



12"
BENCH MODEL DRILL PRESS

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

DESCRIPTION

Palmgren Drill Presses feature a heavy cast iron base, column collar, work table and head. Work table height is adjustable using rack and pinion. Table can be tilted 45° both right and left, and rotates 360° on a vertical axis. Work table surface is precision ground and features T-slots for secure, accurate mounting of workpiece and also a coolant trough. Digital readout displays spindle depth and RPM. Other features of the Palmgren drill press are an enclosed ball bearing quill assembly, quick belt change and tension mechanism, positive quick-adjust feed depth stop and a 1/3 HP, 1725 RPM motor. Chuck is included.

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

UNPACKING

Refer to Figure 1.

WARNING: Be careful not to touch overhead power lines, piping, lighting, etc., if lifting equipment is used. Drill press weighs up to 130 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 unassembled. Locate and identify the following assemblies and loose parts:

- A Head Assembly
- B Table Assembly
- C Base
- D Column Assembly
- E Table Handle Assembly
- F Table Locking Handle
- G Drill Chuck with Key
- H Worm Gear
- I Feed Handle Grip Assembly
- J Feed Handle (2)
- K M8 x 30 Socket Head Bolt (4)
- L M8 x 125 Hex Head Bolt with Washers and Hex Nuts (2)
- M 3, 4 and 6mm Hex Wrench

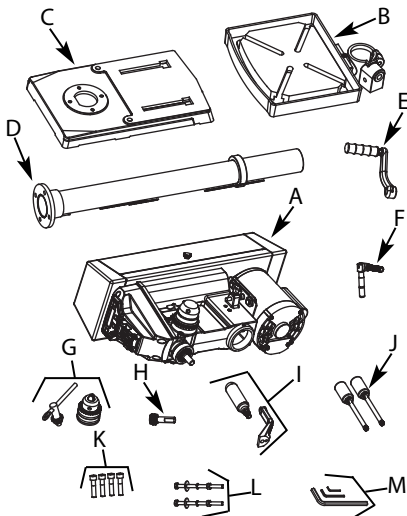


Figure 1 – Unpacking

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 top.

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

Chuck size	.....1/25-1/2, JT33
Spindle taper	..... JT33
Spindle travel	..... 3/4"
Quill diameter	..... 1.58"
Quill collar diameter	..... 2.165" (55mm)
Column diameter	..... 2.34"
Speeds	..... 16
RPM	..... 244-3386
Swing	..... 13.25"
Table size	..... 8.6 x 9.4"
T-slots (diagonal)	..... 4 x 14mm
Base size	..... 9 3/4 x 16 1/2"
Base working surface	..... 8 3/8 x 9 3/8"
Drilling capacity (cast iron)	..... 1/2"
Max. distance, spindle to table	..... 16 3/4"
Distance, spindle to base	..... 22 5/16"
Overall height	..... 38 7/8"
Weight	..... 113 lbs
Shipping weight	..... 123 lbs
Motor	..... 1/3 HP, 120 V, 1725 RPM, 6.0 Amps, 60 HZ

SAFETY RULES

PROPOSITION 65 WARNING: Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains 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 vary, 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.

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.

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, 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 11. 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**MOUNT COLUMN ASSEMBLY TO BASE**

Refer to Figure 7.

- Place base (Ref. No. 1) on flat level surface.
- Mount column assembly (Ref. No. 7) to base using four socket head bolts (Ref. No. 6).

MOUNT TABLE

Refer to Figure 7.

- Loosen set screw (Ref. No. 15). Remove rack and rack retaining ring (Ref. Nos. 8 and 14) from column (Ref. No. 7).
- Place worm gear (Ref. No. 18) into hole of table bracket (Ref. No. 11). Make sure worm gear meshes with pinion gear (Ref. No. 17).
- Place rack inside table bracket assembly with large, unmachined portion of rack to the top. Slide rack into slot in bracket so that teeth of rack engage pinion gear in bracket.
- Slide table assembly with rack over column. Place bottom end of rack inside beveled edge of column flange.
- Slide rack 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 (Ref. No. 15).
- Rotate table assembly around column. Adjust rack retaining ring as necessary to prevent binding of rack.
- Attach crank handle (Ref. No. 19) to shaft on worm gear, rotate worm gear to remove slack, and shoulder crank handle against table bracket. Secure handle with set screw.
- Thread handle (Ref. No. 16) into table bracket assembly. Position bracket over the center of the base and secure bracket in position.

MOUNT HEAD ASSEMBLY

Refer to Figure 9.

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

- Slide drill press head assembly onto top of column.
- Position head so that it is centered over base.
- Secure head by tightening the set screws (Ref. No. 24) on the right side of the head casting.

INSTALL QUILL FEED HANDLES

Refer to Figure 8.

Thread the two quill feed handles (Ref. No. 18) securely into pinion assembly (Ref. No. 17).

INSTALL CRANK ARM AND FEED GRIP

Refer to Figure 8.

- Attach crank arm (Ref. No. 20) to pinion (Ref. No. 17) using socket head bolt (Ref. No. 19).
- Thread feed grip (Ref. No. 21) into crank arm and secure with hex nut.

INSTALL CHUCK

Refer to Figure 8.

- Be sure spindle and chuck tapers are clean and dry. Make sure quill is completely retracted.
- Use the provided chuck key (Ref. No. 13) to adjust the jaws of the chuck (Ref. No. 12) until they are recessed inside the drill chuck body.
- Slide chuck over spindle taper and push chuck onto spindle.
- Tap the end of drill chuck with a rubber or wooden mallet to seat it into the spindle.

Hardware (Two M8 x 125 hex head bolts, M8 lock washers, M8 hex nuts and four M8 flat washers) has been provided for mounting the drill press to a wood base plate. This is recommended if you intend to place the drill press on a mobile base. The minimum recommended size of the wood base plate is 3/4 x 24 x 24".

INSTALLATION

Refer to Figures 2 and 3.

MOUNT DRILL PRESS

- Drill press must be mounted to flat level surface. Use shims or machine mounts if necessary. Do not mount drill press in direct sunlight.
- 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.

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.

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 300V and a 3-prong grounding type plug rated at 115V (See Figure 2) 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 2).

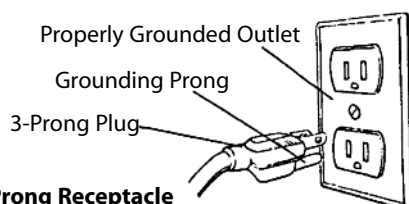


Figure 2 – 3-Prong Receptacle

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 3) is available for connecting plugs to a two pole outlet if it is properly grounded.

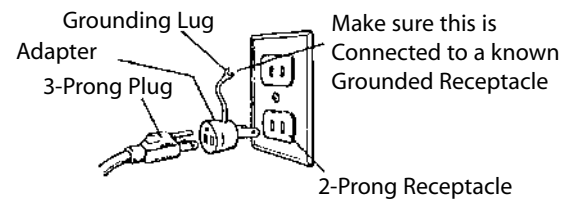


Figure 3 – 2-Prong Receptacle with adapter

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

- 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 (120 VOLTS)

Wire Size	A.W.G.
Up to 25 ft.	18
25-100 ft.	16
100-150 ft.	14

NOTE: Using extension cords over 150 ft. long is not recommended.

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 should be wired for 120 volts and clockwise rotation as viewed from shaft end of motor.
- A label on the motor describes the possible wiring configurations. There are many different possible combinations, so only the diagram provided with the motor should be used.
- The power supply to motor is controlled by a push button 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 to provide proper grounding.

OPERATION

Refer to Figures 4-9.

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.

STARTING AND STOPPING THE DRILL PRESS

Refer to Figures 4 and 9.

WARNING: Be sure drill bit is not in contact with workpiece when motor is started. Start motor and allow bit to come up to full speed before drilling.

- The ON/OFF switch (Ref. No. 36) is located on the front of the head casting.
- To turn saw ON, pull the switch to the up position.
- To turn saw OFF, push the switch to the down position.

The saw can be locked from unauthorized use by locking the switch. To lock the switch:

- Turn the switch to OFF position and disconnect saw 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 replace key, slide key into the slot on switch until it snaps.

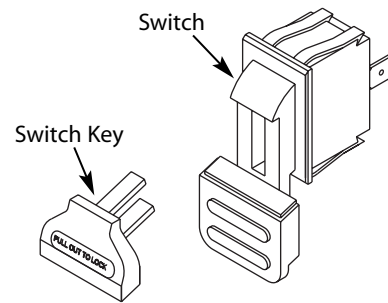


Figure 4 – ON/OFF Switch

SPEED ADJUSTMENTS

Refer to Figures 5 and 9.

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 (Ref. No. 22), on the right side of the head 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 5, page 6).
- After belt has been repositioned, push motor toward rear of drill press and tighten motor lock knobs.
- 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 1/2" deflection.

TABLE ADJUSTMENTS

Refer to Figure 7.

- Height adjustments: To adjust table, loosen locking handle (Ref. No. 16) and turn crank handle (Ref. No. 19) to desired height. Immediately retighten table bracket locking handle.
- Tilting work table: Loosen table bolt (Ref. No. 10). Remove pin and nut (Ref. No. 9). To do this, tighten nut until pin slips out easily. Tilt table to desired angle up to 45° and retighten table 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.

DEPTH STOP ADJUSTMENT

Refer to Figure 8.

To control drilling depth, loosen locking knob (Ref. No. 16) on pinion assembly (Ref. No. 17). Rotate scale so desired depth is indicated on scale next to the pointer. Tighten locking knob. Use this feature to drill more than one hole to the same depth.

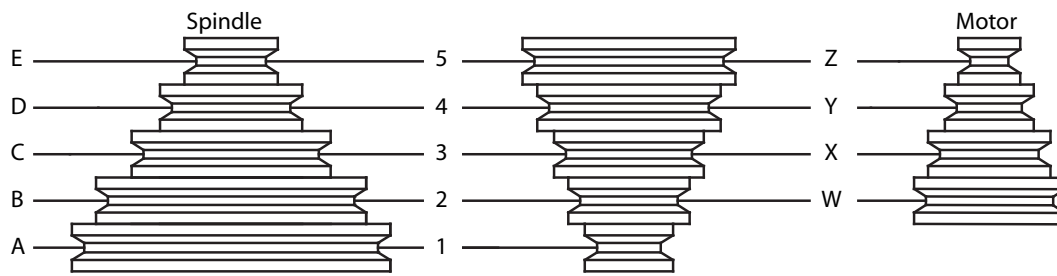
To control drilling depth, use scale (Ref. No. 14) to adjust to desired depth.

MOUNT DRILL BIT

Refer to Figure 8.

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

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



RPM	Belt Location
244	A1-5Z
357	B2-5Z
383	A1-4Y
502	C3-5Z
560	B2-4Y
575	A1-3X
695	D4-5Z
789	C3-4Y
840	B2-3X
855	A1-2W
1518	E5-4Y
1639	D4-3X
1759	C3-2W
2277	E5-3X
2437	D4-2W
3386	E5-2W

Figure 5 – Spindle Speed Adjustment

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
3386	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
2277	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
1518	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
575	1 1/4	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
383	1 5/8	41.3	7/8	22.2	3/4	19.0	13/16	20.6	5/8	15.9	1/2	12.7	7/16	11.1	3/8	9.5
244	2	50.8	1	25.4	—	—	—	—	—	—	—	—	9/16	14.3	1/2	12.7

- Use only the self-ejecting chuck key (Ref. No. 13) supplied with this drill press, or a duplicate key. Use of any other key might allow start up with the key still in the chuck. An airborne key could strike the operator and cause injury.

- Button 'B' turns power on and off to Display 'A'.
- Button 'C': Press once for spindle depth in inches; press again for spindle depth in mm.
- Button 'D': Press to display spindle RPM.
- Button 'E' resets display at zero for spindle depth.

DIGITAL DISPLAY PANEL

Refer to Figure 6.

- Display panel 'A' shows the depth of the spindle and spindle RPM.

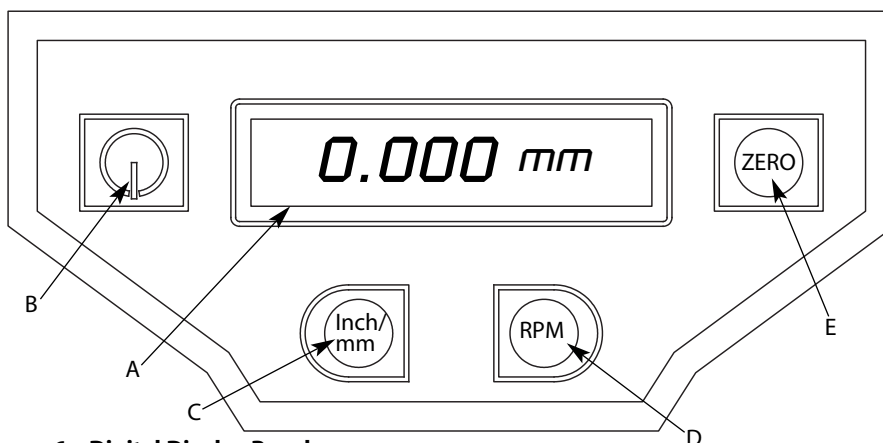


Figure 6 – Digital Display Panel

MAINTENANCE

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

DRIVE BELT

Replace drive belt when worn.

LUBRICATION

Refer to Figures 7 and 8.

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 quill assembly (Figure 8, Ref. No. 11) all the way down.
- Apply lubricant around the inside of the hole in the spindle pulley (Figure 8, Ref. No. 2).
- Apply lubricant to rack (teeth) on quill (Figure 8, Ref. No. 24) while extended below drill press head.
- Apply lubricant to rack and pinion gear (Figure 7, Ref. Nos. 8 and 17) 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, See Lubrication, page 6
	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
	3. Workpiece not supported or clamped properly	3. Support or clamp workpiece securely

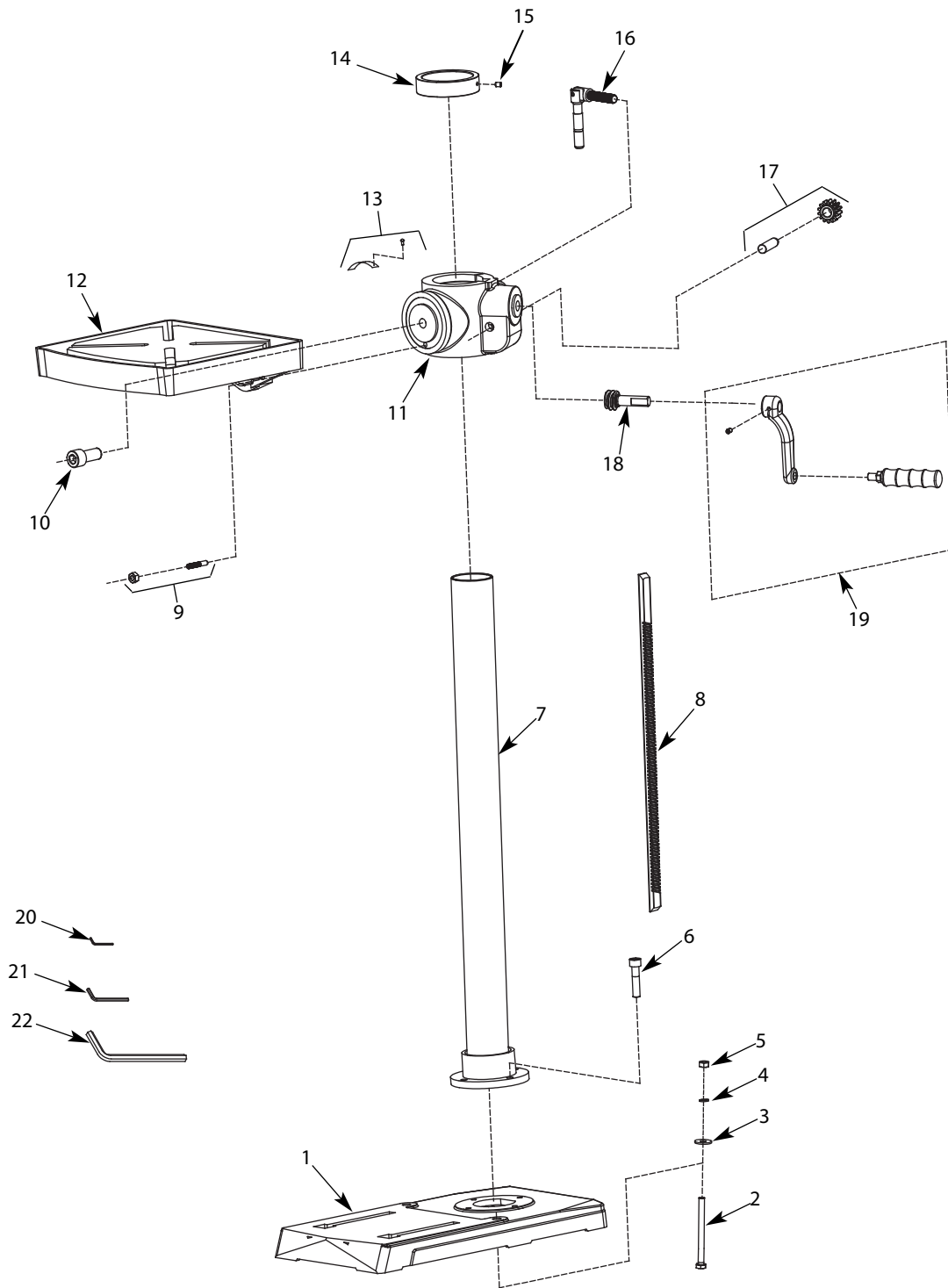


Figure 7 – Repair Parts Illustration for Base

REPLACEMENT PARTS LIST FOR BASE

KEY

NO.	DESCRIPTION	PART NO.	QTY.
1	Base	32505.00	1
2	8-1.25 x 125mm Hex head bolt	*	2
3	8mm Flat washer	*	2
4	8mm Lock washer	*	2
5	8-1.25mm Hex nut	*	2
6	8-1.25 x 30mm Socket head bolt	*	4
7	Column assembly	32506.00	1
8	Rack	32507.00	1
9	Taper pin and nut	32508.00	1
10	1/2-12 x 13/16" Socket head bolt	32648.00	1
11	Table bracket	32510.00	1
12	Table	32511.00	1
13	Scale assembly	32512.00	1
14	Rack retaining ring	32513.00	1
15	6-1.0 x 8mm Flat point set screw	32514.00	1
16	Locking handle	32515.00	1
17	Pinion gear and shaft	32516.00	1
18	Worm gear	32517.00	1
19	Table handle assembly	32518.00	1
20	3mm Hex wrench	00149.00	1
21	4mm Hex wrench	31695.00	1
22	6mm Hex wrench	02520.00	1
Δ	Operator's manual	35285.09	1
	Recommended Accessories		
Δ	Drill press guard	15023	1
Δ	4" Angle vise	11351	1
Δ	4" Drill press vise	12352	1
Δ	4" Standard vise	12403	1
Δ	69-Piece clamping kit	38950	1

* Standard hardware item available locally.

Δ Not Shown.

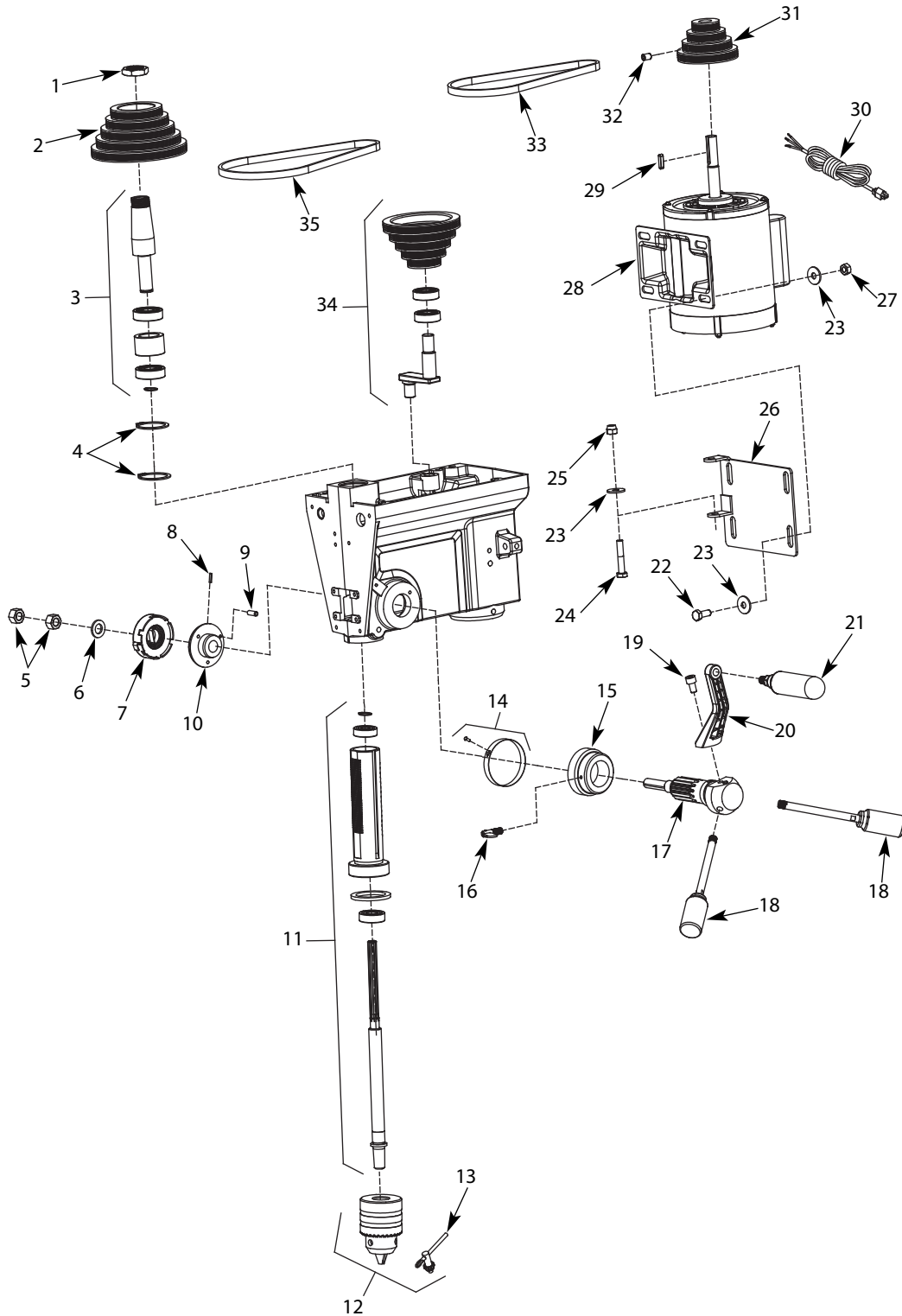


Figure 8 – Repair Parts Illustration for Spindle and Drive

REPLACEMENT PARTS LIST FOR SPINDLE AND DRIVE

KEY NO.	DESCRIPTION	PART NO.	QTY.
1	Spindle nut	32519.00	1
2	Spindle pulley	32520.00	1
3	Upper spindle assembly	32521.00	1
4	Circlip	32522.00	2
5	1/2"-20 Hex nut	*	2
6	12mm Flat washer	*	1
7	Cap cover with spring	32523.00	1
8	2.5 x 10mm Spring pin	04084.00	1
9	4-0.7 x 12mm Tap screw	32135.00	3
10	Spring seat	32524.00	1
11	Lower spindle and quill assembly	32525.00	1
12	JT33 Chuck with key	32526.00	1
13	Chuck key	32527.00	1
14	Depth scale with rivet	32528.00	1
15	Depth setting collar	32529.00	1
16	Locking screw	32530.00	1
17	Pinion assembly	32531.00	1
18	Quill feed handle	32532.00	2
19	8-1.25 x 15mm Socket head bolt	*	1
20	Quill feed crank arm	32533.00	1
21	Quill feed knob	32018.00	1
22	8-1.25 x 20mm Hex head bolt	*	4
23	8mm Flat washer	*	9
24	8-1.25 x 30mm Hex head bolt	*	1
25	8-1.25 Fiber hex nut	*	1
26	Motor mounting plate	32534.00	1
27	8-1.25mm Hex nut	*	4
28	Motor	32535.00	1
29	5 x 5 x 25mm Key	00975.00	1
30	Line cord	32536.00	1
31	Motor pulley	32537.00	1
32	8-1.25 x 12mm Set screw	*	1
33	Rear drive belt	32538.00	1
34	Center pulley assembly	32539.00	1
35	Front drive belt	32540.00	1
Δ	Motor start capacitor	32562.00	1

* Standard hardware item available locally.

Δ Not Shown.

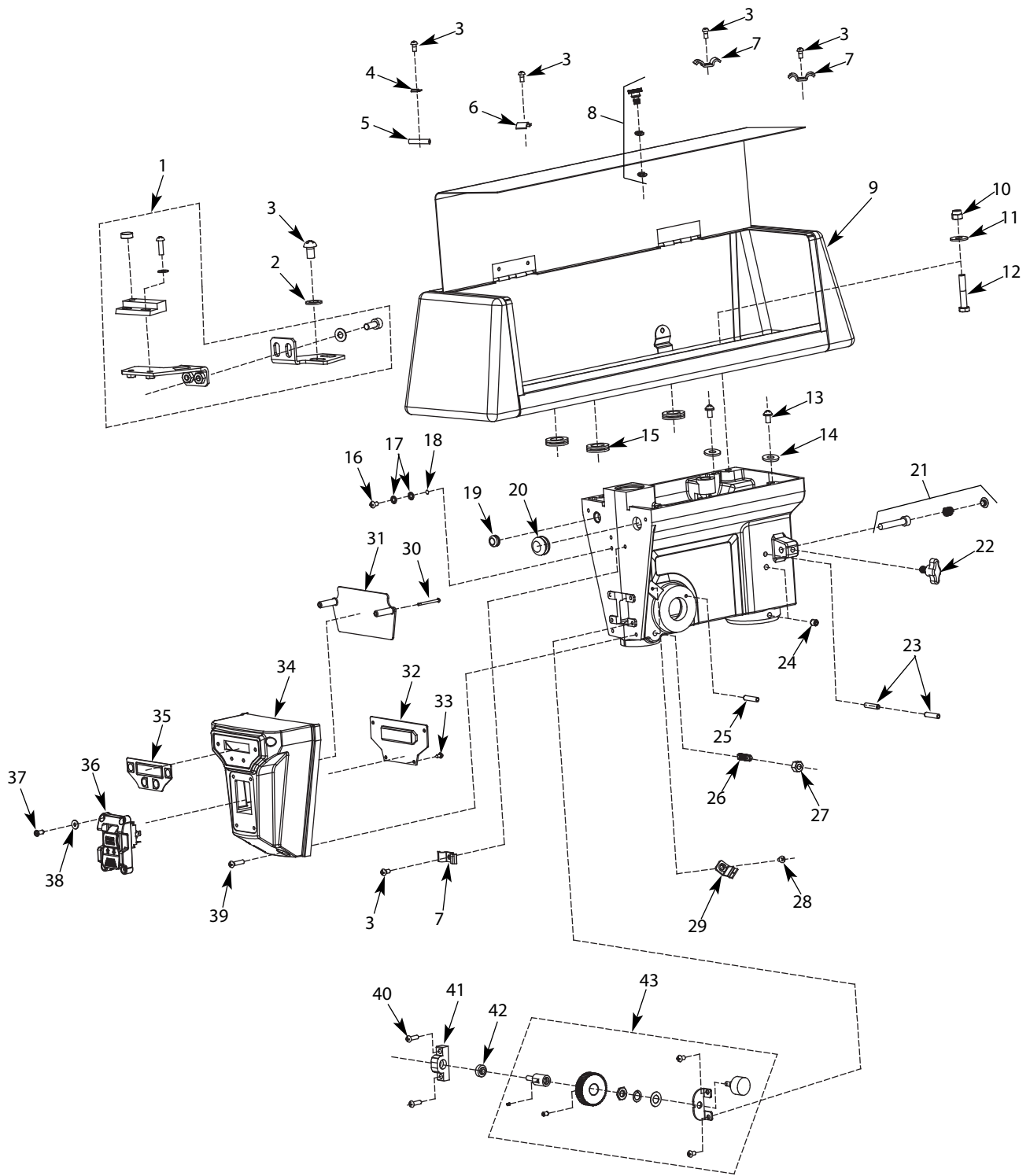


Figure 9 – Repair Parts Illustration for Head

REPLACEMENT PARTS LIST FOR HEAD

1	Speed sensor assembly	32543.00	1	23	6 x 25mm Spring pin	16109.00	2
2	5mm Flat washer	*	2	24	8-1.25 x 8mm Flat point set screw	32572.00	2
3	5-0.8 x 10mm Pan head screw	*	7	25	4 x 20mm Spring pin	02817.00	1
4	Clamp	32564.00	1	26	Threaded pin	32573.00	1
5	Seal	32565.00	1	27	8-1.25mm Hex nut	*	1
6	Plate	32566.00	1	28	4-0.7 x 7mm Pan head screw	*	1
7	Clamp	32567.00	3	29	Pointer	32548.00	1
8	Knob assembly	32544.00	1	30	3-0.5 x 35mm Pan head screw	*	2
9	Pulley housing	32545.00	1	31	Circuit board shield	32574.00	1
10	8-1.25mm Fiber hex nut	*	1	32	Circuit board	32549.00	1
11	8mm Flat washer	*	1	33	3-0.5 x 5mm Pan head screw	*	2
12	8-1.25 x 45mm Hex head bolt	*	1	34	Switch housing	32550.00	1
13	6-1.0 x 12mm Pan head screw	*	4	35	Display cover	32551.00	1
14	Rubber washer	32568.00	4	36	Switch assembly	32552.00	1
15	Grommet	32569.00	3	37	3-0.5 x 15mm Pan head screw	*	4
16	5-0.8 x 8mm Pan head screw	*	2	38	3mm Flat washer	*	4
17	5mm Serrated washer	*	4	39	5-0.8 x 14mm Pan head screw	*	4
18	Ground label	†	1	40	5-0.8 x 16mm Pan head screw	*	2
19	Grommet	32570.00	1	41	Bracket	32575.00	1
20	Grommet	32571.00	1	42	Bearing	32576.00	1
21	Tension rod assembly	32546.00	1	43	Potentiometer shaft assembly	32553.00	1
22	Knob	32547.00	1				

* Standard hardware item available locally.

† Not available as repair part.

WARRANTY

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 it was intended. The warranty does not cover expendable and/or wear parts (i.e. v-belts, coated screws, abrasives), 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 one year parts and labor, unless otherwise noted below beginning from the date of delivery to the original user. The Palmgren products carry the following warranties on parts with a 1 year warranty on labor:

- USA Machine vises – Lifetime
- IQ Machine vises – Lifetime
- Bench vises – Lifetime
- Positioning tables – Lifetime
- Bench grinders & buffers – 3 years
- Tapping machines – 2 years
- Drilling machines – 2 years
- Finishing machines – 2 years
- Band saws – 2 years
- Work stands – 2 years
- Arbor presses – 2 years
- Metal forming equipment – 2 years
- Accessories – 1 year

The obligation of 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 deficient. 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 Palmgren for any deficiency in its products. Under no circumstances is Palmgren liable for any direct, indirect, incidental, special or consequential damages including lost profits in any way related to the use or inability to use our products. This warranty gives you specific legal rights which may vary from state to state.

SERVICE & REPAIR

1. If a Palmgren product requires a repair or warranty service **DO NOT** return the product to the place of purchase.
2. All warranty related work must be evaluated and approved by Palmgren.
3. Prior to returning any item the user must obtain factory approval and a valid RGA number.
4. For instructions and RGA number call toll free (800) 621-6145.

