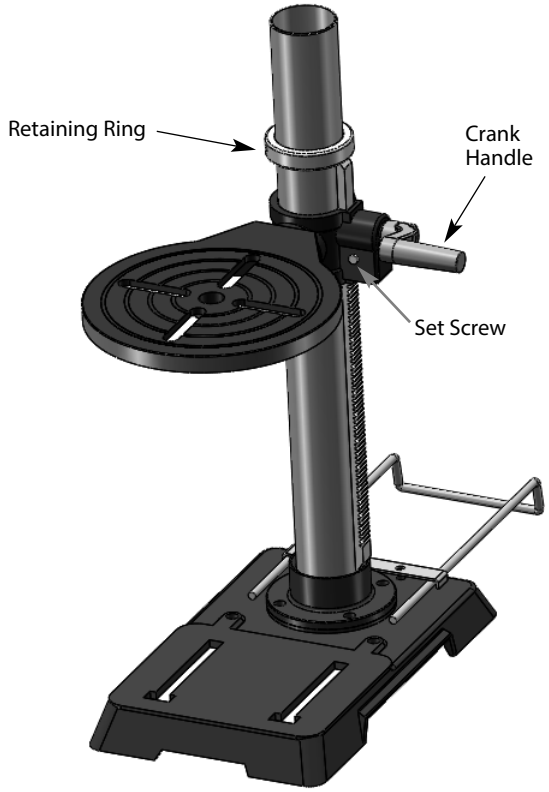

Figure 6 – Attach retaining ring, crank handle and locking handle 9680341C.

MOUNT TABLE BRACKET ASSEMBLY 9680342C

Refer to Figures 7 and 8.

- 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 7.

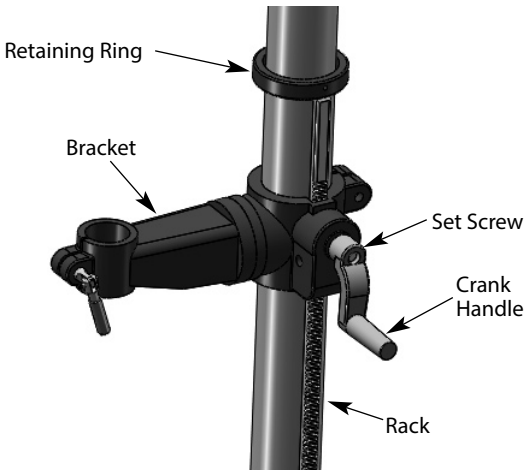

Figure 7 – Attach bracket, rack, retaining ring and crank handle 9680342C.

- 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 screw, tighten screw on flat of worm gear shaft.
- 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.
- Tighten locking handles to secure table, extension arm and bracket.

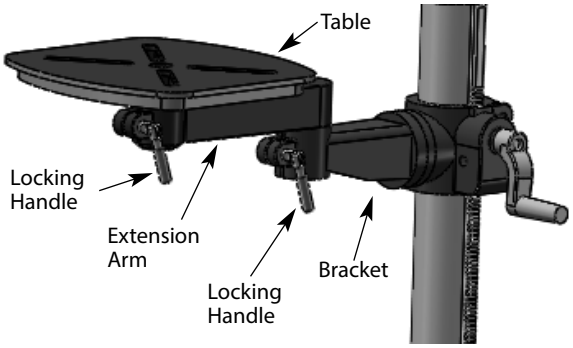

Figure 8 – Attach extension arm and table 9680342C.

ASSEMBLY (CONTINUED)

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.

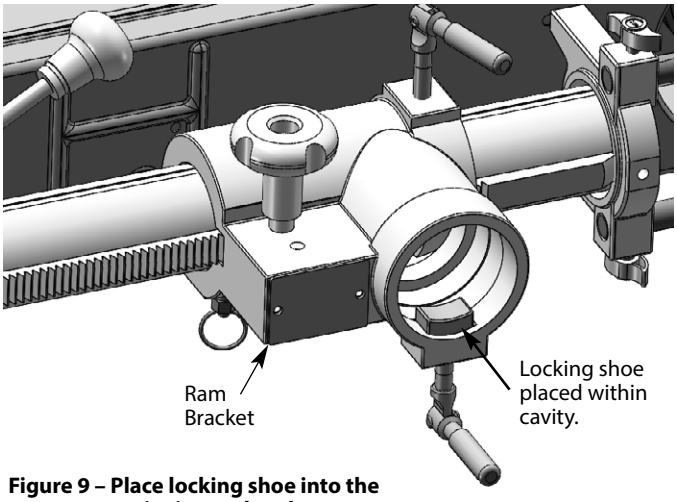

Figure 9 – Place locking shoe into the cavity in ram bracket.

- 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.

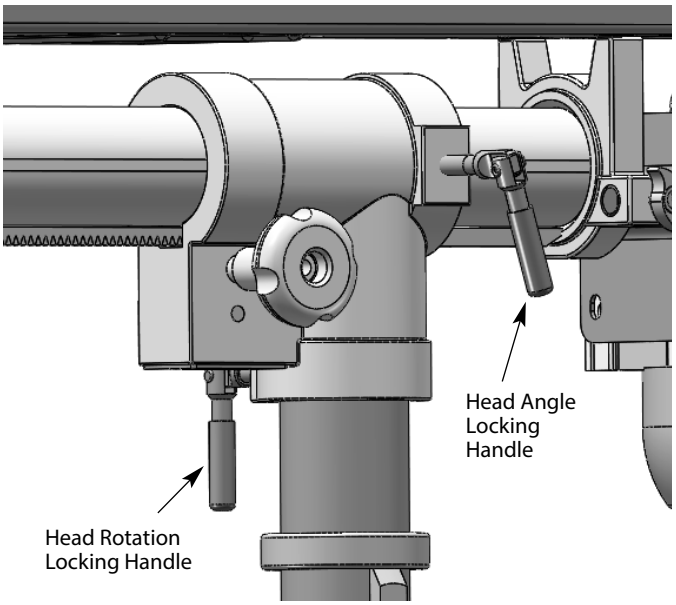

Figure 10 - Secure head assembly.

MOUNT CHUCK AND ARBOR

Refer to Figure 22.

- Be sure spindle, arbor and chuck tapers are clean and dry. Make sure quill is completely retracted.
- Use the provided chuck key (Ref. No. 1) to adjust the jaws of the chuck (Ref. No. 2) until they are recessed inside the drill chuck body.
- Place drill chuck on a workbench face down. Arbor (Ref. No. 80) has a short taper and a long taper. Place short taper into top of drill chuck and tap with a rubber or wooden mallet.
- Slide arbor into the spindle (Ref. No. 4) while slowly rotating drill chuck. Spindle has a rectangular pocket in which the tang fits into. Once tang is oriented correctly, drill chuck will not rotate without turning the spindle.
- Tap the end of drill chuck with a rubber or wooden mallet to seat it into the spindle.
- Use a hammer to carefully tap chuck securely onto the spindle.

MOUNT QUILL FEED HANDLES

Refer to Figure 11.

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

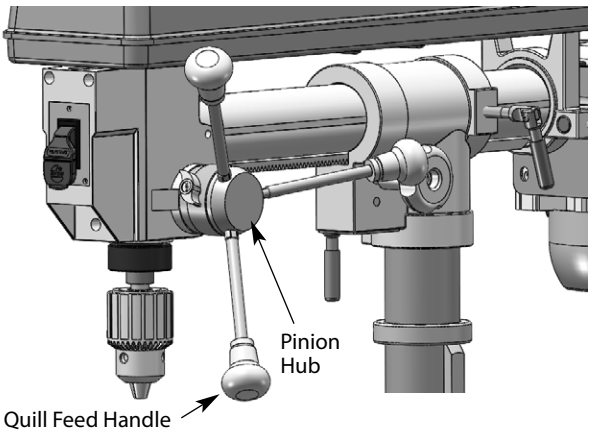

Figure 11 - Install quill feed handles.

ADJUST V-BELT TENSION

Refer to Figure 12.

- Open the pulley cover and loosen motor lock knob.
- Push motor back to apply tension to v-belt.
- Correct tension is obtained when the v-belt can be flexed approximately 3/8" at belt midpoint using finger pressure.
- When correct tension is obtained, secure motor in position by tightening motor lock knob.

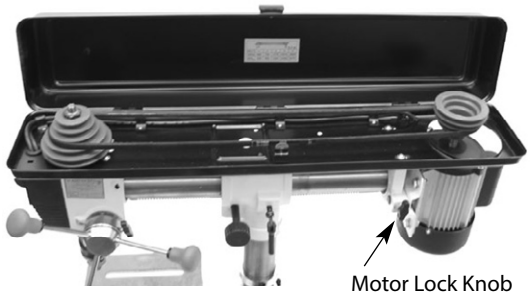

Figure 12 - Adjust V-belt tension.

INSTALLATION

MOUNT DRILL PRESS

Refer to Figure 13.

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.
- If not bolted to stand, bench or secured to floor, then support yoke is required on either drill press.
- Tighten all nuts and bolts that may have loosened during shipment.

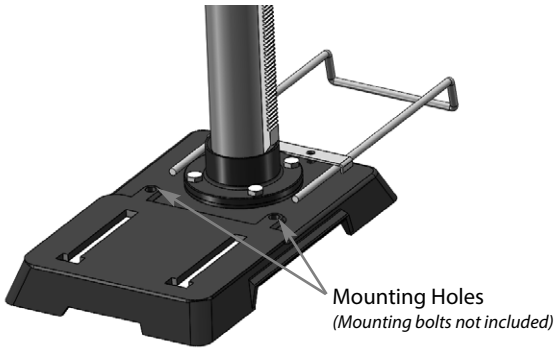

Figure 13 - Secure drill press to bench or stand.

POWER SOURCE

The motor is designed for operation on the voltage and 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 within 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.

Drill press requires a 120 volt, 60 Hz power source.

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 14) 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 14).

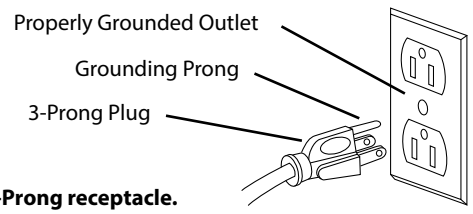

Figure 14 – 3-Prong receptacle.

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: This work should be performed by a qualified electrician.

A temporary 3-prong to 2-prong grounding adapter (see Figure 15) is available for connecting plugs to a two pole outlet if it is properly grounded.

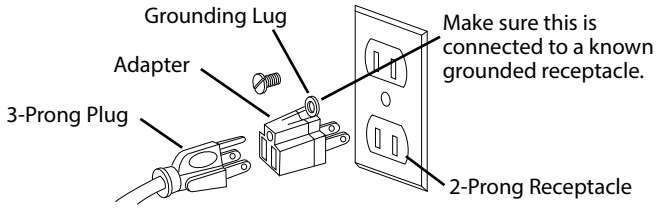

Figure 15 – 2-Prong receptacle with adapter.

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.

EXTENSION CORDS

Use proper extension cord. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

Extension Cord Table

		Volts	Total Length of Cord in Feet			
Ampere Rating		120	25	50	100	150
More Than	Not More Than	240	50	100	150	300
			Minimum Gage for Cord			
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

INSTALLATION (CONTINUED)

ELECTRICAL CONNECTIONS

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 120 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.

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 before commencing power tool operation.

ON/OFF SWITCH

Refer to Figure 16.

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 use 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.

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.

- To relace key, slide key into the slot on switch until it snaps.

Figure 16 - Locking key.

SPEED ADJUSTMENTS

Refer to Figure 12, Figure 17 and Speed Chart.

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 12, page 6), 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 17 and Speed Chart).
- After belt has been repositioned, push 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 midpoint of the belt produces about 3/8" deflection.

HEAD ADJUSTMENTS

Refer to Figures 18 and 19.

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.

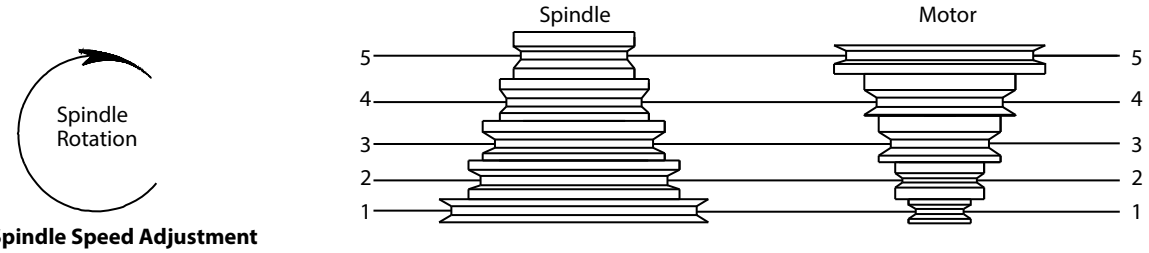

Figure 17 – Spindle Speed Adjustment

RECOMMENDED SPEED BASED ON MATERIAL AND DRILL BIT SIZE

Belt Location	RPM	Wood		Zinc Diecast		Alum. & Brass		Plastic		Cast Iron & Bronze		Steel Mild & Malleable		Steel Cast & Med. Carbon		Steel Stainless & Tool	
		in/mm		in/mm		in/mm		in/mm		in/mm		in/mm		in/mm		in/mm	
5-5	3100	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	2250	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	1650	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	1050	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	600	11/4	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

OPERATION (CONTINUED)

- 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.

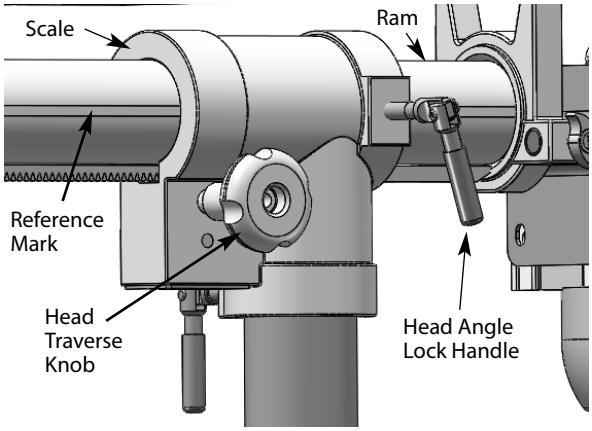

Figure 18 - Right side of head assembly.

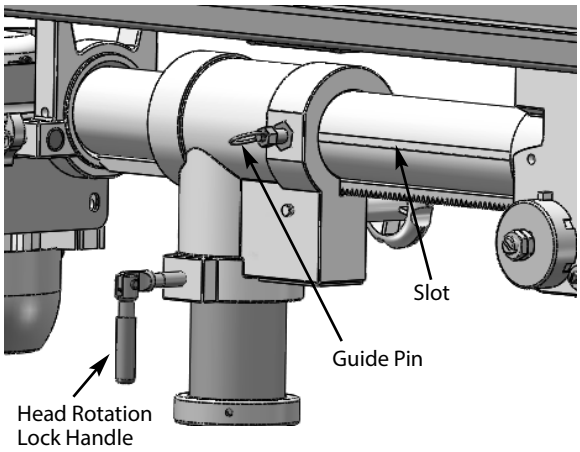

Figure 19 - Left side of head assembly.

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 20).

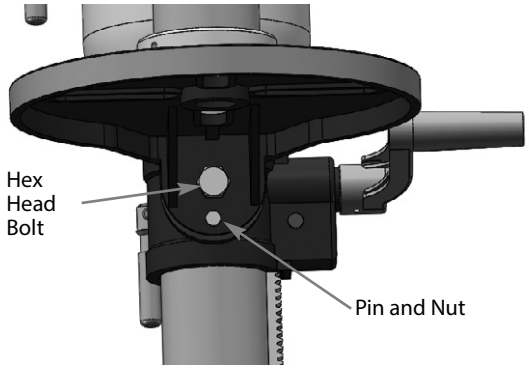

Figure 20 - Tilting worktable.

DEPTH STOP ADJUSTMENT

Refer to Figure 21.

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.

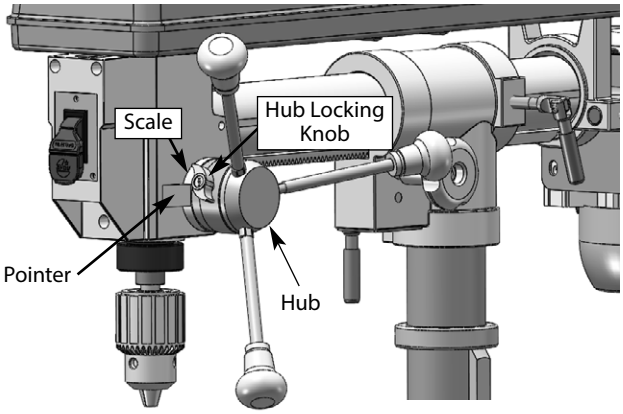

Figure 21 - Depth stop operation.

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 22, Ref. No. 3) all the way down.
- Apply lubricant around the inside of the hole in the spindle pulley (Figure 22, Ref. No. 72).
- Apply lubricant to rack (teeth) on quill (Figure 22, Ref. No. 6) while extended below drill press head.
- Apply lubricant to rack and pinion gear (Figures 23 and 24, Ref. Nos. 11 and 22) 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 CAUSE(S)	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

NOTES

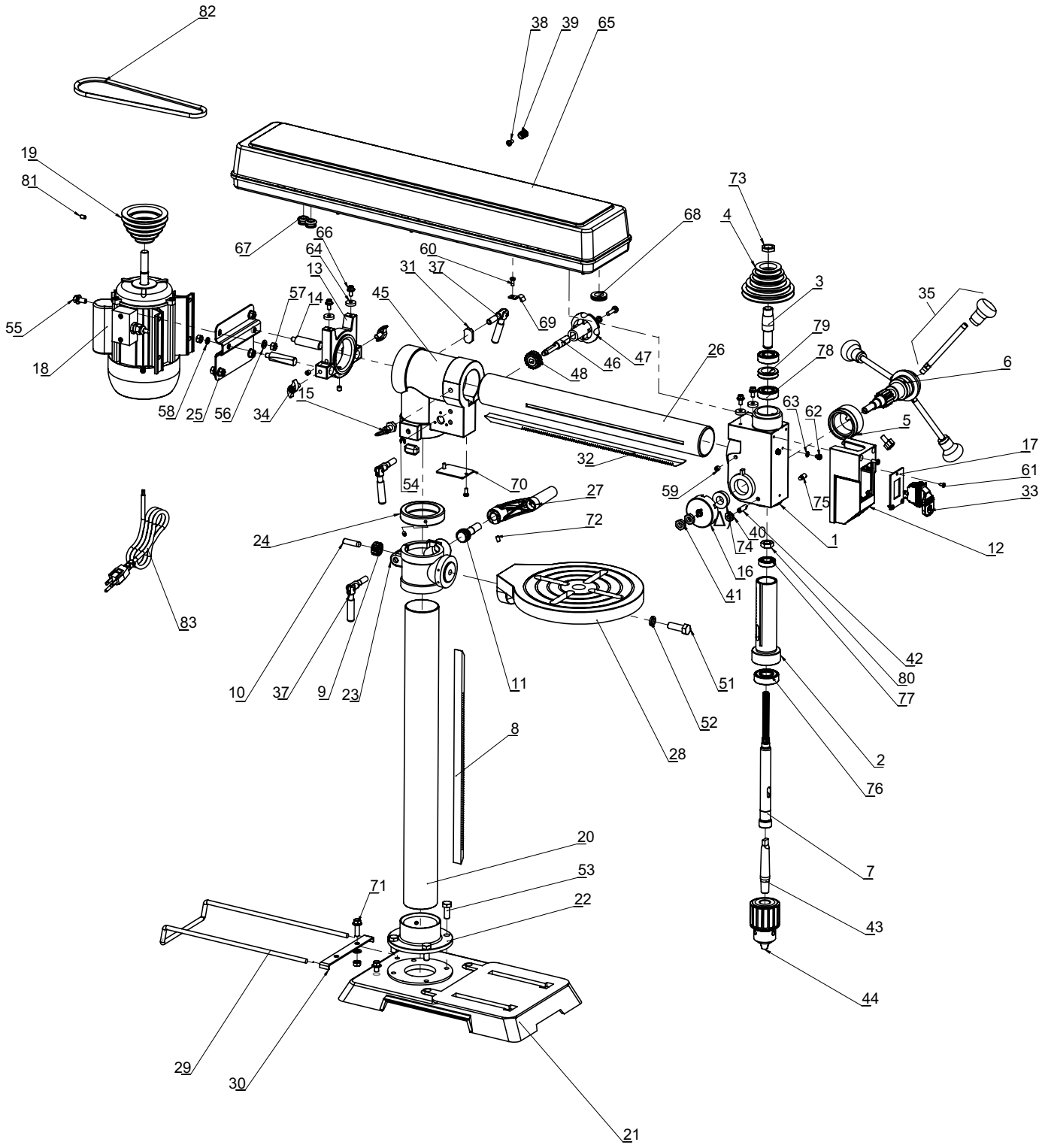

Figure 22 – Repair Parts Illustration for Model 9680341C Bench Drill Press

REPLACEMENT PARTS LIST FOR MODEL 9680341C BENCH DRILL PRESS

Ref. No.	Description	Part No.	Qty.
1	Head	N/A	1
2	Quill	964889001	1
3	Spindle Sleeve	964889101	1
4	Spindle Pulley	964889201	1
5	Dial Body	964889301	1
6	Quill Feed Assembly	964889401	1
7	Spindle	964889501	1
8	Rack	964889601	1
9	Pinion	964889701	1
10	Pinion Shaft	964889801	1
11	Worm Gear	964889901	1
12	Switch Box	964890001	1
13	Motor Mount	964890101	1
14	Motor Rod	964890201	2
15	Location Pin	964890301	1
16	Cap Cover & Spring	964890401	1
17	Switch Box Cover	964890501	1
18	Motor	964890601	1
19	Motor Pulley	964890701	1
20	Column	964890801	1
21	Base	964890901	1
22	Column Base	964891001	1
23	Table Bracket	964891101	1
24	Rack Collar	964891201	1
25	Motor Mount Plate	964891301	1
26	Variable Diameter Collar	964891401	1
27	Crank	964891501	1
28	Work Table	964891601	1
29	Fixed Mount	964891701	1
30	Support Fixed Plate	964891801	1
31	Lock Block	964891901	2
32	Variable Diameter Rack	964892001	1
33	Switch	961608000	1
34	Plastic Knob	962262201	3
35	Handle Bar & Knob	963054701	3
37	Table Lock Handle	963090601	3
38	Screw, M5x12	*	1
39	Pulley Knob	964892101	1
40	Hex Nut, M10	*	1
41	Hex Nut, M12	*	2
42	Quill Set Screw	964892201	1
43	Arbor MT2/JT3	964892301	1
44	Chuck & Key JT3	964892401	1
45	Horizontal Column Bracket	964892501	1
46	Variable Diameter Handle Shaft	964892601	1
47	Variable Diameter Handle	964892701	1
48	Pinion	964892801	1
49	Flat Washer M8	964892901	1
50	Philips Screw, M6x25	*	1
51	Hex Bolt, M12×35	*	1
52	Split Washer, M6	*	1
53	Hex Bolt, M10×25	*	4
54	Split Washer, M6	*	1
55	Hex Bolt, M8×16	*	4
56	Flat Washer, M8	*	6
57	Hex Nut, M8	*	8
58	Split Washer, M8	*	2
59	Hex Socket Screw, M8×8"	*	5
60	Philips Screw, M5x12	*	9
61	Philips Tapping Screw, M4.2x10	*	3
62	Philips Screw Assembly, M5×8	*	2
63	Star Washer, M5	*	2
64	Sponge Pad	964893001	4
65	Pulley Cover	964893101	1
66	Philips Flange Head Screw, M6x12	*	4
67	Cord Bushing	964893201	2
68	Rubber Bushing	964893301	1
69	Wire Clamp	964893401	4
70	Cover	964895601	1
71	Hex Bolt, M8×25	*	2
72	Hex Socket Screw, M6×10"	*	2
73	Pulley Set Screw	964893501	1
74	Bushing	964893601	1
75	Slotted Shoulder Screw, M6×12"	*	1
76	Ball Bearing, 6204-2RZ	*	1
77	Ball Bearing, 6002-2RZ	*	1
78	Ball Bearing, 203-2RZ	*	2
79	Retainer	964893701	1
80	Hex Nut, M14×1.5"	*	1
81	Hex Socket Set Screw	964893801	1
82	Belt, K-59	964893901	1
83	Power Cord	963056401	1
Δ	Operator's Manual	964894002	

(Δ) Not shown. (N/A) Not available as repair part. (*) Standard hardware item, available locally.

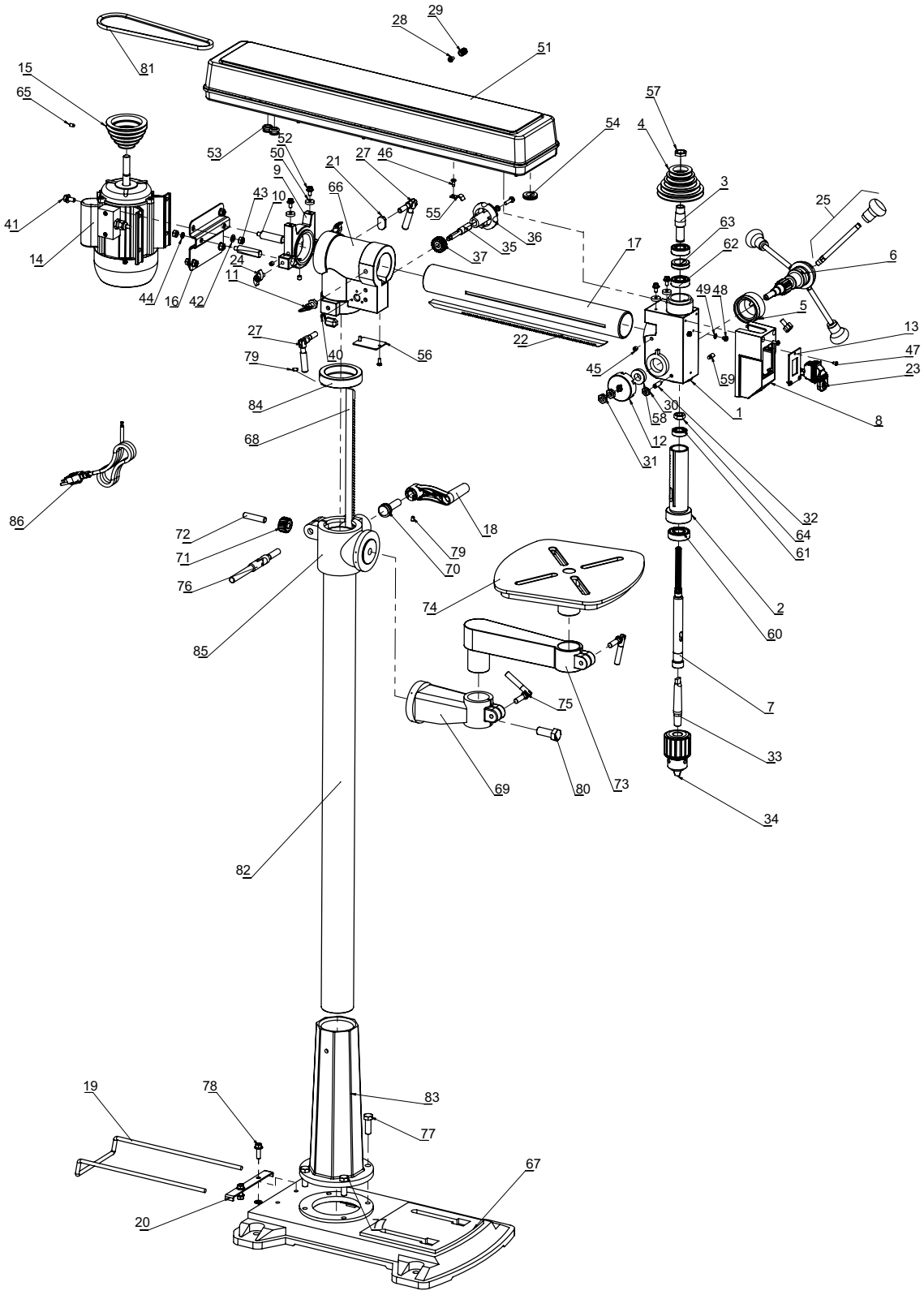

Figure 23 – Replacement Parts Illustration for Model 9680342C Floor Drill Press

REPLACEMENT PARTS LIST FOR MODEL 9680342C FLOOR DRILL PRESS

Ref. No.	Description	Part No.	Qty.
1	Head	NA	1
2	Quill	964889001	1
3	Spindle Sleeve	964889101	1
4	Spindle Pulley	964889201	1
5	Dial Body	964889301	1
6	Quill Feed Assy.	964889401	1
7	Spindle	964889501	1
8	Switch Box	964890001	1
9	Motor Mount	964890101	1
10	Motor Rod	964890201	2
11	Location Pin	964890301	1
12	Cap Cover & Spring	964890401	1
13	Switch Box Cover	964890501	1
14	Motor	964890601	1
15	Motor Pulley	964890701	1
16	Motor Mount Plate	964891301	1
17	Variable Diameter Column	964891401	1
18	Crank	964891501	1
19	Fixed Mount	964891701	1
20	Support Fixed Plate	964891801	1
21	Lock Block	964891901	2
22	Variable Diameter Rack	964892001	1
23	Switch	961608000	1
24	Plastic Knob	962262201	3
25	Handle Bar & Knob	963054701	3
27	Table Lock Handle	963090601	2
28	Philips Screw Assembly, M5x12	*	1
29	Pulley Cover Knob	964892101	1
30	Hex Nut, M10	*	1
31	Hex Nut, M12	*	2
32	Quill Set Screw	964892201	1
33	Arbor, MT2/JT3	964892301	1
34	Chuck & Key, JT3	964892401	1
35	Variable Diameter Handle Shaft	964892601	1
36	Variable Diameter Handle	964892701	1
37	Worm Gear	964889901	1
38	Flat Washer, M6	*	1
39	Philips Screw, M6x25	*	1
40	Split Washer, M6	*	1
41	Hex Bolt, M8x16	*	4
42	Flat Washer, M8	*	6
43	Hex Nut, M8	*	8
44	Split Washer, M8	*	2
45	Hex Socket Screw, M8x8	*	6
46	Philips Screw, M5x12	*	9
47	Philips Tapping Screw, 4.2x10	*	3
48	Philips Screw Assembly, M5x8	*	2
49	Star Washer, M5	*	2
50	Sponge Pad	964893001	4
51	Pulley Cover	963056701	1
52	Philips Flange Screw, M6x12	*	4
53	Cord Bushing	964893201	2
54	Rubber Bushing	964893301	1
55	Wire Clamp	964893401	4
56	Cover	964895601	1
57	Pulley Set Screw, M6x10	964893501	1
58	Bushing	964893601	1
59	Slotted Shoulder Screw, M6x12	*	1
60	Ball Bearing, 6204-2RZ	*	1
61	Ball Bearing, 6002-2RZ	*	1
62	Ball Bearing, 6203-2RZ	*	2
63	Retainer	964893701	1
64	Hex Nut, M14x1.5	*	1
65	Hex Socket Set Screw	964893801	1
66	Horizontal Column Bracket	964894101	1
67	Base	964894201	1
68	Rack	964894301	1
69	Table Support	964894401	1
70	Worm Gear	964894501	1
71	Pinion	964894601	1
72	Pinion Gear Shaft	964894701	1
73	Extension Support	964894801	1
74	Work Table	964894901	1
75	Table Lock Handle	964895001	2
76	Table Bracket Lock Handle	964895101	1
77	Hex Bolt, M12x35	*	4
78	Hex Bolt, M8x25	*	2
79	Hex Socket Set Screw, M6x10	*	2
80	Hex Bolt, M16x40	*	1
81	Belt, K59	964893901	1
82	Column	964895201	1
83	Column Base	964895301	1
84	Rack Collar	964895401	1
85	Table Bracket	964895501	1
86	Power Cord	963056401	1
Δ	Operator's Manual	964894002	

(Δ) Not shown. (N/A) Not available as repair part. (*) Standard hardware item, available locally.

PALMGREN WARRANTY

C.H. Hanson / Palmgren warrants their products to be free of defects in material or workmanship. This warranty does not cover defects due directly or indirectly to misuse, abuse, normal wear and tear, failure to properly maintain the product, heated, ground or otherwise altered, or used for a purpose other than that for which is was intended.

The warranty does not cover expendable and/or wear part (i.e. v-belts, screws, abrasives, jaws), damage to tools arising from alteration, abuse or use other than their intended purpose, packing and freight. The duration of this warranty is expressly limited to the terms noted below beginning from the date of delivery to the original user.

The Palmgren branded items carry the following warranties on parts:

All arbor presses, vises, clamps, positioning tables, tombstones, jack screws and vise accessories - LIFETIME.

All bench grinders, drill presses, tapping machines, band saws, lathes, milling machines, abrasive finishing machines and work stands - 3 YEARS.

The obligation of C.H. Hanson / Palmgren is limited solely to the repair or replacement, at our option, at its factory or authorized repair agent of any part that should prove inoperable. Purchaser must lubricate and maintain the product under normal operating conditions at all times. Prior to operation become familiar with product and the included materials, i.e. warnings, cautions and manuals.

Failure to follow these instructions will void the warranty.

This warranty is the purchaser's exclusive remedy against C.H. Hanson for any inoperable parts in its product. Under no circumstances is C.H. Hanson liable for any direct, indirect, incidental , special or consequential damages including loss of profits in any way elated to the use or inability to use our products. This warranty gives you specific legal rights which may vary from state to state.

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