



6IN. BENCH GRINDER WITH SANDING BELT OWNER'S MANUAL



WARNING:

Read carefully and understand all **ASSEMBLY AND OPERATION INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Item# 32227

Thank you very much for choosing an Ironton product! For future reference, please complete the owner's record below:

Model: _____ Purchase Date: _____

Save the receipt, warranty and these instructions. It is important that you read the entire manual to become familiar with this product before you begin using it.

This machine is designed for certain applications only. The distributor cannot be responsible for issues arising from modification. We strongly recommend this machine not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the machine until you have first contacted the distributor to determine if it can or should be performed on the product.

For technical questions please call **1-800-222-5381**.

INTENDED USE:

This Bench Grinder with sanding belt is ideal for use in:

- Sharpening chisels, axes and other woodcutting tools
- Repairing tips on screwdrivers and drill bits
- Removing excess metal burrs
- Smoothing metal surfaces
- Finishing sharp edges and metal surfaces using a fine grit wheel
- Cleaning metal surfaces using a wire brush
- Aggressive metal stock removal using a coarse grit wheel
- Buffing and polishing using a cloth wheel

TECHNICAL SPECIFICATIONS

Item:	Description
• Rated Voltage:	120 Volts, 60Hz
• Rated Input Power:	1/3 HP, 2.5 Amps
• Delivers:	3450 RPM
• Wheel Size:	6 x 3/4in. with 1/2in. arbor
• Wheel Grit:	60

GENERAL SAFETY RULES



WARNING: Read and understand all instructions. Failure to follow all instructions listed below may result in serious injury.



CAUTION: Do not allow persons to operate or assemble this Bench Grinder until they have read this manual and have developed a thorough understanding of how the Bench Grinder works.



WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur. It must be understood by the operator that common sense and caution are factors which cannot be built into

this product, but must be supplied by the operator.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY CONSIDERATIONS

WORK AREA

- **Keep work area clean**, free of clutter and well lit. Cluttered and dark work areas can cause accidents.
- **Do not use your tool where there is a risk of causing a fire or an explosion**; e.g. in the presence of flammable liquids, gases, or dust. Power tools create sparks, which may ignite the dust or fumes.
- **Keep children and bystanders** away while operating a power tool. Distractions can cause you to lose control, so visitors should remain at a safe distance from the work area.
- **Be aware of all power lines, electrical circuits**, water pipes and other mechanical hazards in your work area, particularly those hazards below the work surface hidden from the operator's view that may be unintentionally contacted and may cause personal harm or property damage.
- **Be alert of your surroundings**. Using power tools in confined work areas may put you dangerously close to cutting tools and rotating parts.

ELECTRICAL SAFETY

-  **WARNING:** Always check to ensure the power supply corresponds to the voltage on the rating plate.
- **Do not abuse the cord**. Never carry a portable tool by its power cord, or yank tool or extension cords from the receptacle. Keep power and extension cords away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords may cause a fire and increase the risk of electric shock.
- **Grounded tools** must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.
- **Double insulated tools** are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still doesn't fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.
- **Avoid body contact** with grounded surfaces such as pipes, radiators, ranges, and refrigerators. There is an increased risk of electric shock if your body is grounded.
- **When operating a power tool outside**, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock.
- **Extension Cord Use:**
- Use only 'Listed' extension cords. If used outdoors, they must be marked "For Outdoor Use." Those cords having 3-prong grounding type plugs and mating receptacles are to be used with grounded tools.
- Replace damaged or worn cords immediately.

- Check the nameplate rating of your tool. Use of improper size or gauge of extension cord may cause unsafe or inefficient operation of your tool. Be sure your extension cord is rated to allow sufficient current flow to the motor. For the proper wire gauge for your tool, see chart.

CHART FOR MINIMUM WIRE SIZE OF EXTENSION CORD:

Nameplate AMPS	CORD LENGTH			
	25ft.	50ft.	100ft.	150ft.
0-6	18 AWG	16 AWG	16 AWG	14 AWG
6-10	18 AWG	16 AWG	14 AWG	12 AWG
10-12	16 AWG	16 AWG	14 AWG	12 AWG
12-16	14 AWG	12 AWG	(NOT RECOMMENDED)	

If in doubt, use larger cord.

Be sure to check voltage requirements of the tool to your incoming power source.

- **Do not expose** power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- **Do not let your fingers** touch the terminals of plug when installing to or removing from the outlet.
- **Ground fault circuit interrupters.** If work area is not equipped with a permanently installed Ground Fault Circuit Interrupter outlet (GFCI), use a plug-in GFCI between power tool or extension cord and power receptacle.

PERSONAL SAFETY

- **Stay alert,** watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
- **Dress properly.** Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts. Air vents often cover moving parts and should be avoided.
- **Use safety apparel and equipment.** Use safety goggles or safety glasses with side shields which comply with current national standards, or when needed, a face shield. Use as dust mask in dusty work conditions. This applies to all persons in the work area. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate.
- **Do not overreach.** Keep proper footing and balance at all times.
- **Remove adjusting keys or wrenches** before connecting to the power supply or turning on the tool. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.

BENCH GRINDER USE AND CARE

Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools.

Do not force the tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.

Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.

Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.

Use clamps to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.

Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool may create a risk of injury when used on another tool.

Never leave tool running unattended.

Examine wheels for damage before operating, and replace if any damage is found.

Do not overtighten wheel nuts.

Use only wheel flanges furnished with bench grinder. Use of other flanges may cause damage or breakage to the wheel and result in injury to the operator.

Do not force work against the wheel. Excessive pressure may cause damage or breakage of the wheel, resulting in injury to the operator or bystanders.

Always use guards and eye shields.

Use wheel suitable for speed of bench grinder.

Do not operate bench grinder when flammable fumes are present. Sparks from the wheel or motor brush could ignite fumes.

Tighten grinding wheel lock nuts, securing bolts and all clamps and guards.

During each start-up, stand to one side of the grinder and switch it 'On'. Let the grinder operate at full speed for approximately one minute so that any undetected flaws or cracks will become apparent.

Always use proper guard with grinding wheel. A guard protects operator from broken wheel fragments.

Keep hands clear of grinding wheels.

Never reach behind or beneath the grinding wheels.

Unplug from power supply before adjusting or servicing. The grinding wheels continue to rotate after the tool is switched off. Always allow wheels to stop before adjusting or servicing.

When fitting a new grinding wheel, **always** check that the stated maximum RPM meets or exceeds that stated on the grinder. Also check the new wheel for damage, such as flaws or cracks. If the wheel appears satisfactory, fit it to the grinder.

When a new grinding wheel has been fitted, stand to one side of the grinder and switch it 'On'. Let the grinder operate at full speed for approximately one minute so that any undetected flaws or cracks will become apparent.

DO NOT attempt to cut anything with the grinding wheel.

When servicing a tool, use only identical replacement parts. Follow instructions in the maintenance section of this manual. Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.



WARNING! Replace cracked grinding wheels immediately.

Do not overtighten spindle nuts.

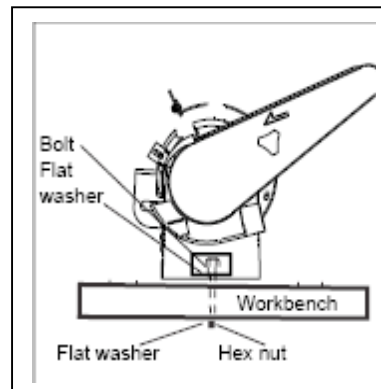
Adjust tool rests whenever necessary to maintain a distance of 1/8in. from the grinding wheel.

ASSEMBLY:

MOUNTING GRINDER ON WORKBENCH

CAUTION: Bench grinders vibrate. Grinder movement during high speed rotation may cause injury or damage to the workpiece. Mount the grinder securely to a sturdy workbench or grinding stand.

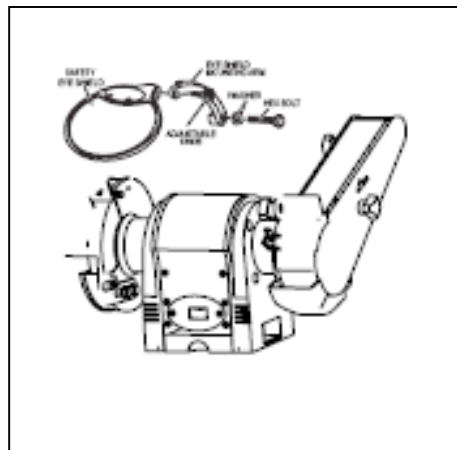
1. Position the grinder on the workbench.
2. Mark the workbench through the two mounting holes located in the grinder base.
3. Drill holes in the workbench at the marks.
4. Using two long bolts, washers, lock washers, and nuts as shown (not supplied), secure the grinder to the workbench.



EYE SHIELD INSTALLATION

The eye shields must be installed before operating the bench grinder.

1. Mount the left and right shield rods to the inside of the wheel guards using hex bolts.
2. Once shield rods are firmly in place, slide the shield bracket onto the shield rod.
3. Tighten the carriage bolt leaving it loose enough to allow the safety shield to be raised and lowered easily.

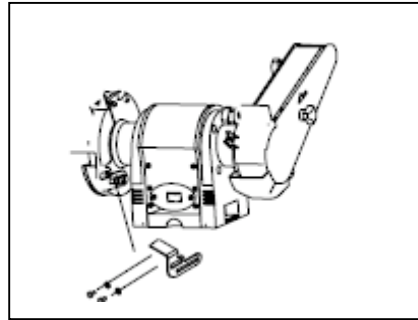


NOTE: The eye shield should move freely to adjust, but stay in place when the lock knob is tightened.

WORK REST

Then, mount the work rests to the work rest bracket by two hex screw and washer.

Before tightening the bolts, adjust the gap between the grinding wheel and the work rest to a maximum of 1/8 in. Tighten securely.

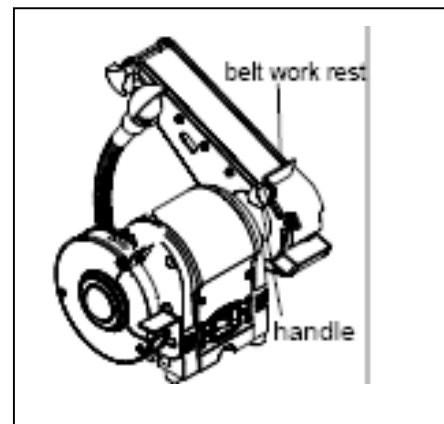


SANDING BELT WORK REST

The tool rest attaches to the inward side of the guard and provides a surface that must be used to support the workpiece during operation. Certain types of grinding/sanding may require jigs or accessories that will be used with the tool rests to assure the proper angle of the work piece against the belt. Failure to install and use the tool rest can lead to serious personal injury!

To install the tool rests:

1. Attach the tool rests perpendicular to the belt or wheel surface with the fasten handle
2. To adjust the angle of the sanding belt tool rest, use a square or a protractor to set the angle of the tool rest at 90° in relation to the sanding belt.
3. Adjust both tool rests approximately 1/16in. - 1/8in. from the grinding wheel and the sanding belt and tighten the knob bolts



OPERATION:

Test Run

Once mounting is complete and adjustments are done to your satisfaction, you are ready to test the machine.

To test run the grinder/sander:

1. Plug the machine into the power source.
2. Stand to the side of the grinding wheel and turn the grinder ON.

The machine should run smoothly with little or no vibration or rubbing noises.

Strange or unusual noises should be investigated and corrected before operating the machine further. If the machine seems okay, stay out of the line of rotation of the grinding wheel and let it run for 1-2 minutes to make sure the wheel is structurally sound.

If you cannot easily locate the source of an unusual noise or vibration, contact the distributor for help.

ON / OFF SWITCH

The rocker ON / OFF power switch is located on the front of the grinder.

1. Press the side marked ON to turn the grinder on.
2. Press the side marked OFF to turn the grinder off.

Before Grinding

The grinder is a safe tool when used properly. In addition to the safety instructions in this manual, the most important safety consideration is to use common sense at all times. What may be okay in one situation, may not be safe in another. Read the following statements to protect yourself before grinding:

- Make sure all guards and eye shields are in place.
- Stand to the side of the grinder when you turn it on and allow it to run for one full minute before EVERY use.
- Make sure that you have mounted your grinder securely and that you have performed the “Test Run” instructions in this manual.
- Remember that grinding often produces sparks.

DO NOT allow anyone to stand in the path of the sparks.

DO NOT grind near flammable liquids or gases.

- Wear the proper protective clothing. Remember that particles flying off of a grinding wheel will be traveling very fast—prepare for this. Wear safety glasses or a face shield, a dust mask, earplugs, a leather apron, and heavy leather boots.
- DO NOT lean into the workpiece in a manner that may cause your hands to move into the spinning wheel if the workpiece slips off.
- Concentrate on the task at hand. STOP grinding/sanding if there are distractions.
- DO NOT grind on the side of the wheel. Although side grinding is permissible for some wheel types, the Model is not designed for side grinding.

Operating Grinder

The grinder is designed for use with hard metals only. Soft metals and wood products should only be used on the sanding belt, as they will quickly load the grinding wheel surface and ruin its abrasive qualities.

To grind with the grinding wheel: 1. Fill the coolant tray 3/4 full with water.

2. With the machine plugged into power, stand to the side of the grinding wheel, and move the red switch to the ON position.

3. Allow the machine to run for at least 1 full minute to ensure that the grinding wheel is safe for use, then move to the front of the machine.

4. Grasp the workpiece tightly and properly support it on the tool rest.

5. Place the workpiece against the front surface of the wheel with moderate pressure, moving it back and forth in a steady, even motion. Note: Using too much pressure will slow the motor and may damage the wheel. Using too little pressure will make the workpiece bounce around and you will not make good contact with the wheel.

6. Regularly dip the workpiece into the coolant tray to cool it off. 7. When you are ready to stop the grinder, move the red switch to the OFF position. At this point, DO NOT continue grinding and DO NOT manually stop the grinding wheel with your workpiece!

Belt Tracking

“Tracking” the sanding belt means to center the belt on its rollers, so that it runs balanced and does not make contact with the sides of the belt cover.

To track the sanding belt:

1. DISCONNECT THE MACHINE FROM THE POWER SUPPLY!
2. Rotate the grinding wheel.
3. As you rotate the grinding wheel, watch how the sanding belt rides on the upper roller. If the belt is tracking properly, the sanding belt should be centered between the sides of the belt cover as shown

While spinning the wheel, turn the tracking control knob counterclockwise to make the belt move to the left, or turn the tracking control knob clockwise to make the belt move to the right.



Sanding

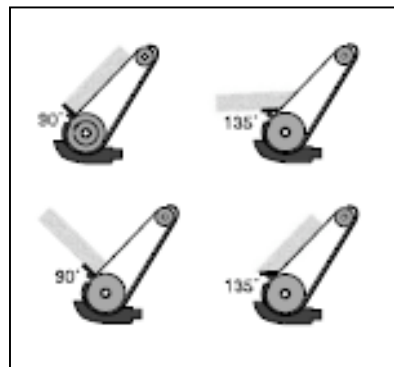
The 2in. sanding belt works great for non-ferrous metals and wood products. A wide variety of belts are also available for many types of materials and stages of finishing.

CAUTION

The sanding belt will remove large amounts of material quickly, including your skin. DO NOT touch the sanding belt and always position your hands so they will not slip into the belt or get caught in the belt.

To sand a workpiece:

1. Before starting the machine, adjust the angle of the tool rest so your workpiece can be properly supported and the area you wish to sand will be parallel with the sanding belt as illustrated



2. With the machine plugged into power, stand to the side of the grinding wheel, and move the red switch to the ON position.

3. Allow the machine to run for at least 1 full minute to make sure that the grinding wheel is not going to fly apart and injure you, then move to the front of the machine.
4. Grasp the workpiece tightly and properly support it on the tool rest.



5. Press the workpiece evenly against the sanding belt with light pressure
DO NOT press hard—let the rotation of the belt do the work

6. Remove your workpiece regularly to check the progress the sander has made. Remember—you can always remove more material but you cannot add it!

7. When you are finished sanding, move the red switch to the OFF position. DO NOT continue sanding and DO NOT manually stop the sanding belt with your workpiece!

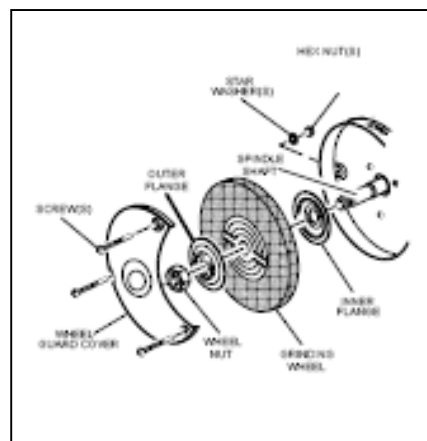


MAINTENANCE

WHEEL REPLACEMENT

If you must replace a grinding wheel, be sure to obtain one with a safe rated speed at least as high as the "no load speed" RPM marked on the data plate of the grinder.

To replace the grinding wheel, remove the wheel cover by loosening the screws. Loosen the wheel nut in a clockwise direction for the left side and a counterclockwise direction for the right side. Remove the outer flange and grinding wheel. To install a new grinding wheel, reverse the above procedure. Be sure the grinding wheel and outer flange are properly seated on the spindle shaft.

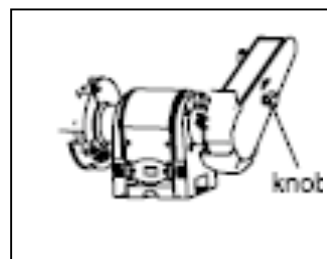


Replacing Belts

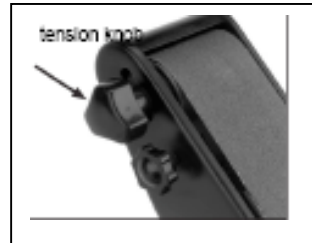
Many belts are available with different grit sizes.

To remove/replace a sanding belt:

1. DISCONNECT THE MACHINE FROM THE POWER SUPPLY!
2. Remove the star knob from the right-hand sanding belt cover as shown in the figure, and remove the cover.



3. Loosen the sanding belt tension knob, as shown in Figure



4. Pull the sanding belt tension knob down with one hand and work the sanding belt off the rollers with the other hand as shown in Figure .

5. Install the new sanding belt in the reverse order of removal and replace the belt cover.

6. Track the new sanding belt BEFORE turning the machine ON.



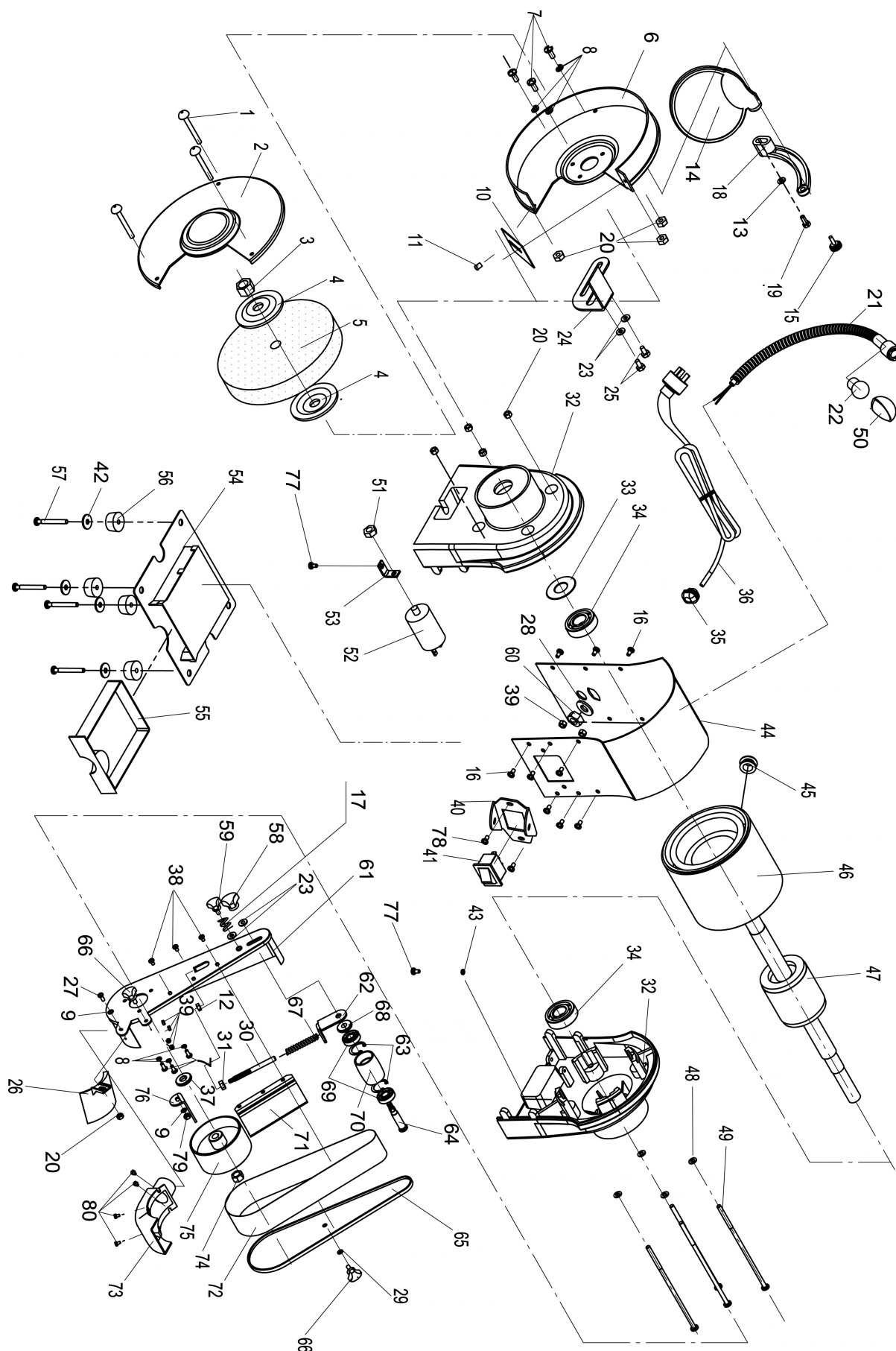
TROUBLESHOOTING

This section covers the most common problems encountered during operation and what to do about them. Do not make any adjustments until machine is unplugged and moving parts have come to a complete stop.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Motor will not start	1. Low voltage 2. Open circuit in motor or loose connections	1. Check power line for proper voltage 2. Inspect all lead connections on motor for loose or open connections

Motor will not start; fuses or circuit breakers blow	1. Short circuit in line cord or plug 2. Short circuit in motor or loose connections. 3. Incorrect fuses or circuit breakers in power line.	1. Inspect cord or plug for damaged insulation and shorted wires. 2. Inspect all connections on motor for loose or shorted terminals or worn insulation. 3. Install correct fuses or circuit breakers.
Motor overheats.	1. Motor overloaded	1. Reduce load on motor
Motor stalls (resulting in blown fuses or tripped circuit)	1. Short circuit in motor or loose connections 2. Low voltage. 3. Incorrect fuses or circuit breakers in power line. 4. Motor overloaded	1. Inspect connections on motor for loose or shorted terminals or worn insulation 2. Correct the low voltage conditions. 3. Install correct fuses or circuit breakers. 4. Reduce load on motor.
Machine slows when operating	1. Depth of cut too great	1. Slow down the rate of movement of the workpiece into wheel.
Wavy condition on surface of workpiece	1. Machine vibrating 2. Workpiece not being held firmly 3. Wheel face uneven. 4. Wheel is too hard	1. Make sure machine is securely mounted on a solid surface 2. Use a holding device to firmly retain the workpiece. 3. Dress the grinding wheel. 4. Use softer wheel, or reduce the feed rate.
Lines on surface of workpiece.	1. Impurity on wheel surface. 2. Workpiece not being held tightly	1. Dress the grinding wheel. 2. Use a holding device to firmly retain the workpiece.
Burning spots or cracks in the workpiece	1. Improper type of grinding wheel 2. Improper feed rate. 3. Coolant required	1. Try a wheel which is softer style or a coarser grit. 2. Slow down the rate of movement of the workpiece into wheel. 3. Add optional coolant system or introduce coolant by hand.
Wheel dulls quickly, grit falls off.	1. Depth of cut too great. 2. Wheel is soft 3. Wheel diameter too small 4. Bad wheel dress. 5. Defective wheel bonding	1. Slow down the rate of movement of the workpiece into wheel 2. Wheel too soft for the material being ground, select harder bond. 3. Replace the wheel 4. Dress the wheel 5. Consult manufacturer of grinding wheel
Wheel dogs and workpiece shows burn marks	1. Wheel is too hard. 2. Feed rate too slow. 3. Bad wheel dress. 4. Coolant required.	1. Wheel too hard for the material being ground, select softer bond. 2. Increase the rate of movement of the workpiece into wheel. 3. Dress the wheel. 4. Add optional coolant system or introduce coolant by hand

DIAGRAM & PARTS LIST



NO	Description	Specification	Qty
1	Philips Screw	M5 x45	3
2	Left Guard Cover		1
3	Hex Nut, type I	M12 Left	1
4	Wheel Flange		2
5	Wheel 150x20x 12.7	60#	1
6	Left Inner Guard		1
7	Philips Screw	M5x10	6
8	Standard Spring Washer	D5	6
9	Flat Washer	D5	2
10	Left Spark Deflector		1
11	Philips Screw	M5x8	1
12	Hex Nut, type I	M6	2
13	Flat Washer	D6	1
14	Left Eyeshield Assembly		1
15	Eyeshield Locking Knob		1
16	Philips Screw	4X8	12
17	Adjustable Spring	0.8X8X14	1
18	Left Eyeshield Mounting Rod		1
19	Hex Bolt	M6X30	1
20	Hex Flange Nut	M5	8
21	Lamp Pipe		1
22	Bulb		1
23	Flat Washer	D8	2
24	Left Tool Rest		1
25	Hex Bolt	M8x10	2
26	Safe Guard		1
27	Philips Screw	M5x12	1
28	Standard Spring Washer	D10	1
29	Big Flat Washer	D5	1
30	Adjustable Pole		1
31	Hex Nut	M8	1
32	End Bell		2
33	Wave Washer	D35	1
34	Ball Bearing	180202	2
35	Cord Clip		1
36	Cord & Plug		1
37	Initiative Shaft Cushion		1
38	Philips Screw+Flat Washer+Spring Washer Assy.	M5X10	3
39	Hex Nut	M4	6
40	Switch Plate		1
41	Switch		1

NO	Description	Specification	Qty
42	Flat Washer	D4	4
43	Outer Locked Washer	D4	1
44	Motor Housing		1
45	Cord Bushing		1
46	Stator		1
47	Rotor		1
48	Flat Washer	D5	4
49	Philips Screw	M5X131	4
50	Lamp Shade		1
51	Hex Nut, Type I	M8	1
52	Capacitor		1
53	Capacitor Support		1
54	Collant Tray Plate		1
55	Collant Tray		1
56	Rubber Foot		4
57	Philips Screw	M4X16	4
58	Lock Knob		1
59	Adjusting Knob		1
60	Nut	M10X1	1
61	Right Inner Guard		1
62	Tension Plate		1
63	Spring Washer	D32	2
64	Idler Shaft		1
65	Right Guard Cover		1
66	Lock Knob		2
67	Spring		1
68	Idler Shaft Cushion		1
69	Ball Bearing	180201	2
70	Idler Drum		1
71	Work Support		1
72	Belt	50X686 80#	1
73	Dust Port		1
74	Nut	M12	1
75	Initiative Wheel		1
76	Right Tool Rest		1
77	Philips Screw+Flat Washer+Spring Washer Assy.	M4X8	2
78	Philips Screw	M4X8	2
79	Hex Nut, type I	M5	1
80	Philips Screw+Flat Washer Assy.	M4X8	4

For replacement parts and technical questions, please call **1-800-222-5381**.



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, and
- 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, such as those dust masks that are specially designed to filter out microscopic particles.

WARRANTY

THIS WARRANTY FORM SHOULD BE RETAINED BY THE CUSTOMER AT ALL TIMES

PURCHASED FROM: _____

DATE PURCHASED: _____

The warranty is only made available by returning the tool to the place of purchase with a confirmed register receipt.

6-MONTH REPLACEMENT WARRANTY

Your IRONTON tool is covered by a 6-month replacement warranty from the date of purchase. Industrial or high-frequency use will void this warranty. The warranty covers faulty parts or workmanship.

WARNING

The following actions will result in the warranty being void.

- If the tool has been operated on a supply voltage other than that specified on the unit.
- If the tool shows signs of damage or defects caused by or resulting from abuse accidents or alterations.
- If the tool has been disassembled or tampered with in any way.

Warranty excludes consumable parts such as brushes, batteries, sanding pads, blades, discs and drill bits.



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Burnsville, Minnesota 55306
NorthernTool.com
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