Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference. 25b

2467E-B

Bauer™

CORDED ROTARY TOOL KIT



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59488

When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-800-444-3353 as soon as possible.

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⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

General Power Tool Safety Warnings

⚠WARNING

Read all safety warnings and all instructions.
Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool.

Work Area Safety

1. **Keep work area clean and well lit.** *Cluttered or dark areas invite accidents.*
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** *Power tools create sparks which may ignite the dust or fumes.*
3. **Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

Electrical Safety

1. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with grounded power tools.** *Unmodified plugs and matching outlets will reduce risk of electric shock.*
2. **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.*

3. **Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*

4. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** *Damaged or entangled cords increase the risk of electric shock.*

5. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*

6. **If operating a power tool in a damp location is unavoidable, use a Ground Fault Circuit Interrupter (GFCI) protected supply.** *Use of a GFCI reduces the risk of electric shock.*

Personal Safety

1. **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.*

2. **Use personal protective equipment. Always wear eye protection.** Protective *equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*

3. **Prevent unintentional starting. Ensure the Power Switch is in the off-position before connecting to power source, picking up or carrying the tool.** *Carrying power tools with your finger on the Power Switch or energizing power tools that have the Power Switch on invites accidents.*

4. **Remove any adjusting key or wrench before turning the power tool on.** *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*

5. **Do not overreach. Keep proper footing and balance at all times.** *This enables better control of the power tool in unexpected situations.*

6. **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*

7. **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** *Use of dust collection can reduce dust-related hazards.*

8. **Only use safety equipment that has been approved by an appropriate standards agency.** *Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.*

9. Avoid unintentional starting. Prepare to begin work before turning on the tool.

10. Do not leave the tool unattended when it is plugged into an electrical outlet. Turn off the tool, and unplug it from its electrical outlet before leaving.

11. This product is not a toy. Keep it out of reach of children.

12. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure. In addition, people with pacemakers should:
    • Avoid operating alone.
    • Do not use with Power Switch locked on.
    • Properly maintain and inspect to avoid electrical shock.
    • Properly ground power cord. Ground Fault Circuit Interrupter (GFCI) should also be implemented – it prevents sustained electrical shock.

13. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may 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.

Power Tool Use and Care

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

2. **Do not use the power tool if the Power Switch does not turn it on and off.** *Any power tool that cannot be controlled with the Power Switch is dangerous and must be repaired.*

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

4. **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** *Power tools are dangerous in the hands of untrained users.*

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

6. **Keep cutting tools sharp and clean.** *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*

7. **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** *Use of the power tool for operations different from those intended could result in a hazardous situation.*

8. **Keep handles and grasping surfaces dry, clean and free from oil and grease.** *Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.*

9. Do not bend flex shaft beyond 6″ radius or near connection to tool. Do not operate with excessive bend or with shaft crossed over itself.

Service

1. **Have your power tool serviced by a qualified repair person using only identical replacement parts.** *This will ensure that the safety of the power tool is maintained.*

2. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

Safety Warnings Common for Grinding, Sanding, Wire Brushing, Polishing, Carving or Abrasive Cutting-off Operations

1. **This power tool is intended to function as a grinder, sander, wire brush, polisher, carving or cut-off tool. Read all safety warnings, instructions, illustrations and specifications provided with this power tool.** *Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.*

2. **Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** *Just because the accessory can be attached to your power tool, it does not assure safe operation.*

3. **The RATED SPEED of the grinding accessories must be at least equal to the maximum speed marked on the power tool.** *Grinding accessories running faster than their RATED SPEED can break and fly apart.*

4. **The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool.** *Incorrectly sized accessories cannot be adequately controlled.*

5. **The arbour size of wheels, sanding drums or any other accessory must properly fit the spindle or collet of the power tool.** *Accessories that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.*

6. **Mandrel MOUNTED WHEELS, sanding drums, cutters or other accessories must be fully inserted into the collet or chuck.** *If the mandrel is insufficiently held and/or the overhang of the wheel is too long, the MOUNTED WHEEL may become loose and be ejected at high velocity.*

7. **Do not use a damaged accessory. Before each use inspect the accessory such as abrasive wheels for chips and cracks, sanding drum for cracks, tear or excess wear, wire brush for loose or cracked wires. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** *Damaged accessories will normally break apart during this test time.*

8. **Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments.** *The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtrating particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.*

9. **Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** *Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.*
10. **Hold power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** *Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.*
11. **Always hold the tool firmly in your hand(s) during the start-up.** *The reaction torque of the motor, as it accelerates to full speed, can cause the tool to twist.*
12. **Use clamps to support workpiece whenever practical. Never hold a small workpiece in one hand and the tool in the other hand while in use.** *Clamping a small workpiece allows you to use your hand(s) to control the tool. Round material such as dowel rods, pipes or tubing have a tendency to roll while being cut, and may cause the bit to bind or jump toward you.*
13. **Position the cord clear of the spinning accessory.** *If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.*
14. **Never lay the power tool down until the accessory has come to a complete stop.** *The spinning accessory may grab the surface and pull the power tool out of your control.*
15. **After changing the bits or making any adjustments, make sure the collet nut, chuck or any other adjustment devices are securely tightened.** *Loose adjustment devices can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown.*
16. **Do not run the power tool while carrying it at your side.** *Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.*
17. **Regularly clean the power tool's air vents.** *The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.*
18. **Do not operate the power tool near flammable materials.** *Sparks could ignite these materials.*
19. **Do not use accessories that require liquid coolants.** *Using water or other liquid coolants may result in electrocution or shock.*
20. Avoid unintentional starting. Prepare to begin work before turning on the tool.
21. Do not depress the spindle lock when starting or during operation.
22. Do not leave the tool unattended when it is plugged into an electrical outlet Turn off the tool, before leaving.
23. Use clamps (not included) or other practical ways 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 and personal injury.

Kickback and Related Warnings

Kickback is a sudden reaction to a pinched or snagged rotating wheel, sanding band, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

1. **Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces.** *The operator can control kickback forces, if proper precautions are taken.*
2. **Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory.** *Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.*
3. **Do not attach a toothed saw blade.** *Such blades create frequent kickback and loss of control.*
4. **Always feed the bit into the material in the same direction as the cutting edge is exiting from the material (which is the same direction as the chips are thrown).** *Feeding the tool in the wrong direction causes the cutting edge of the bit to climb out of the work and pull the tool in the direction of this feed.*
5. **When using rotary files, cut-off wheels, high-speed cutters or tungsten carbide cutters, always have the work securely clamped.** *These wheels will grab if they become slightly canted in the groove, and can kickback. When a cut-off wheel grabs, the wheel itself usually breaks. When a rotary file, high-speed cutter or tungsten carbide cutter grabs, it may jump from the groove and you could lose control of the tool.*

Safety Warnings Specific For Grinding and Abrasive Cutting-Off Operations

1. **Use only wheel types that are recommended for your power tool and only for recommended applications. For example: do not grind with the side of a cut-off wheel.** *Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.*
2. **For threaded abrasive cones and plugs use only undamaged wheel mandrels with an unrelieved shoulder flange that are of correct size and length.** *Proper mandrels will reduce the possibility of breakage.*
3. **Do not "jam" a cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut.** *Overstressing the wheel increases the loading and susceptibility to twisting or snagging of the wheel in the cut and the possibility of kickback or wheel breakage.*
4. **Do not position your hand in line with and behind the rotating wheel.** *When the wheel, at the point of operation, is moving away from your hand, the possible kickback may propel the spinning wheel and the power tool directly at you.*
5. **When wheel is pinched, snagged or when interrupting a cut for any reason, switch off the power tool and hold the power tool motionless until the wheel comes to a complete stop. Never attempt to remove the cut-off wheel from the cut while the wheel is in motion otherwise kickback may occur.** *Investigate and take corrective action to eliminate the cause of wheel pinching or snagging.*
6. **Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully re-enter the cut.** *The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.*
7. **Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback.** *Large workpieces tend to sag under their own weight. Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.*
8. **Use extra caution when making a "pocket cut" into existing walls or other blind areas.** *The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.*

Safety Warnings Specific For Wire Brushing Operations

1. **Be aware that wire bristles are thrown by the brush even during ordinary operation. Do not overstress the wires by applying excessive load to the brush.** *The wire bristles can easily penetrate light clothing and/or skin.*
2. **Allow brushes to run at operating speed for at least one minute before using them. During this time no one is to stand in front or in line with the brush.** *Loose bristles or wires will be discharged during the run-in time.*
3. **Direct the discharge of the spinning wire brush away from you.** *Small particles and tiny wire fragments may be discharged at high velocity during the use of these brushes and may become imbedded in your skin.*

Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Wear suitable gloves to reduce the vibration effects on the user.
4. Use tools with the lowest vibration when there is a choice between different processes.
5. Include vibration-free periods each day of work.
6. Grip tool as lightly as possible (while still keeping safe control of it). Let the tool do the work.
7. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

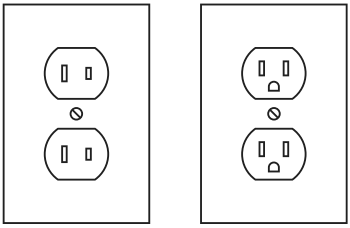
SAVE THESE INSTRUCTIONS.

Grounding

⚠WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION:
Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. Do not modify the power cord plug provided with the tool. Never remove the grounding prong from the plug. Do not use the tool if the power cord or plug is damaged. If damaged, have it repaired by a service facility before use. If the plug will not fit the outlet, have a proper outlet installed by a qualified electrician.

Double Insulated Tools: Tools with Two Prong Plugs



Outlets for 2-Prong Plug

1. Tools marked "Double Insulated" do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code.
2. Double insulated tools may be used in either of the 120 volt outlets shown in the preceding illustration. **(See Outlets for 2-Prong Plug.)**

Extension Cords

1. ***Grounded*** tools require a three wire extension cord. ***Double Insulated*** tools can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Table A.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Table A.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Table A.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Table A.)**
6. If you are using an extension cord outdoors, make sure it is marked with the suffix "W-A" ("W" in Canada) to indicate it is acceptable for outdoor use.
7. Make sure the extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect the extension cords from sharp objects, excessive heat, and damp or wet areas.

TABLE A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120/240 VOLT)

NAMEPLATE AMPERES (at full load)	EXTENSION CORD LENGTH				
	25´	50´	75´	100´	150´
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	18	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

*** Based on limiting the line voltage drop to five volts at 150% of the rated amperes.**

Symbology

	Double Insulated
V	Volts
~	Alternating Current
A	Amperes
n_0 xxxx/min.	No Load Revolutions per Minute (RPM)
	WARNING marking concerning Risk of Eye Injury. Wear ANSI-approved safety goggles with side shields.

	Read the manual before set-up and/or use.
	WARNING marking concerning Risk of Fire. Do not cover ventilation ducts. Keep flammable objects away.
	WARNING marking concerning Risk of Electric Shock. Properly connect power cord to appropriate outlet.

Specifications

Electrical Rating	120VAC / 60Hz / 1.6A
No Load Speed	n_0: 5000-35000/min
Collet Sizes	1/8″, 3/32″
Maximum Accessory Diameter	Rotary Tool: Ø2″ (Ø51mm)
	Flex Shaft: Ø1″ (Ø25.4mm)

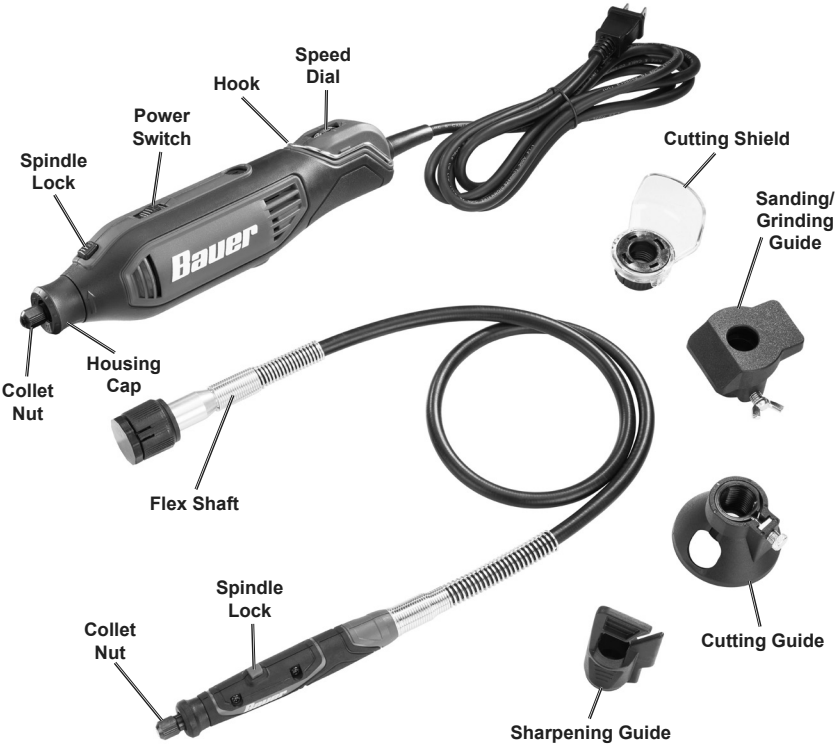
Setup - Before Use:

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Power Switch is in the off-position and unplug the tool from it's electrical outlet before performing any procedure in this section.

Functions



Accessories

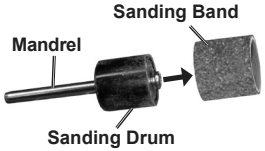
- **Steel Burr Bits** - For carving and engraving wood, laminates, plastics, and non-ferrous metals.



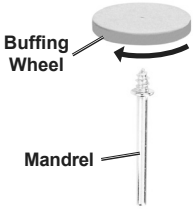
- **Grinding Stones -** For sharpening cutting tools, deburring metal after cutting, and removing excess material on metal and ceramics.



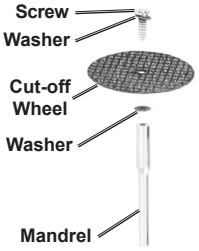
- **Sanding Drums** - For smoothing out rough areas. Install sanding band on drum. Tighten the screw on the Drum to hold band in place.



- **Buffing Wheels** - For polishing. Use Mandrel with threads for polishing wheels.



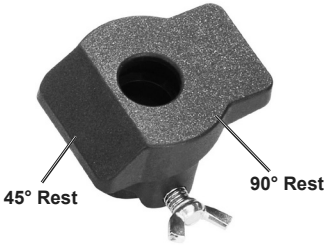
- **Cut-off Wheels** - For cutting, carving and slotting materials. Use Mandrel with flat screw tip. Do not overtighten screw.



- **Cutting Shield -** For shielding from sparks and debris while allowing workpiece to be viewed.



- **Sanding/Grinding Guide -** For additional control and stability while sanding and grinding. Equipped with 45° and 90° workpiece rests.



- **Cutting Guide -** For setting cutting depth up to 3/4″ in the workpiece.



- **Sharpening Guide -** For sharpening garden tools.



Recommended Accessory Speeds

When adjusting the Speed Dial, a distinct change in the tool sound will occur at select intervals:

- 5 - 5,000 RPM
- 10 - 10,000 RPM
- 15 - 15,000 RPM
- 20 - 20,000 RPM
- 25 - 25,000 RPM
- 30 - 30,000 RPM
- 35 - 35,000 RPM

<table>
<tr><th>Part Description</th><th>Soft Wood</th><th>Hard Wood</th><th>Plastics, Laminates</th><th>Steel (ferrous metals)</th><th>Aluminum, Brass, (non-ferrous metals)</th><th>Stone/ Shell</th><th>Ceramic</th><th>Glass</th></tr>
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<tr><td>Ø5/16" Spherical / Semi-Spherical</td><td>12-17K</td><td rowspan="5">9-11K</td><td>12-17K</td></tr>
<tr><td>Ø1/8" - 3/16" Spherical / Pointed / Cylindrical</td><td>25-35K</td><td>25-35K</td></tr>
<tr><td>Ø1/4" - 7/32" Cylindrical</td><td>12-17K</td><td rowspan="3">12-17K</td></tr>
<tr><td>Ø5/16" Cylindrical</td><td>25-35K</td></tr>
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<tr><td colspan="9">Aluminum Oxide Grinding Stones (Pink, White, Orange, Brown)</td></tr>
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<tr><td>Ø1" Carbide Cutting Wheel</td><td>25-35K</td><td>18-35K</td><td colspan="4">Not Recommended</td></tr>
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<tr><td>Ø1/8" Drywall Cutting Bit</td><td colspan="8">30K</td></tr>
<tr><td>Ø1/8" Multi-purpose Bit</td><td colspan="2">12-35K</td><td>5-11K</td><td>Not Rec.</td><td>25-35K</td><td colspan="3">Not Recommended</td></tr>
<tr><td>Ø1/8" Tile Bit</td><td colspan="6">Not Recommended</td><td>25-35K</td><td>Not Rec.</td></tr>
<tr><td>Ø1-3/4" Rotary Steel Saw Blade</td><td>15K</td><td rowspan="3">20K</td><td rowspan="3">15-20K</td><td colspan="5" rowspan="5">Not Recommended</td></tr>
<tr><td>Ø1-3/8" Rotary Steel Saw Blade</td><td>20K</td></tr>
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<tr><td colspan="9">Polishing Accessories</td></tr>
<tr><td>Rubber Polishing Points</td><td colspan="3" rowspan="2">Not Recommended</td><td colspan="5">18-24K</td></tr>
<tr><td>Ø1" Felt Wheel / Bob</td><td colspan="5">12-17K</td></tr>
<tr><td>Cloth Rotary Wheel</td><td colspan="2">Not Recommended</td><td colspan="3">4.5K</td><td colspan="3">Not Recommended</td></tr>
<tr><td colspan="9">Sanding Drums and Discs</td></tr>
<tr><td>Ø1/4" - 1/2" Sanding Drum (All Grits)</td><td colspan="2">5-35K</td><td>5-17K</td><td colspan="3">25-35K</td><td colspan="2">5-35K</td><td>Not Rec.</td></tr>
<tr><td>Sanding Discs</td><td colspan="2">12-17K</td><td>5-8K</td><td>Not Rec.</td><td>5-8K</td><td colspan="3">Not Recommended</td></tr>
</table>

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Power Switch is in the off-position and unplug the tool from its electrical outlet before performing any procedure in this section.

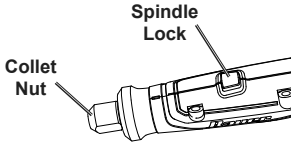
Installing Accessory

WARNING! TO PREVENT SERIOUS INJURY: Use only rotary accessories of the correct shank diameter for the collet. Use only rotary accessories suitable for the speed of the tool.

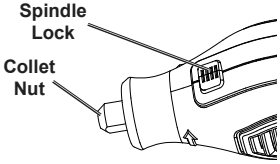
WARNING! TO PREVENT SERIOUS INJURY: Carefully inspect accessories for cracks, chips, or other damage before installing. Do not use accessories that have been dropped, cracked, or damaged. The accessory may shatter causing serious injury.

CAUTION! TO PREVENT INJURY: When changing an accessory immediately after use, be careful not to touch the accessory. It may be very hot from use, possibly causing injury. Allow the accessory time to cool before handling it.

1. Press and hold Spindle Lock.
2. Loosen Collet Nut with Wrench (included). Release Spindle Lock.
3. Insert the shank end of accessory into Collet.
4. Press and hold Spindle Lock.
5. Tighten Collet Nut with Wrench. Release Spindle Lock.
6. Pull on Accessory to ensure it is secured in Collet.



Flex Shaft



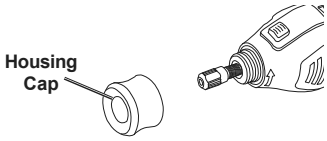
Rotary Tool

Changing Collet

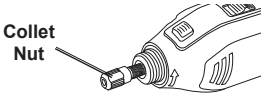
1. Press and hold Spindle Lock.
2. Remove Collet Nut with Wrench then remove Collet. Release Spindle Lock.
3. Insert new Collet.
4. Press and hold Spindle Lock.
5. Replace and tighten Collet Nut. Release Spindle Lock.

Installing Flex Shaft Attachment

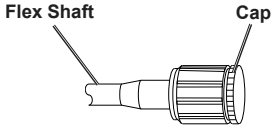
1. Remove Housing Cap from Rotary Tool.



2. Press and hold Spindle Lock, then loosen Collet Nut with Wrench. Remove accessory. Remove Collet Nut.

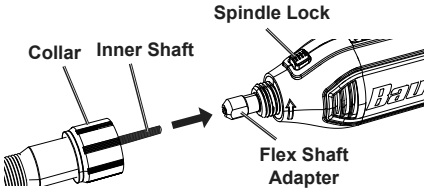


3. Remove Cap from Flex Shaft. Replace Cap whenever Flex Shaft is not in use.

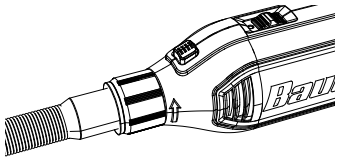


4. Press and hold Spindle Lock, then thread Flex Shaft Adapter onto Rotary Tool, then tighten with Wrench.
NOTICE: To prevent damage to tool, do not overtighten.

5. Pull Inner Shaft out until it protrudes from Collar no more than 3/4″; insert Inner Shaft into Adapter.
NOTICE: To prevent damage to Flex Shaft, do not pull Inner Shaft more than 3/4″ out.



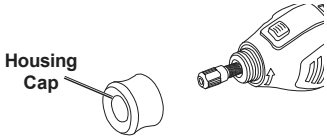
6. Thread Flex Shaft Collar onto tool.



7. **NOTICE: To prevent property damage to Rotary Tool, hang by its Hook.**

Installing Shield

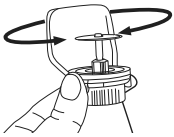
1. Remove Housing Cap from Rotary Tool.



2. Thread Shield onto tool. Hand tighten.

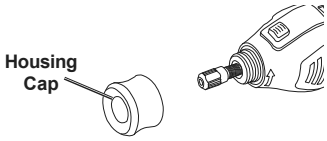
3. Select an appropriate accessory for the job. Install accessory.

4. Adjust Shield to desired position to protect from debris and sparks.

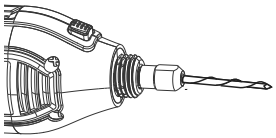


Installing Cutting Guide

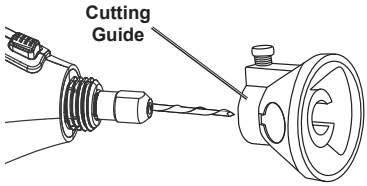
1. Remove Housing Cap from Rotary Tool.



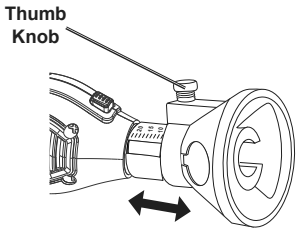
2. Select an appropriate accessory for the job. Install accessory.



3. Thread Cutting Guide onto tool.

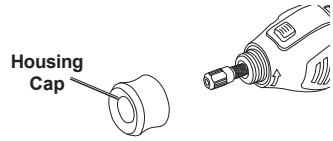


4. Loosen Thumb Knob. Adjust cutting depth on Guide. Tighten Thumb Knob.



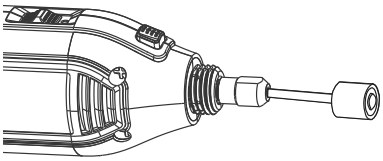
Installing Sanding/Grinding Guide

1. Remove Housing Cap from Rotary Tool.

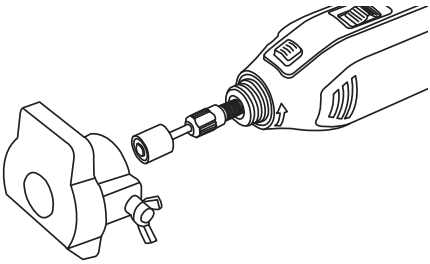


2. Select an appropriate accessory for the job. Install accessory.

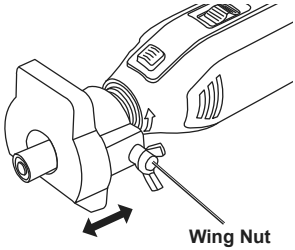
Note: Accessory must be 1/2″ diameter or smaller.



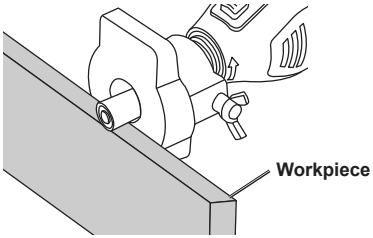
3. Thread Guide onto tool.



4. Loosen Wing Nut. Adjust depth for more or less accessory exposure. Tighten Wing Nut.

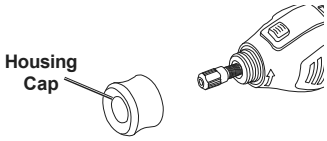


5. Place Guide against workpiece to stabilize tool. Use even pressure and speed on workpiece.



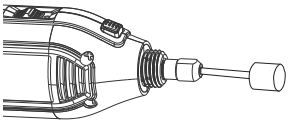
Installing Sharpening Guide Attachment

1. Remove Housing Cap from Rotary Tool.

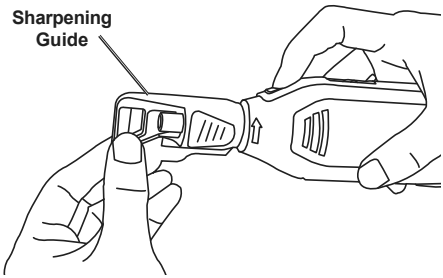


2. Install aluminum oxide grinding stone.

Note: Grinding stone must be 3/8″ diameter or smaller.



3. Thread Sharpening Guide onto tool.



4. Insert garden tool into Guide slot with beveled edge facing grinding stone accessory. Use even pressure and speed to sharpen beveled edge.



Workpiece and Work Area Set Up

1. Designate a work area that is clean and well lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
3. Secure loose workpieces using a vise or clamps (not included) to prevent movement while working.
4. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Operating Instructions

⚠WARNING

TO PREVENT SERIOUS INJURY WHILE IN OPERATION:
Use personal protective equipment. Always wear eye protection.
Wear ANSI-approved safety goggles with side shields.

1. Make sure tool is unplugged.
2. If using Flex Shaft attachment, install on Rotary Tool.
3. Select appropriate accessory for the job. Install accessory.
4. Rotate Speed Dial to desired speed setting. Reference *Recommended Accessory Speeds on page 11*.
5. Plug Power Cord into a grounded 120VAC electrical outlet.
6. Start tool by pushing Power Switch to ON position. Allow Tool to reach full speed before beginning work.
7. Apply accessory to workpiece as needed.

NOTICE: TO PREVENT PROPERTY DAMAGE:
Do not bend Flex Shaft beyond 6″ radius or near connection to tool. Do not operate with excessive bend or with shaft crossed over itself.

8. When finished, stop tool by pushing power switch to OFF position. Wait for accessory to completely stop spinning.
9. Unplug tool.
10. Remove attachment and accessory. Replace Housing Cap.
11. Store tool, parts and accessories inside case to protect from moisture and humidity. Store in an indoor dry area out of reach of children.

Maintenance and Servicing Instructions

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Make sure that the Power Switch is in the off-position and before performing any procedure in this section.

TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - damaged cord/electrical wiring,
   - cracked or broken parts, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
3. Lubricate Flex Shaft:
   a. Gently pull inner shaft out of Flex Shaft.
   b. Clean debris and hardened lubricant with a clean cloth.
   c. Add a thin film of high temperature white lithium grease onto inner shaft with a clean cloth.

Note: Do not overgrease inner shaft.

   d. Reinsert inner shaft into Flex Shaft.
4. Store tool, parts and accessories inside case to protect from moisture and humidity. Store in an indoor dry area out of reach of children.
5. **⚠WARNING! TO PREVENT SERIOUS INJURY: If the supply cord of this power tool is damaged, it must be replaced only by a qualified service technician.**

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Cord not connected.	1. Check that cord is plugged in.
	2. No power at outlet.	2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads.
	3. Internal damage or wear. (Carbon brushes or Power Switch, for example.)	3. Have technician service tool.
Tool operates slowly.	Forcing tool to work to fast.	Allow tool to work at its own rate.
Performance decreases over time.	1. Accessory dull or damaged.	1. Keep cutting accessories sharp. Replace as needed.
	2. Internal damage or wear.	2. Have technician service tool.
Excessive noise or rattling.	Internal damage or wear. (Carbon brushes or bearings, for example.)	Have technician service tool.
Overheating.	1. Forcing tool to work to fast.	1. Allow tool to work at its own rate.
	2. Accessory dull or damaged.	2. Keep cutting accessories sharp. Replace as needed.
	3. Blocked motor housing vents.	3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air.
	4. Flex Shaft hotter to touch than normal.	4. Lubricate Flex Shaft as described in *Cleaning, Maintenance, and Lubrication* on page 18

Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply before service.

Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175472205 when ordering parts.

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Bauer™

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