

# PALMGREN

## 12" BENCH GRINDER WITH STAND



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

**DESCRIPTION**

Palmgren 12" Bench Grinder is equipped with a totally enclosed ball bearing motor. Armature assembly is dynamically balanced for smooth operation. Motor housing is compact so long pieces of work can press against both wheels without touching the motor frame. Removable wheel guards allow for easy changing of wheels. Two-way tool rests are adjustable for wheel wear and angle grinding. Grinder comes complete with magnetic push-button switch, one 36 grit and one 60 grit grinding wheel, spark guards, safety eye-shields, dust collection hose and stand.

**UNPACKING**

Check for shipping damage. If damage has occurred, a claim must be filed with the carrier immediately. Check for completeness. Immediately report missing parts to dealer.

To be certain the grinding wheels have not been damaged in shipment, strike the edges slightly with a metal object. A ringing sound indicates a good wheel, but a dull noise may signal a fracture.

**WARNING:** If you suspect a wheel of being fractured, replace it immediately. Fractured wheels may shatter, causing serious injury.

**SPECIFICATIONS**

Horsepower .....	.2
Voltage .....	.240
Amperes .....	.10
Hertz .....	.60
Phase .....	.Single
RPM .....	.1800
Rotation (viewed from left side) .....	.Clockwise
Wheel diameter .....	.12"
Wheel bore .....	.1 1/4"
Wheel face width .....	.2"
Shipping weight .....	.280 lbs

**SAFETY RULES**

**WARNING:** For your own safety, read operating instructions manual before operating tool.

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

**WARNING:** Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known 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.

**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 complying 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 operation is dusty.
- Be alert and think clearly. Never operate power tools when tired, intoxicated or when taking medications that cause drowsiness.

**PREPARE WORK AREA 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 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 the 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.
- Consult manual for specific maintaining and adjusting procedures.
- Keep tool clean for safest operation.
- Remove adjusting tools. Form habit of checking to see that adjusting tools are removed before turning machine on.
- 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 of moving parts, breakage of parts, mounting and any other condition that may affect a tool's operation.
- A guard or other part that is damaged should be properly repaired or replaced. Do not perform makeshift repairs. (Use the parts list to order replacement parts.)

**KNOW HOW TO USE TOOL**

- Use right tool for job. Do not force tool or attachment to do a job for which it was not designed.
- Disconnect tool from power when changing accessories such as grinding wheels, buffing wheels and the like.
- Avoid accidental start-up. Make sure that the switch is in the off position before plugging in.
- Do not force tool. It will work most efficiently at the rate for which it was designed.
- Keep hands away from moving parts and grinding surfaces.
- 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 over.
- Know your tool. Learn the tool's operation, application and specific limitations.
- Use recommended accessories. Understand and obey all safety instructions supplied with accessories. The use of improper accessories may cause risk of injury to persons.

**SAFETY RULES (CONTINUED)**

- Do not over tighten wheel nut. Replace cracked wheel immediately. Use only flanges supplied with the grinder.
- Adjust distance between wheel and tool rest to maintain 1/16" or less gap.
- Handle the workpiece correctly. Whenever possible, use tool rest to support workpiece during grinding operation. Turn tool off if it jams.
- Always use guards and eyeshields.
- Clean grinding dust from beneath tool frequently.

**ASSEMBLY**

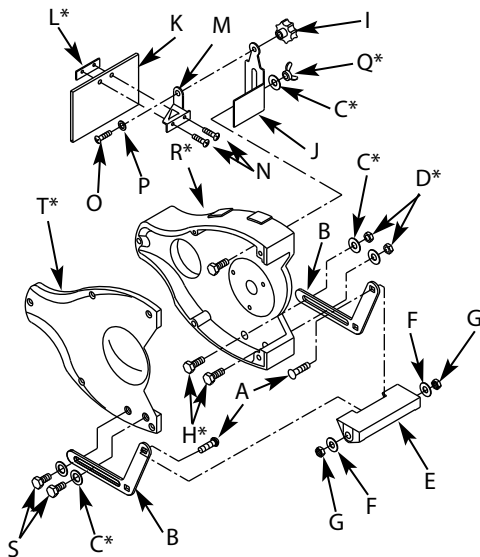
Parts to be fastened to the unit should be located and accounted for (See List and Figure 1).

**IMPORTANT:** Do not attempt assembly if parts are missing. Use this manual to order replacement parts.

- A 5/16-18 x 1 1/4" Carriage bolt, 4 each
- B Tool rest bracket, 4 each
- C \*3/8" Flat washer, 8 each
- D \*3/8"-16 Hex nut, 2 each
- E Tool rest, 2 each
- F 5/16" Flat washer, 4 each
- G 5/16"-18 Hex nut, 4 each
- H \*3/8-16 x 1 1/4" Hex bolt, 6 each
- I Knob, 2 each
- J Spark guard, 2 each
- K Eyeshield, 2 each
- L \*Lower eyeshield bracket, 2 each
- M Upper eyeshield bracket, 2 each (left and right)
- N #10-24 x 3/8" Pan head screw, 4 each
- O 6-1.0 x 12mm Flange screw, 2 each
- P 6mm Flat washer, 2 each
- Q \*3/8"-16 Wing nut, 2 each
- R \*Wheel guard
- S 3/8-16 x 5/8" Hex bolt, 4 each
- T \*Wheel guard cover

Dust collector hose not shown.

**NOTE:** Parts marked with an asterisk (\*) are mounted to the grinder at the factory.



**Figure 1 – Left Tool Rest and Eyeshield Assembly**

**TOOL REST ASSEMBLY**

- Slide 5/16-18" carriage bolts (A) into square holes in tool rest brackets (B).
- Slide carriage bolts with brackets into holes on inside of tool rest (E) as shown in Figure 1. Slide 5/16" flat washers (F) and 5/16"-18 hex nuts (G) onto carriage bolts. Tighten nuts finger tight.
- Remove 3/8" hex nuts (D) and flat washers (C) from 3/8-16 x 1 1/4" hex bolts (H) mounted to bottom front of left wheel guard (R).
- Slide slot in tool rest bracket (right side) over 3/8" bolts. Replace flat washers and hex nuts. Position left side tool rest bracket over threaded holes in wheel guard cover and secure with 3/8" flat washers (C) and 3/8-16 x 5/8" hex bolts (S). Position tool rest so that distance between tool rest and grinding wheel is less than 1/16". Secure all nuts and bolts.
- Mount right tool rest in a similar manner.

**EYESHIELD ASSEMBLY**

- Remove 3/8" wing nut (Q) and 3/8" flat washer (C) from 3/8-16 x 1 1/4" hex bolt (H) mounted to top front of left wheel guard (R).
- Slide slot in spark guard (J) over hex bolt and replace washer and wing nut.
- Remove pan head screws (N) from eyeshield assembly. Mount left upper eyeshield bracket (M) to eyeshield using pan head screws and lower eyeshield bracket.

**NOTE:** Left upper eyeshield bracket is stamped "L" for identification.

- Slide 6-1.0 x 12mm flange screw (O) and 6mm flat washer (P) through left upper eyeshield bracket (M) and through hole at top of left spark guard (J) and secure with knob (I).
- Locate eyeshield in desired position for protecting operator and secure all nuts and bolts.
- Mount right eyeshield assembly in a similar manner.

**DUST COLLECTOR HOSE**

A dust collector hose has been provided with grinder. Slide hoses onto sides of T-connector and flanges. Mount the hose by sliding the flanges at each end over the exhaust ports on the left and right wheel guards. Attach 2 1/2" shop vacuum hose to collector hose. Be sure hose is mounted securely.

**DANGER:** Be sure to empty shop vacuum of all flammable material (flammable liquids and vapors, paper, wood, plastic, etc.) before connecting vacuum to grinder. Hot sparks from grinder may ignite flammable materials in shop vacuum.

**OPTIONAL LIGHTED EYESHIELD(MODEL 82903)**

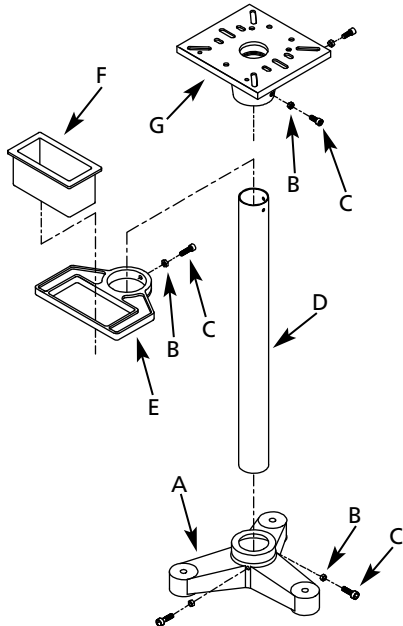
Position eyeshield bracket assembly over bosses provided on wheel guard. Bosses are tapped to receive two 1/4"-20 screws. Fasten bracket assembly to wheel guard with two screws provided with eyeshields.

**ASSEMBLY (CONTINUED)****STAND ASSEMBLY**

Parts to be assembled should be located and accounted for (See List and Figure 2).

**IMPORTANT:** Do not attempt assembly if parts are missing. Use this manual to order repair parts.

- A Base, 1 each
- B 10-1.5mm Hex nut, 5 each
- C 10-1.5 x 30mm Socket head bolt, 5 each
- D Column, 1 each
- E Water pot holder, 1 each
- F Water pot, 1 each
- G Top, 1 each



**Figure 2 – Stand Assembly**

- Slide column (D) into base (A); secure by tightening hex head bolts (C) against column. Tighten hex nuts (B) against base to secure bolts.
- Slide water pot holder (E) over column. Tighten hex head bolt (C) and nut (B) to secure holder.
- Slide top (G) over column and secure with bolts (C) and nuts (B).
- Slide water pot (F) into holder. Adjust pot holder height as required.
- Secure base to floor for maximum stability and safety. (Hardware not included.)

**MOUNT GRINDER**

Locate bag with following hardware:

- 8-1.25 x 45mm Hex head bolt, 4 each
- 8mm Flat washer, 8 each
- 8mm Lock washer, 4 each
- 8-1.25mm Hex nut, 4 each
- Place grinder on top of stand.
- Align mounting holes in grinder's base with diagonal slots on stand's top.
- Use 8-1.25 x 45mm hex head bolts with 8mm flat washers, 8mm lock washers and 8-1.25mm hex nuts to secure grinder to stand top.

**INSTALLATION****MOUNT GRINDER**

- Mount grinder to a solid horizontal surface (hardware not provided). If mounted to metal pedestal, align mounting holes with corresponding holes in pedestal. Insert a 1/4"-20 x 1 1/4" hex head bolt with flat washer through base of grinder. From bottom of pedestal, place a 1/4" flat washer and 1/4"-20 hex nut onto the bolt. Tighten only until space between grinder base and pedestal is 1/8" (base should be flush for 82101B). Using second nut on each bolt, jam tighten against the first to prevent loosening by vibration.
- To mount grinder to wooden bench top, use 1/4 x 1 1/4" wood screws with flat washers beneath heads. Tighten screws until space between grinder base and bench top is 1/8" (base should be flush for 82101B).

**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 in doubt as to whether the tool is properly grounded.
- This grinder is equipped with an approved 3-conductor cord rated at 300V.
- 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.
- The Palmgren 12" grinder is prewired for 240 volts, 60 Hz and single-phase power. A qualified electrician should wire a 240 volt, 20 AMP, 3-prong plug to grinder line cord.

**WARNING:** This work should be performed 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.
- Running the unit on voltages which are not within  $\pm 10\%$  of the specified voltage may cause overheating and motor burn-out.
- 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.

**INSTALLATION (CONTINUED)**

**EXTENSION CORD LENGTH**

Wire Size .....	A.W.G.
Up to 100 ft. ....	16
100 to 200 ft. ....	14
200 to 300 ft. ....	12

**NOTE:** Using extension cords over 300 ft. long is not recommended.

**ELECTRICAL CONNECTIONS**

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

**OPERATION**

**WARNING:** Always wear safety glasses complying with United States ANSI Z87.1 (shown on package) before commencing power tool operation.

- Keep a steady, moderate pressure on the work and keep it moving at an even pace for smooth grinding.
- Pressing too hard overheats the motor and prematurely wears down the grinding wheels.
- Note the original bevel angle on the item to be sharpened and try to maintain that angle. Sharpening a cutting edge requires removing burrs from edge.

- Deburring edge is done best by using the grinder to pull burr from edge across the bevel angle.
- The grinding wheel should rotate into object being sharpened.
- Dip work into a coolant regularly to prevent overheating. Overheating can weaken metals.

**MAINTENANCE**

- As wheels wear, tool rests should be positioned closer to the face of the wheels.
- The gap between the wheel and the tool rest should not be greater than 1/16". When the wheels are worn to the extent that the 1/16" maximum gap cannot be maintained, the wheels should be replaced.
- Replacement wheels must have a minimum rated speed of 1800 RPM.
- Maximum wheel diameter is 12".
- To loosen nuts holding the wheels, disconnect power and push a wood wedge between the tool rest and the wheel to keep the shaft from turning. The threads on the right side of the grinder (facing unit) are right hand; threads on the left side are left hand. Tighten nuts securely before operating the grinder.
- For grinding efficiency, wheels should be dressed periodically, especially if they become clogged from grinding soft metals.

## TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Grinder won't start	<ol style="list-style-type: none"> <li>1. Blown line fuse or tripped circuit breaker</li> <li>2. Low line voltage</li> <li>3. Material wedged between wheel and guard</li> <li>4. Defective switch</li> <li>5. Defective, blown capacitor</li> </ol>	<ol style="list-style-type: none"> <li>1. If fuse is blown, replace with fuse of proper size. If breaker tripped, reset it</li> <li>2. Check power supply for voltage and correct as needed</li> <li>3. Turn grinder off and remove material</li> <li>4. Replace switch</li> <li>5. Replace capacitor</li> </ol>
Excessive vibration	<ol style="list-style-type: none"> <li>1. Improper mounting of grinder or accessories</li> <li>2. Grinding wheel out of balance</li> <li>3. Improper wheel mounting</li> </ol>	<ol style="list-style-type: none"> <li>1. Remount</li> <li>2. Dress wheels or replace wheels</li> <li>3. Remount wheels, but rotate one wheel 90° with respect to its previous position. Other wheel should remain in its original position</li> </ol>
Motor overheating	<ol style="list-style-type: none"> <li>1. Excess pressure required to grind material</li> <li>2. Grinding on side of wheel</li> <li>3. Motor not turning freely (without power)</li> </ol>	<ol style="list-style-type: none"> <li>1. Dress wheel or replace wheel with one of proper grit</li> <li>2. Grind only on face of wheel</li> <li>3. Clean around wheels and shaft and/or replace bearings</li> </ol>
Fuses are being blown or circuit breakers are being tripped	<ol style="list-style-type: none"> <li>1. Overloading due to binding</li> <li>2. Defective plug</li> <li>3. Defective cord</li> <li>4. Defective switch</li> <li>5. Motor wired for different line voltage</li> <li>6. Faulty internal wiring</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean around wheels and shaft and/or replace bearings</li> <li>2. Replace plug</li> <li>3. Replace cord</li> <li>4. Replace switch</li> <li>5. Rewire motor as per wiring diagram, (See Installation, Page 5)</li> <li>6. Contact your Palmgren distributor</li> </ol>

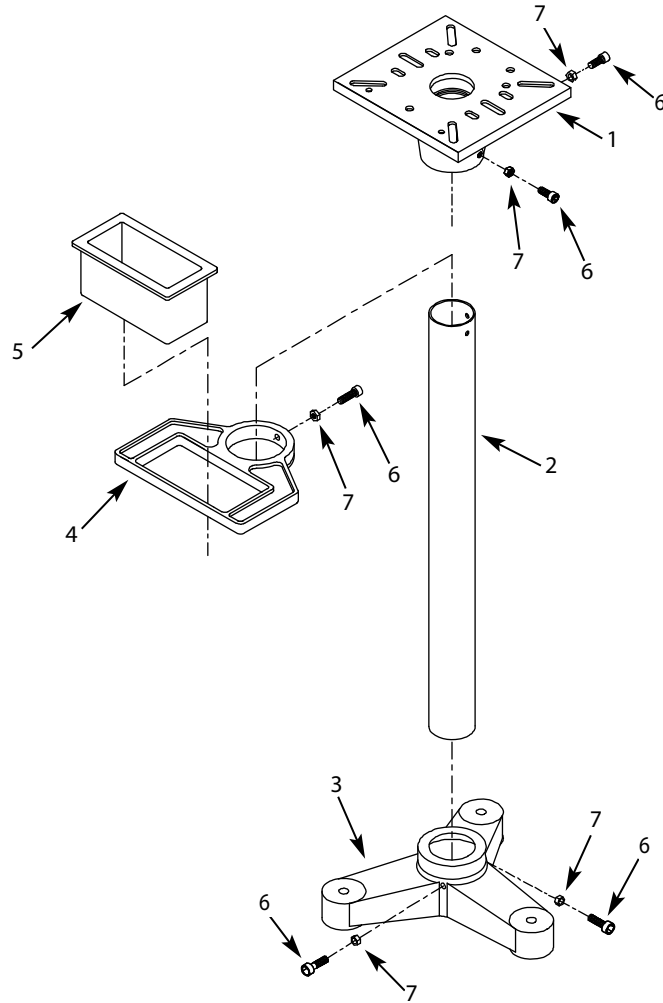


Figure 3 – Repair Parts Illustration for Bench Grinder Stand

**REPLACEMENT PARTS LIST FOR STAND**

Ref. No.	Description	Part Number	Qty.
1	Top	04889.01	1
2	Column	24899.00	1
3	Base	24898.00	1
4	Water pot holder	24954.00	1
5	Water pot	24955.00	1
6	10-1.5 x 30mm Socket head bolt	*	5
7	10-1.5mm Hex nut	*	5
Δ	8-1.25 x 45mm Hex head bolt	*	4
Δ	8mm Flat washer	*	8
Δ	8mm Lock washer	*	4
Δ	8-1.25mm Hex nut	*	4
Δ	Operator's Manual	32664.09	1

\* Standard hardware item available locally.

Δ Not shown.

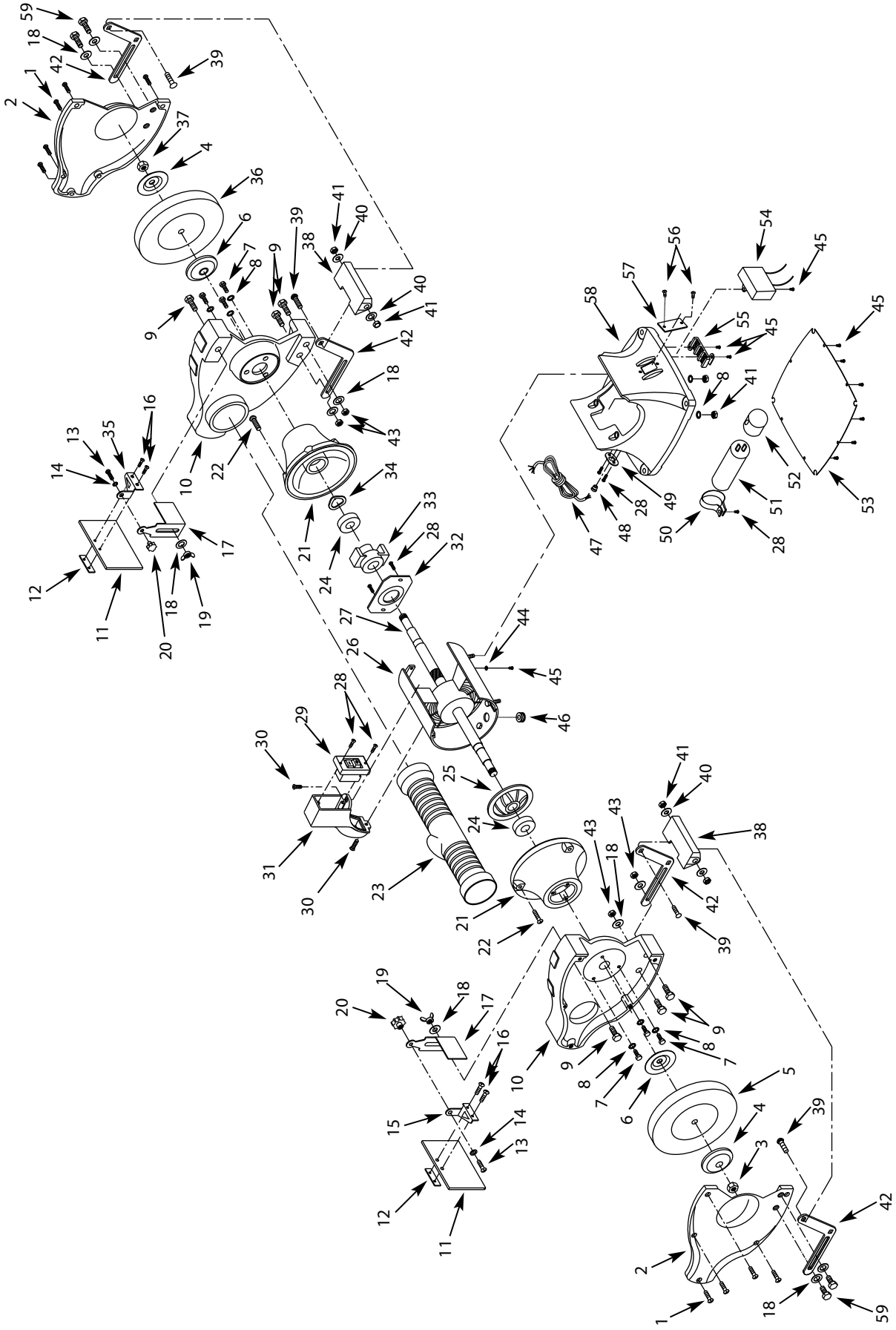


Figure 4 - Replacement Parts Illustration for 12" Bench Grinder



## REPLACEMENT PARTS LIST FOR 12" BENCH GRINDER

Ref. No.	Description	Part Number	Qty.	Ref. No.	Description	Part Number	Qty.
1	1/4-20 x 3/4" Pan head screw	*	10	32	Stationary switch	24885.00	1
2	Wheel guard cover	24861.00	2	33	Rotating switch	24886.00	1
3	1"-8 Hex nut (LH thread)	00111.00	1	34	Wavy washer	16620.00	1
4	Flange	24862.00	2	35	Upper eye shield bracket (right)	24887.00	1
5	Grinding wheel (36 coarse grit)	24863.00	1	36	Grinding wheel (60 med. grit)	24888.00	1
6	Inner wheel flange	24864.00	2	37	1"-8 Hex nut (RH thread)	00110.00	1
7	5/16-18 x 5/8" Hex head bolt	*	6	38	Tool rest	24871.00	2
8	5/16" Lock washer	*	4	39	5/16-18 x 1/4" Carriage bolt	*	4
9	3/8-16 x 1 1/4" hex head bolt	*	6	40	5/16" Flat washer	*	4
10	Wheel guard	24865.00	2	41	5/16"-18 Hex nut	*	8
11	Eye shield	24866.00	2	42	Tool rest upright	24870.00	4
12	Lower eye shield bracket	24867.00	2	43	3/8"-16 Hex nut	*	4
13	6-1.0 x 12mm Flange screw	16668.00	2	44	#10 Serrated washer	*	1
14	6mm Flat washer	*	2	45	#10-24 x 1/4" Flange Screw	*	12
15	Upper eye shield bracket (left)	24868.00	1	46	Grommet	16916.00	1
16	#10-24 x 3/8" Pan head screw	*	4	47	Line cord	24882.00	1
17	Spark guard (set of 2)	24869.00	1	48	Strain relief	24881.00	1
18	3/8" Flat washer	*	8	49	Strain relief plate	24880.00	1
19	3/8"-16 Wing nut	*	2	50	Capacitor clamp	16918.00	1
20	Knob	16714.00	2	51	Capacitor	08174.00	4
21	End shield	24872.00	2	52	Capacitor cap	24879.00	1
22	1/4-20 x 2" Flange screw	*	8	53	Base cover	16919.00	1
23	Dust collector hose	08070.02	1	54	Capacitor	24876.00	1
24	Bearing 6007ZZ	25313.00	2	55	Terminal block	24877.00	1
25	Motor fan	24874.00	1	56	Rivet	24878.00	2
26	Stator with housing	†	1	57	Cover	24875.00	1
27	Armature	†	1	58	Base	16917.00	1
28	#10-24 x 3/8" Flange screw	03207.00	7	59	5/8-16 x 5/8" Hex head bolt	*	4
29	Magnetic contactor	24883.00	1	<b>Recommended Accessories</b>			
30	1/4-20x5/8" Flat Head Screw	*	2	Δ	Lighted eyeshield	82903	1
31	Magnetic switch holder	24884.00	1	Δ	Grinding wheel dresser	82902	1

Δ Not Shown.

\* Standard hardware item available locally.

† Not available as a repair part.



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**NOTES**

## 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 framing 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.

