

CHICAGO
Electric Power Tools

3-INCH MULTIPURPOSE BENCH GRINDER

Model 43533

ASSEMBLY AND OPERATING INSTRUCTIONS



3491 Mission Oaks Blvd., Camarillo, CA 93011

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For technical questions and replacement parts, please call 1-800-444-3353

Specifications

ITEM	DESCRIPTION
Motor	110 VAC, 60 Hz, single phase, 120 watts, 0.5 amps (startup), 0.3 amps (no load), 0.5 amps (with load)
No Load RPM	0 to 20,000 RPM
Line Cord	5 feet, 3-prong ground
Grinding Wheels	1- 3 x 3/4 inch Grinding Stone 1- 3 x 3/4 inch Fiber Wheel
Arbor	0.39 inches (10 mm) diameter
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

Save This Manual

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.

Safety Warnings and Precautions

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!

1. **Avoid working alone.** If an accident happens, an assistant can bring help.
2. **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.
3. **Keep work area clean.** Cluttered areas invite injuries.
4. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.

5. **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.
6. **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.
7. **Use eye protection.** Always wear ANSI approved impact safety goggles.
8. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across electrical cables or frames.
9. **Maintain tools with care.** Inspect grinding wheels for cracks, and tool cords periodically and, if damaged, have them repaired by an authorized technician.
10. **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.
11. **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.** For your safety, service and maintenance should be performed regularly by a qualified technician.

Additional Specific Safety Instructions for Bench Grinders

1. 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.
2. Make sure the grinding wheels are of the proper speed (RPM) rating for the grinder.
3. Frequently quench the workpiece in water to prevent overheating; be careful not to get water on the bench grinder.
4. 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.
5. Do not use aluminum oxide wheels when grinding nonferrous metals such as aluminum and brass. Use silicon carbide wheels for nonferrous metals.
6. When buffing material, always hold the material on the lower side of the buffing wheel. Always keep fingers clear of the grinding wheel and the tool rest.

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

Warning: 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.

Unpacking

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

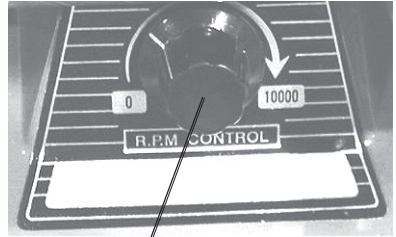
- 1) 3-inch Bench Grinder, 2) 31-inch Flex Shaft, 3) Wrench
- 4) 3-inch Grinder Stone, 5) 3-inch Fiber Wheel, 6) 1/8 inch Mounting Stone Bit

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

Operation

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 counterclockwise until it clicks.
4. Never leave the bench grinder running unattended. Always turn off the tool when not in use.



Speed Control and On/Off Knob (31)

Using the Grinder

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.

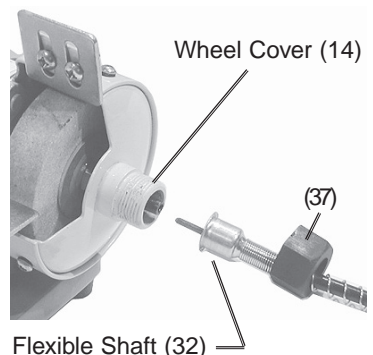
1. Always bring the workpiece into the wheel gently, without jarring.
2. The workpiece will quickly become heated, therefore frequent quenching in water is required.
3. When grinding high speed steels such as drill and tool bits, avoid high temperature buildup as this can affect the temper of the steel.
4. 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

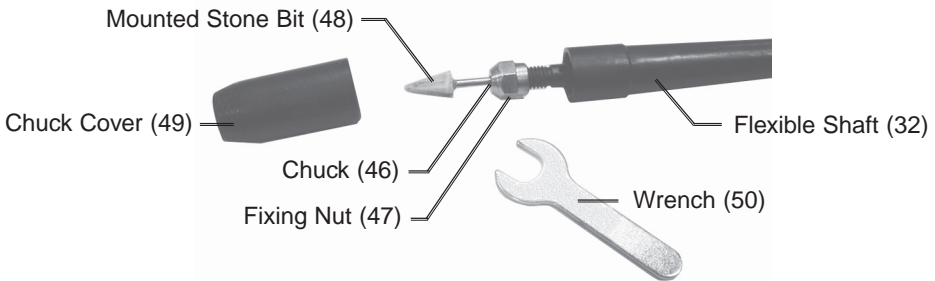
1. Secure the Flexible Shaft (32) to the Wheel Cover (14).

Align and insert the shaft. It can only go in one way.

2. Tighten the Flexible 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 Flexible Shaft handle with one hand, and turn the Grinder ON with the other hand.

CAUTION: Always wear ANSI approved safety glasses when grinding.

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

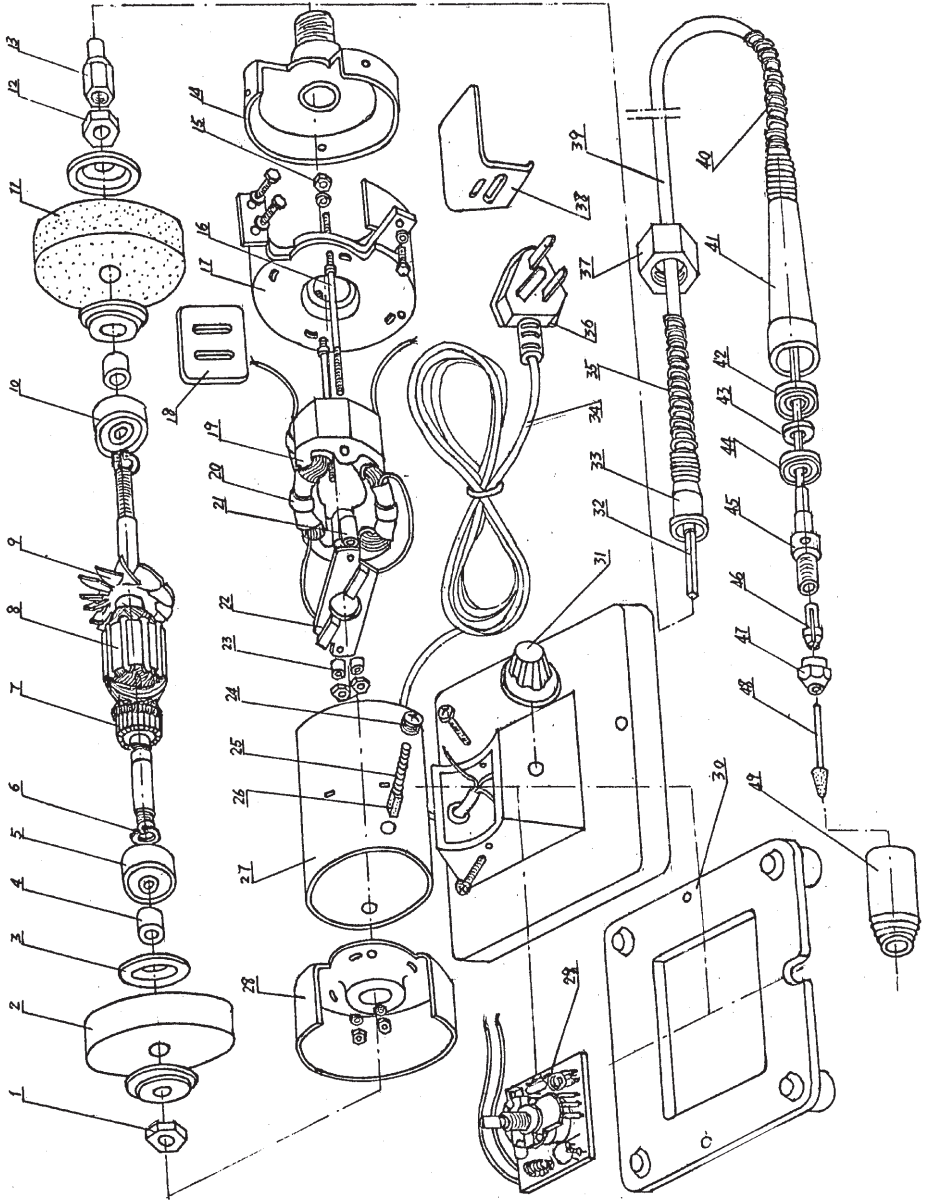
Item	Description	Qty
1	Left Nut	1
2	Polishing Wheel	1
3	Wheel Pushing Ring	4
4	Washer	2
5	Bearing	1
6	Shap Ring	2
7	Rotor	1
8	Armature	1
9	Fan	1
10	Bearing	1
11	Sanding Wheel	1
12	Right Nut	1
13	Mounting Nut, Flexible Shaft	1
14	Wheel Cover	1
15	Nut	6
16	Bolt	2
17	Wheel Cover	1
18	Clamp	1
19	Stator	1
20	Clamp	2
21	Wire Cover	2
22	Brush Holder	1
23	Wire Cover	2
24	Brush Screw	2
25	Brush Spring	2

Item	Description	Qty
26	Brush	2
27	Motor Housing	1
28	Wheel Cover	1
29	Circuit Board	1
30	Base Holder	1
31	Knob	1
32	Flexible Shaft	1
33	Adaptor	1
34	Cord	1
35	Spring	1
36	Plug	1
37	Flexible Shaft Connector Nut	1
38	Tool Rest	1
39	Flexible Shaft Hose	1
40	Spring	1
41	Chuck Cover	1
42	Bearing	1
43	Washer	1
44	Bearing	1
45	Spindle	1
46	Chuck	1
47	Fixing Nut	1
48	Mounted Stone Bit	1
49	Chuck Cover	1
50	Wrench	1

PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR 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.

Assembly Drawing



NOTE: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.