

# CENTRAL MACHINERY

®

## 3-INCH MULTIPURPOSE BENCH GRINDER

**Model 43533**

### SET UP AND OPERATING INSTRUCTIONS



Visit our website at: <http://www.harborfreight.com>



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

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**For technical questions or replacement parts, please call 1-800-444-3353.**

Manual Revised 10c

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## SPECIFICATIONS

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Motor	120 V~, 60 Hz, 1.3 A
No Load RPM	0 to 10,000 RPM
Grinding Wheels	1- 3 x 3/4 inch Grinding Stone 1- 3 x 3/4 inch Fiber Wheel
Arbor	10 mm
Flex Shaft	31 inches long
Flex Shaft Collet	1/8 inch diameter
Flex Shaft Bit	1/8 inch mounting stone
Features	Variable Speed Dial Flex shaft wrench set

**Note:** Performance of this tool may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.

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## SAVE THIS MANUAL

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You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

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## SAFETY WARNINGS AND PRECAUTIONS

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**WARNING:** When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

**Read all instructions before using this product!**

- Avoid working alone.** If an accident happens, an assistant can bring help.
- Disconnect power.** Unplug tool when not in use, before servicing and when changing accessories such as grinding wheels. Never walk away and leave the tool running.
- Keep work area clean.** Cluttered areas invite injuries.
- Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
- Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
- Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically nonconductive clothes and nonskid footwear are recommended when working. Wear restrictive hair covering to contain long hair. Wear an ANSI approved dust mask or respirator.
- Use eye protection.** Always wear ANSI approved impact safety goggles.
- Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across electrical cables or frames.
- Maintain tools with care.** Inspect grinding wheels for cracks, and tool cords periodically and, if damaged, have them repaired by an authorized technician.
- Use the right tool for the job.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was designed. Do not modify this tool and do not use this tool for a purpose for which it was not intended.
- Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.

12. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any switch does not turn On and Off properly.
13. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
14. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
15. **Use proper size and type extension cord.** If an extension cord is required, it must be of the proper size and type to supply the correct current to the tool without heating up. Otherwise, the extension cord could melt and catch fire, or cause electrical damage to the tool. This tool requires use of an extension cord of **0 to 10 amps** capability (up to 50 feet), with wire size rated at **18 AWG**. Longer extension cords require larger size wire. If you are using the tool outdoors, use an extension cord rated for outdoor use (signified by "WA" on the jacket).
16. **Take caution as some woods contain preservatives such as copper chromium arsenate (CCA) which can be toxic.** When cutting these materials extra care should be taken to avoid inhalation and minimize skin contact.
17. **Maintenance.** Service/maintenance should be done by a qualified technician.
18. **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.
19. When grinding any metals, the grinder can produce sparks which may land on your clothing, or hit your face. You should use a full face mask and appropriate protective clothing. Also ensure that you are not operating the grinder around flammable materials or liquids. Always make sure the safety shields and wheel guards are in place at all times.
20. Make sure grinding wheels are of proper speed (RPM) rating for grinder.
21. Frequently quench the workpiece in water to prevent overheating; be careful not to get water on the bench grinder.
22. Use the tool rest to steady the work piece. If the tool rest is not used, the torque of the spinning grinding wheel may pull the workpiece from your hands.
23. Do not use aluminum oxide wheels when grinding nonferrous metals such as aluminum and brass. Use silicon carbide wheels for nonferrous metals.
24. When buffing material, hold material on lower side of buffing wheel. Keep fingers clear of grinding wheel and tool rest.

25. **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 or other masonry products
- 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.

(California Health & Safety Code § 25249.5, *et seq.*)

26. **WARNING:** Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling.  
(California Health & Safety Code § 25249.5, *et seq.*)

27. The warnings, cautions, 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.

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## UNPACKING

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**When unpacking, check to make sure the following parts are included.**

- 1) 3-inch Bench Grinder
- 2) 31-inch Flex Shaft
- 3) Wrench
- 4) 3-inch Grinder Stone
- 5) 3-inch Fiber Wheel
- 6) 1/8 inch Mounting Stone Bit

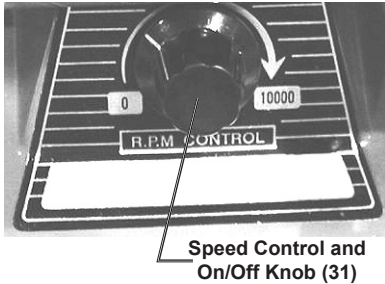
If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual.

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## OPERATION

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### Turning the Bench Grinder ON and OFF



1. Insert the Plug (36) into an electrical outlet.
2. Turn the speed control Knob (31) clockwise to turn the motor ON and adjust its speed.
3. To turn OFF, turn the Knob counter-clockwise until it clicks.
4. Do not leave the bench grinder running unattended. Turn off the tool when not in use.

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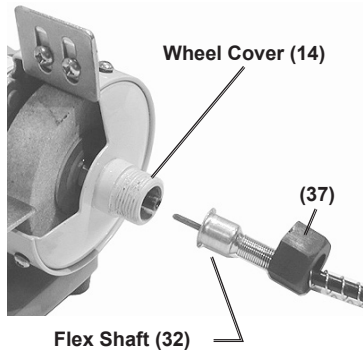
### Grinding with the Grinding Wheel

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**WARNING:** The grinding wheel can fly apart and cause injury. Grinding wheels must always be checked for cracks or imperfections. This is done with the “ring test”. Tap the wheel gently near the outer rim with the handle of a screwdriver. You should hear a clear bell-like ring. If a dull thud occurs, do not use the wheel. The wheel may be damaged and could come apart during operation.

1. Bring the workpiece into the wheel gently, without jarring.
2. When grinding high speed steels such as drill and tool bits, avoid high temperature buildup as this can affect the temper of the steel.
3. For small workpieces such as drill bits or chisels, avoid applying pressure to the wheel at a high angle that could cause the workpiece to become lodged between the tool rest and the wheel.

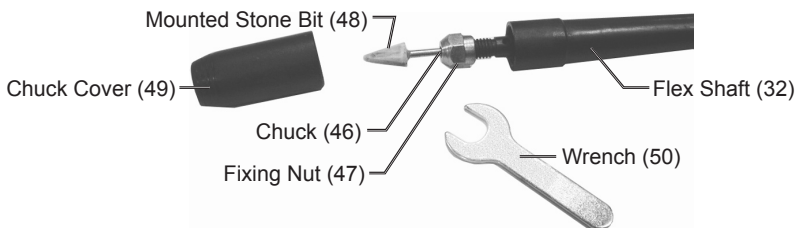
## Grinding with the Flex Shaft



1. Secure the Flex Shaft (32) to the Wheel Cover (14). Align and insert the shaft. It can only go in one way.
2. Tighten the Flex Shaft Connector Nut (37) over the Wheel Cover.
3. Slip off the Chuck Cover (49).
4. Loosen the Fixing Nut (47) with the Wrench (50).
5. Insert the Mounted Stone Bit (48) into the Chuck (46) and tighten Fixing Nut.
6. Slip the Chuck Cover (49) over the Chuck assembly.
7. Grasp the Flex Shaft handle with one hand, and turn the Grinder ON with the other hand.

**CAUTION:** Wear ANSI-approved safety glasses when grinding.

8. When finished, turn the Grinder OFF and wait for it to stop before setting down the Flex Shaft.



## MAINTENANCE

### Dressing the Grinding Wheel

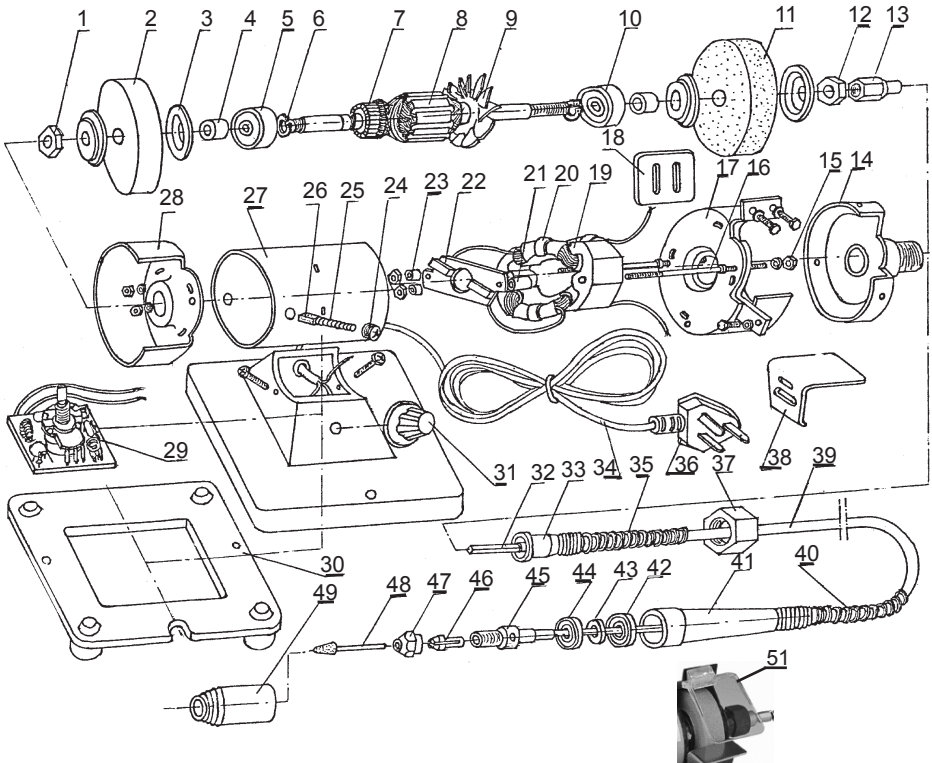
**Note:** New wheels frequently are not true and during operation will often become grooved, glazed (build up), out of round, or misshapen. You will need a grinding wheel dresser for this operation. Dressers are available from Harbor Freight Tools.

1. Stand to the side of the wheel for this operation.
2. If the wheel is new let it run for a minute with no load. If the wheel runs straight and true, you will not need to dress it prior to operation. If it does not, proceed with the following instructions.
3. If you are using a "pistol grip" dresser, grip the handle firmly with one hand and the arm of the dresser with the other. Allow the wheel to reach full speed. Use the tool rest to support your hand and the dresser, and evenly apply the dresser to all surfaces of the wheel. The wheel can be dressed in a few minutes.
4. If you are using an "inline" dresser, hold the handle firmly, put the dresser on the tool rest so that its wheels can move freely (i.e., the exposed part of the wheel should be facing up). Let the wheel reach full speed and apply the dresser evenly to all surfaces.

# PARTS LIST

Part	Description	Q'ty	Part	Description	Q'ty	Part	Description	Q'ty
1	Left-handed Nut	1	18	Clamp	1	35	Spring	1
2	Polishing Wheel	1	19	Stator	1	36	Plug	1
3	Wheel Pushing Ring	4	20	Clamp	2	37	Shaft Connector Nut	1
4	Washer	2	21	Wire Cover	2	38	Tool Rest	1
5	Bearing	1	22	Brush Holder	1	39	Flex Shaft Hose	1
6	Snap Ring	2	23	Wire Cover	2	40	Spring	1
7	Rotor	1	24	Brush Screw	2	41	Chuck Cover	1
8	Armature	1	25	Brush Spring	2	42	Bearing	1
9	Fan	1	26	Brush	2	43	Washer	1
10	Bearing	1	27	Motor Housing	1	44	Bearing	1
11	Sanding Wheel	1	28	Wheel Cover	1	45	Spindle	1
12	Right Nut	1	29	Circuit Board	1	46	Chuck	1
13	Shaft Mounting Nut	1	30	Base Holder	1	47	Fixing Nut	1
14	Wheel Cover	1	31	Knob	1	48	Mounted Stone Bit	1
15	Nut	6	32	Flex Shaft	1	49	Chuck Cover	1
16	Bolt	2	33	Adaptor	1	50	Wrench	1
17	Wheel Cover	1	34	Cord	1	51	Plastic Safety Lens	1

## ASSEMBLY DRAWING



SKU 43533

For technical questions, please call 1-800-444-3353.

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## **PLEASE READ THE FOLLOWING CAREFULLY**

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

**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.

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## **LIMITED 90 DAY WARRANTY**

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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.

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