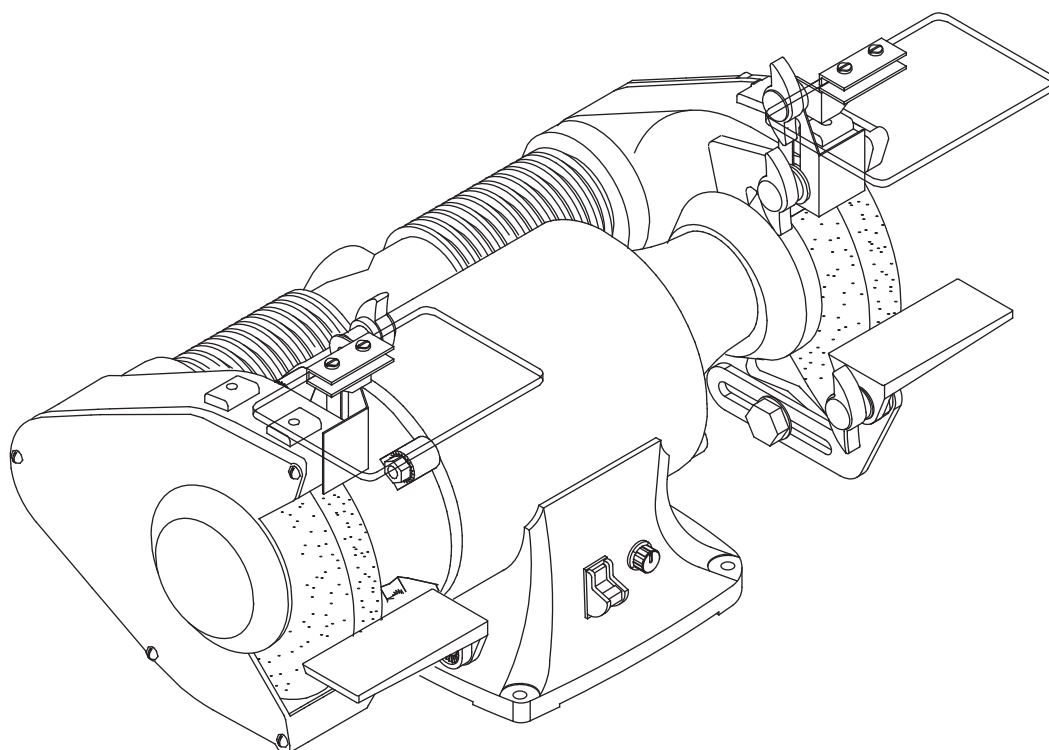


# PALMGREN

## 8" & 10" BENCH GRINDER



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

**DESCRIPTION**

Palmgren Bench Grinders are 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. Grinders come complete with spark guards, safety eyeshields and dust collection hose.

**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**

**82082A-8" Bench Grinder**

Horsepower .....	3/4
Voltage .....	.220/440
Amperes .....	.2.2/1.1
Hertz .....	.60
Phase .....	.Three
RPM .....	.3450
Rotation (viewed from left side) .....	.Clockwise
Wheel diameter .....	.8"
Wheel bore .....	.5/8"

**82102A-10" Bench Grinder**

Horsepower .....	.1
Voltage .....	.220/440
Amperes .....	.3.3/1.65
Hertz .....	.60
Phase .....	.Three
RPM .....	.1725
Rotation (viewed from left side) .....	.Clockwise
Wheel diameter .....	.10"
Wheel bore .....	.1"

**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.
- 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  $\frac{1}{16}$ " 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  $\frac{3}{8}$ -16 x  $\frac{3}{4}$ " Hex head bolt, 2 each
- B  $\frac{3}{8}$ " Flat washer, 4 each
- C Tool rest bracket (left & right), 2 each
- D Tool rest (left & right), 2 each
- E  $\frac{5}{16}$ " Flat washer, 2 each
- F  $\frac{5}{16}$ -18 x 1" Knob, 2 each
- G #10-24 x  $\frac{3}{8}$ " Pan head screw, 4 each
- H Upper eyeshield bracket (left & right), 2 each
- I Eyeshield, 2 each
- J Lower eyeshield bracket, 2 each
- K  $\frac{1}{4}$ -20 x  $\frac{1}{2}$ " Knob, 2 each
- L Spark guard (left & right), 2 each
- M  $\frac{3}{8}$ -16 x  $\frac{1}{2}$ " Knob, 2 each

Dust collector hose not shown.

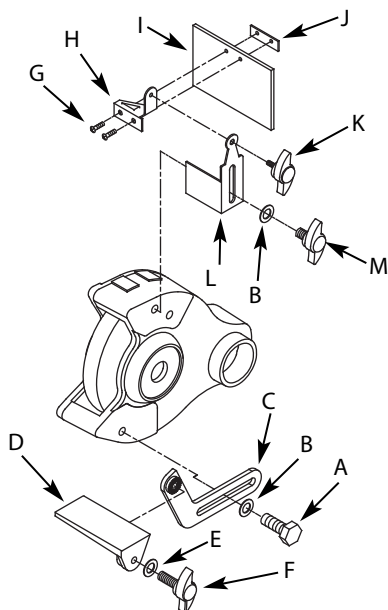


Figure 1 –Left Tool Rest and Eyeshield Assembly

## TOOL REST ASSEMBLY

- Place tool rest (D) over tool rest bracket and secure in position with  $\frac{5}{16}$ -18 x 1" knob (F).
- Attach tool rest bracket to the bottom of the left wheel guard using one  $\frac{3}{8}$ -16 x  $\frac{3}{4}$ " hex head bolt (A) and one  $\frac{3}{8}$ " flat washer (B). Make sure that the slot of the bracket is located over the raised boss on the guard. Tight bolts finger tight.
- Position tool rest so that distance between tool rest and grinding wheel is less than  $\frac{1}{16}$ ". Reposition angle of tool rest if necessary. Secure all knobs and bolts.
- Mount right tool rest in a similar manner.

## EYESHIELD ASSEMBLY

- Attach spark guard (L) to left wheel guard using  $\frac{3}{8}$ -16 x  $\frac{1}{2}$ " knob (M) and  $\frac{3}{8}$ " flat washer (B).
- Mount left upper eyeshield bracket (H) to eyeshield (I) using two #10-24 x  $\frac{3}{8}$ " pan head screws (G) and lower eyeshield bracket.

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

- Slide  $\frac{1}{4}$ -20 x  $\frac{1}{2}$ " knob (K) through hole at top of left spark guard (L) into upper upper eyeshield bracket (H) and secure in position.
- Locate eyeshield in desired position for protecting operator and secure all knobs 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  $2\frac{1}{2}$ " 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.

## 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  $\frac{1}{4}$ -20 x  $1\frac{1}{4}$ " hex head bolt with flat washer through base of grinder. From bottom of pedestal, place a  $\frac{1}{4}$ " flat washer and  $\frac{1}{4}$ -20 hex nut onto the bolt. Tighten only until space between grinder base and pedestal is  $\frac{1}{8}$ " (base should be flush for 82102A). Using second nut on each bolt, jam tighten against the first to prevent loosening by vibration.
- To mount grinder to wooden bench top, use  $\frac{1}{4}$  x  $1\frac{1}{4}$ " wood screws with flat washers beneath heads. Tighten screws until space between grinder base and bench top is  $\frac{1}{8}$ " (base should be flush for 82102A).

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

**INSTALLATION (CONTINUED)**

- Green (or green and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal.
- Many cover plate screws, water pipes and outlet boxes are not properly grounded. To ensure a proper ground, the 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.
- Running the unit on voltages which are not within ±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.
- If the extension cord is worn, cut or damaged in any way, replace it immediately.

**EXTENSION CORD LENGTH for Model 82082A**

Wire Size .....	A.W.G.
Up to 25 ft.....	18

**NOTE:** Using extension cords over 25 ft. long is not recommended.

**EXTENSION CORD LENGTH for Model 82102A**

Wire Size .....	A.W.G.
Up to 25 ft.....	16

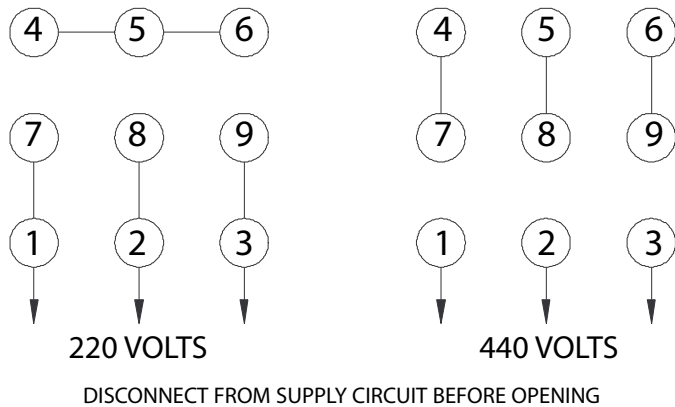
**NOTE:** Using extension cords over 25 ft. long is not recommended.

**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.

- Grinder is prewired at the factory for 220 volt, 3-phase operation. See Figure 2 for wiring diagram.
- Grinder can be wired for 440 volt, 3-phase operation. See Figure 2 for wiring diagram for 440 volt.
- Test grinder to be sure grinding wheels rotate downward toward tool rests. Switch any two leads to reverse rotation if needed.

**VOLTAGE CHANGE DIAGRAM**



**Figure 2 – Wiring Diagram**

**OPERATION**

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

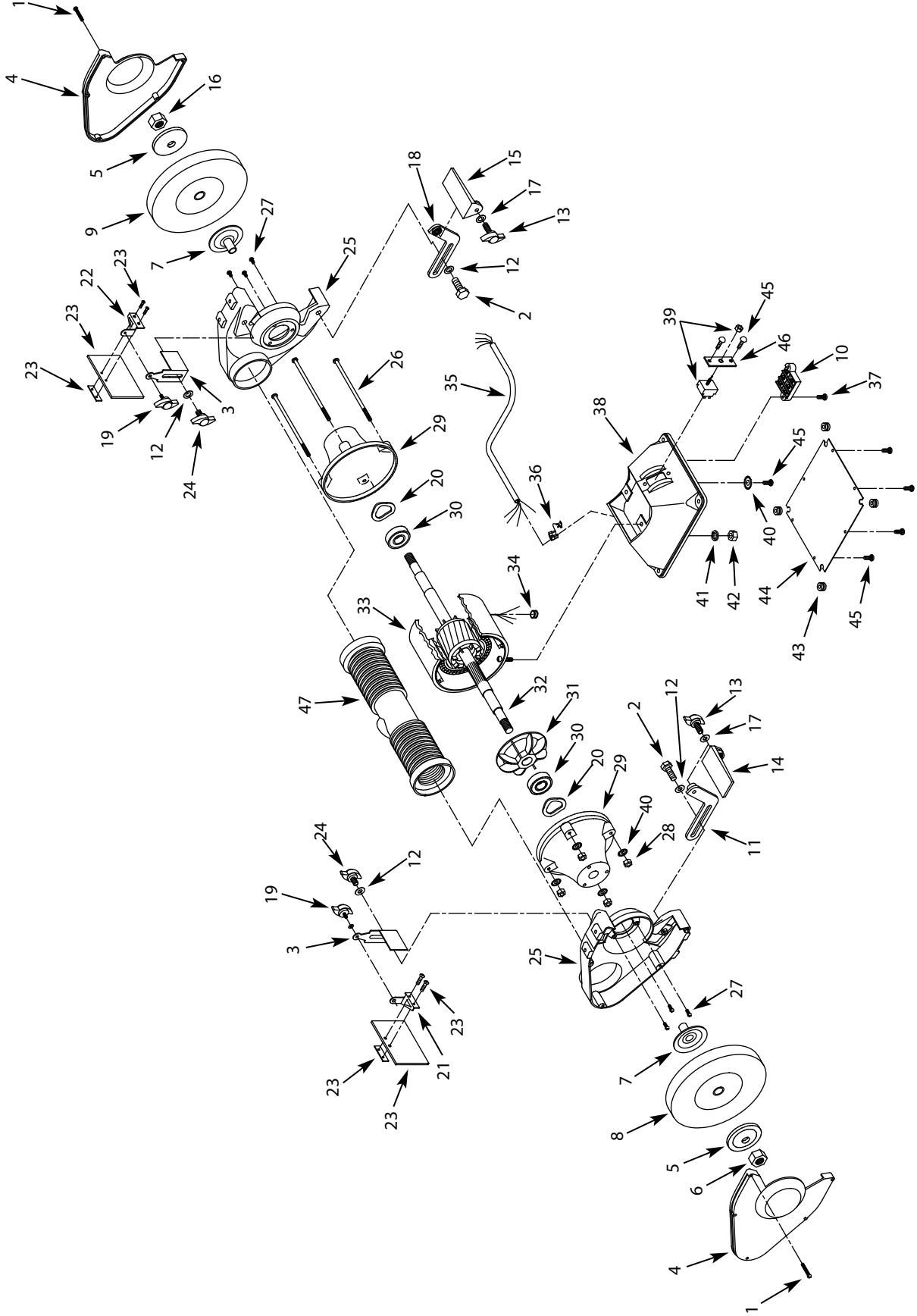
- Keep a steady, moderate pressure on the work and keep it moving at an even pace for smooth grinding.
- Pressing too hard overheats the motor and prematurely wears down the grinding wheels.
- Note the original bevel angle on the item to be sharpened and try to maintain that angle. Sharpening a cutting 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 should have a minimum rated speed of at least 3600 RPM for 82082A and 1800 RPM for 82102A.
- Maximum wheel diameter for 82082A is 8" and 10" for 82102A.
- 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> </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> </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 4)</li> <li>6. Contact your Palmgren distributor</li> </ol>
Motor does not develop proper torque	<ol style="list-style-type: none"> <li>1. Motor wired for different line voltage</li> </ol>	<ol style="list-style-type: none"> <li>1. Rewire motor as per wiring diagram, (See Installation, Page 4)</li> </ol>



## REPLACEMENT PARTS LIST FOR 8" BENCH GRINDER

Ref. No.	Description	Part Number	Qty.	Ref. No.	Description	Part Number	Qty.
1	#10-24 x 1/2" Pan head screw	*	10	26	5-0.8 x 228mm Flange screw	16654.00	4
2	3/8-16 x 3/4" Hex head bolt	*	2	27	1/4-20 x 1/2" Flange screw	-	6
3	Spark guard (set of 2)	25815.00	1	28	5-0.8mm Hex nut	*	4
4	Wheel guard cover	24496.02	2	29	Endshield	16627.02	2
5	Flange	24497.00	2	30	Bearing 6204ZZ	00989.00	2
6	5/8"-11 Hex nut (LH thread)	00088.00	1	31	Motor fan	01620.00	1
7	Inner wheel flange	24498.00	2	32	Armature	†	1
8	Grinding wheel (36 coarse grit)	02038.00	1	33	Stator with housing	†	1
9	Grinding wheel (60 med. grit)	02037.00	1	34	Grommet	01066.00	2
10	Terminal block	16899.00	1	35	Line cord	08098.00	1
11	Bracket (left)	31447.00	1	36	Strain relief	04055.00	1
12	3/8" Flat washer	*	4	37	#10-24 x 1/2" Flange screw	03211.00	1
13	5/16-18 x 1" Knob	25812.00	2	38	Base	24475.02	1
14	Tool rest (left)	25813.00	1	39	Switch	00100.00	1
15	Tool rest (right)	25825.00	1	40	#10 Serrated washer	*	5
16	5/8"-11 Hex nut (RH thread)	00087.00	1	41	1/4" Lock washer	*	2
17	5/16" Flat washer	*	2	42	1/4"-20 Hex nut	*	2
18	Bracket (right)	31448.00	1	43	Base bumper	23991.00	4
19	1/4-20 x 1/2" Knob	25816.00	2	44	Base cover	24500.00	1
20	Wavy washer	16640.00	2	45	#10-24 x 1/4" Flange screw	03210.00	9
21	Upper eyeshield bracket (left)	25177.00	1	46	Switch plate	08099.00	1
22	Upper eyeshield bracket (right)	25188.00	1	47	Dust collector hose	08070.00	1
23	Eyeshield kit	32290.00	1	Δ	Operators Manual	32647.09	1
24	3/8-16 x 1/2" Knob	25817.00	2		<b>Recommended Accessories</b>		
25	Wheel guard	26056.00	2	Δ	Cast iron Tool Stand	70101	1

Δ Not Shown.

† Not available as repair part.

\* Standard hardware item available locally.

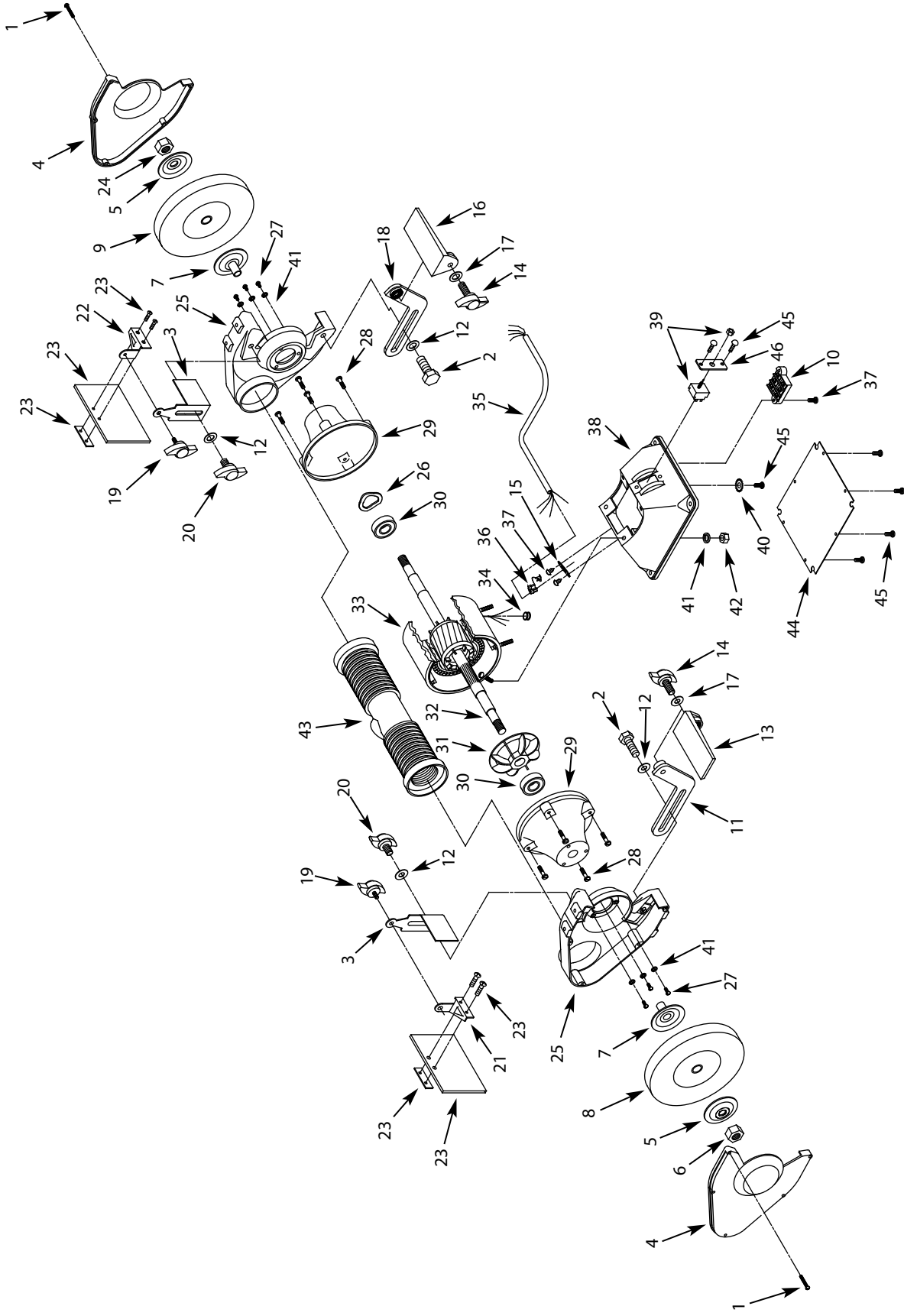


Figure 4 - Replacement Parts Illustration for 10" Bench Grinder



## REPLACEMENT PARTS LIST FOR 10" BENCH GRINDER

Ref. No.	Description	Part Number	Qty.	Ref. No.	Description	Part Number	Qty.
1	#10-24 x 3/4" Pan head screw	*	10	26	Wavy washer	16620.00	1
2	3/8-16 x 3/4" Hex head bolt	*	2	27	5/16-18 x 5/8" Hex head bolt	*	6
3	Spark guard (set of 2)	25815.00	1	28	1/4-20 x 2" Flange screw	*	8
4	Wheel guard cover	16911.02	2	29	Endshield	16913.02	2
5	Flange	24480.00	2	30	Bearing 6206ZZ	00297.00	2
6	1"-8 Hex nut (LH thread)	00111.00	1	31	Motor fan	01639.00	1
7	Inner wheel flange	24481.00	2	32	Armature	†	1
8	Grinding wheel (36 coarse grit)	02040.00	1	33	Stator with housing	†	1
9	Grinding wheel (60 med. grit)	02039.00	1	34	Grommet	16916.00	2
10	Terminal block	16899.00	1	35	Line cord	08186.00	1
11	Bracket (left)	26290.00	1	36	Strain relief	01601.00	1
12	3/8" Flat washer	*	4	37	#10-24 x 3/8" Flange screw	*	3
13	Tool rest (left)	25813.00	1	38	Base	16917.02	1
14	5/16-18 x 1" Knob	25812.00	2	39	Switch	00100.00	1
15	Strain relief plate	08172.00	1	40	#10 Serrated washer	*	1
16	Tool rest (right)	25825.00	1	41	5/16" Lock washer	*	10
17	5/16" Flat washer	*	2	42	5/16"-18 Hex nut	*	4
18	Bracket (right)	26291.00	1	43	Dust collector hose	08070.02	1
19	1/4-20 x 1/2" Knob	25816.00	2	44	Base cover	16919.00	1
20	3/8-16 x 1/2" Knob	25817.00	2	45	#10-24 x 1/4" Flange screw	*	9
21	Upper eyeshield bracket (left)	25177.00	1	46	Switch plate	08099.00	1
22	Upper eyeshield bracket (right)	25188.00	1	Δ	Operators Manual	32647.09	1
23	Eyeshield kit	32290.00	1		<b>Recommended Accessories</b>		
24	1"-8 Hex nut (RH thread)	00110.00	1	Δ	Cast iron Tool Stand	70101	1
25	Wheel guard	26057.00	2				

Δ Not Shown.

† Not available as repair part.

\* Standard hardware item available locally.

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# NOTES

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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.

