

MODEL D3589 MINI GRINDER SET



OWNER'S MANUAL

Phone: (360) 734-3482 • On-Line Technical Support: tech-support@shopfox.biz

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**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE OR FORM WITHOUT
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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, cement, and 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.

INTRODUCTION

Woodstock Technical Support

We stand behind our machines! In the event that questions arise about your machine, parts are missing, or a defect is found, please contact Woodstock International Technical Support at (360) 734-3482 or send e-mail to: tech-support@shopfox.biz. Our knowledgeable staff will help you troubleshoot problems and send out parts for warranty claims.

If you need the latest edition of this manual, you can download it from <http://www.shopfox.biz>. If you still have questions after reading the latest manual, or if you have comments please contact us at:

Woodstock International, Inc.
Attn: Technical Support Department
P.O. Box 2309
Bellingham, WA 98227

ELECTRICAL

110V Operation

The SHOP FOX® Model D3589 is prewired for 110 volt operation, and comes with an AC/DC power adapter.

AC/DC power adapters do not need to be connected to a grounded circuit. However, there are a number of safety issues that all users should be aware of, especially when using an extension cord.

- DO NOT use the AC/DC power adapter in damp or wet conditions, as the risk of electric shock is greatly increased.
- Never place the AC/DC power adapter on or near flammable items or substances, or items that could be damaged by excessive heat.
- If working outside, always situate the AC/DC power adapter in a cool, dry, shaded area whenever possible. The chance of the AC/DC power adapter overheating is greatly increased if placed in direct sunlight.

If you need to modify a power supply circuit, and you are unsure about the wiring codes in your area, consult a qualified electrician to reduce the risk of electrocution or fire.

Extension Cords

When it is necessary to use an extension cord, use the following guidelines:

- Use cords rated for standard service.
- Use cords with 14 gauge wire or bigger.
- Do not use cords in need of repair.

SAFETY

**READ MANUAL BEFORE OPERATING MACHINE.
FAILURE TO FOLLOW INSTRUCTIONS BELOW WILL
RESULT IN PERSONAL INJURY.**



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

NOTICE

This symbol is used to alert the user to useful information about proper operation of the equipment, and/or a situation that may cause damage to the machinery.

Standard Safety Instructions

1. **READ THROUGH ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.
2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are **NOT** safety glasses!
3. **ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Wood dust is a carcinogen and can cause cancer and severe respiratory illnesses.
4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing damage.
5. **WEAR PROPER APPAREL.** **DO NOT** wear loose clothing, gloves, neckties, rings, or jewelry which may get caught in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
6. **NEVER OPERATE MACHINERY WHEN TIRED, OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.
7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.
8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.
9. **MAKE WORKSHOP CHILD PROOF.** Use padlocks, master switches, and remove start switch keys.

10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power **OFF** and allow all moving parts to come to a complete stop before leaving machine unattended.
11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.
12. **KEEP WORK AREA CLEAN AND WELL LIT.** Clutter and dark shadows may cause accidents.
13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Undersized cords overheat and lose power. Replace extension cords if they become damaged. DO NOT use extension cords with 220V machinery.
14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY.** Make sure switch is in OFF position before reconnecting.
15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**
17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery **ON**.
18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding and alignment of parts, broken parts, part mounting, loose bolts, and any other conditions that may affect machine operation. Repair or replace damaged parts.
19. **USE RECOMMENDED ACCESSORIES.** Refer to the instruction manual for recommended accessories. The use of improper accessories may cause risk of injury.
20. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.
21. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.
22. **DO NOT OVERREACH.** Keep proper footing and balance at all times.
23. **MANY MACHINES WILL EJECT THE WORKPIECE TOWARD THE OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."
24. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY.**
25. **BE AWARE THAT CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Make sure you know the hazards associated with the type of dust you will be exposed to and always wear a respirator approved for that type of dust.

Additional Safety Instructions for Mini Grinders

SAFETY

⚠️ WARNING
 READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. **DO NOT** risk your safety by not reading!

⚠️ CAUTION
 USE this and other machinery with caution and respect. Always consider safety first, as it applies to your individual working conditions. No list of safety guidelines can be complete—every shop environment is different. Failure to follow guidelines could result in serious personal injury, damage to equipment or poor work results.

1. **SAFETY ACCESSORIES.** Always wear ANSI approved safety glasses and a NIOSH approved respirator when using the mini grinder.
2. **WORKPIECE CONTROL.** Make sure the workpiece is placed in a stable position on a benchtop or work surface and is firmly held in position by clamps or other devices.
3. **OPERATOR POSITION.** Never stand or have any part of your body directly in-line with the path of the grinder tool.
4. **COMFORTABLE OPERATIONS.** Avoid awkward operations and hand positions where a sudden slip could cause your hand to move into the spinning grinder accessory.
5. **ADAPTER SAFETY.** Never leave the AC/DC adapter plugged in when not in use. It can get hot over a prolonged period of time.
5. **EXPERIENCING DIFFICULTIES.** If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact Tech Support at (570) 546-9663.

SET UP

Unpacking

The **SHOP FOX®** Model D3589 has been carefully packaged for safe transporting. If you notice the machine has been damaged, please contact your authorized **SHOP FOX®** dealer immediately.

If any parts are missing, examine the packaging for the missing parts. For any missing parts, find the part number in the back of this manual and contact Woodstock International, Inc. at (360) 734-3482 or at tech-support@shopfox.biz

Inventory

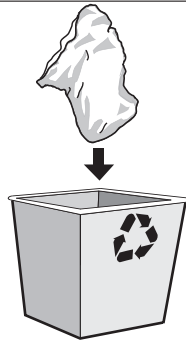
The following is a description of the main components shipped with the **SHOP FOX®** Model D3589. Lay the components out to inventory them.

Note: Some parts and hardware may already be installed on the mini grinder or on other parts. Make sure to check the machine when you use this inventory list.

Inventory (Figure 1)	Qty
A. Stainless Steel Carry Case	1
B. Mini Grinder	1
C. Power Plug and Cord	1

Components and Accessories

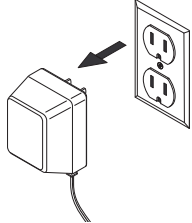
- Grinding Stones (³/₃₂" shank) 10
- Sanding Sleeves and Drums 8
- Wire Brushes (³/₃₂" shank) 3
- Cutting Wheels 5
- Polishing Wheels (¹/₈" shank) 2
- Diamond Polishers (³/₃₂" shank) 20
- Drill Bits (2 x ³/₆₄", ³/₃₂", ⁷/₆₄" shank) 4
- Mandrels (¹/₈" shank) 2
- Engraving Bit (³/₃₂" shank) 1
- Whetstone 1
- Collets (³/₆₄", ³/₃₂", ⁷/₆₄", ¹/₈" shank) 4



!WARNING

SUFFOCATION HAZARD! Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.

!WARNING



UNPLUG power adapter before you do any assembly or adjustment tasks! Otherwise, serious personal injury to you or others may occur!



Figure 1. D3589 Inventory.

SET UP

OPERATIONS

General

The Model D3589 will perform many types of operations that are beyond the scope of this manual. Many of these operations can be dangerous if performed incorrectly.

The instructions in this section are written with the understanding that the operator has the necessary knowledge and skills to operate this machine. **If at any time you are experiencing difficulties performing any operation, stop using the tool!**

If you are an inexperienced operator, we strongly recommend that you read books, trade articles, or seek training from an experienced person before performing any unfamiliar operations. **Above all, your safety should come first!**

⚠ WARNING

READ and understand this entire instruction manual before using this machine. Serious personal injury may occur if safety and operational information is not understood and followed. DO NOT risk your safety by not reading!

Changing Accessories

Changing mini grinder accessories is easy. We recommend that accessories such as polishing wheels, cutting wheels and sanding drums/sleeves are installed before the accessory is installed on the mini grinder.

To change an accessory, do these steps:

1. UNPLUG THE MINI GRINDER!
2. Press in the chuck lock. If the chuck lock does not engage, turn the chuck by hand until the chuck lock engages. Loosen the chuck nut, as shown in **Figure 2**.
3. Remove the chuck nut, collet, and any accessory already installed on the mini grinder.
4. Select the collet size that fits the accessory you wish to use, and install the collet on the mini grinder.
5. Loosely screw on the chuck.
6. Fit the accessory shank into the collet, and slide it into the collet until it stops.
7. Press in the chuck lock. Tighten the chuck.

⚠ WARNING

Always wear safety glasses when operating the mini grinder set. Failure to comply may result in serious personal injury.

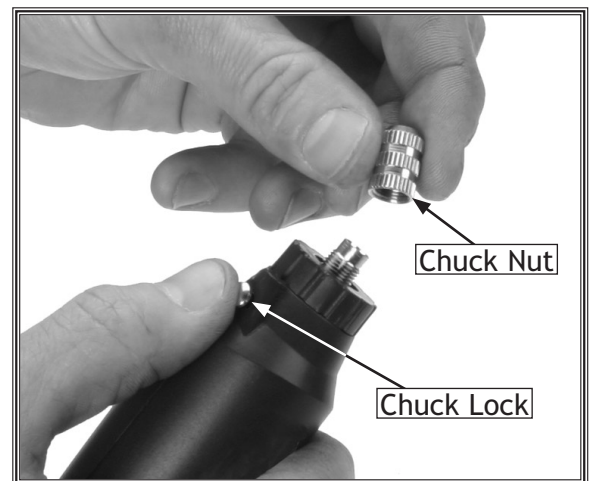


Figure 2. Loosening the chuck nut.

Sanding Sleeves

The mini grinder set comes with two different sizes of sanding drums and sleeves.

To install a sanding sleeve, do these steps:

1. Remove the screw and flat washer at the top of the sanding drum.
2. Slide a sanding sleeve of the appropriate size onto the drum.
3. Reattach the flat washer and screw.
4. Tighten the screw until the drum begins to place pressure on the inside of the sanding sleeve.

Cutting Wheels

The process for installing cutting wheels is very similar to installing sanding drums.

To install a cutting wheel, do these steps:

1. Remove the screw and the rubber washers at the top of the mandrel.
2. Fit the cutting wheel between the two rubber washers, as shown in **Figure 3**.
3. Re-insert and tighten the screw.

Polishing Wheels

Both polishing wheels provided with the mini grinder screw onto the same threaded mandrel. Simply screw the polishing wheel onto the polishing wheel mandrel.

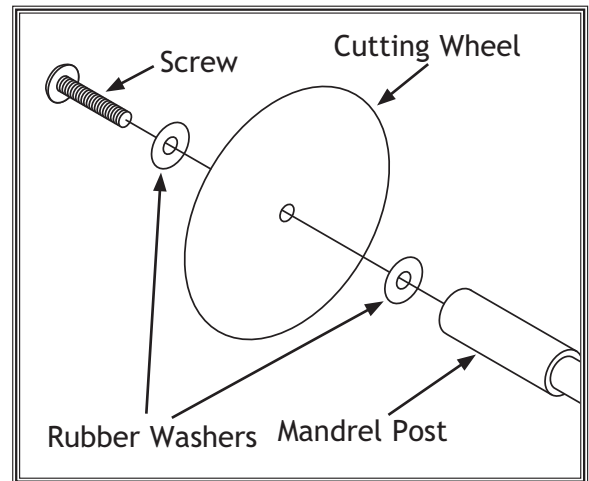
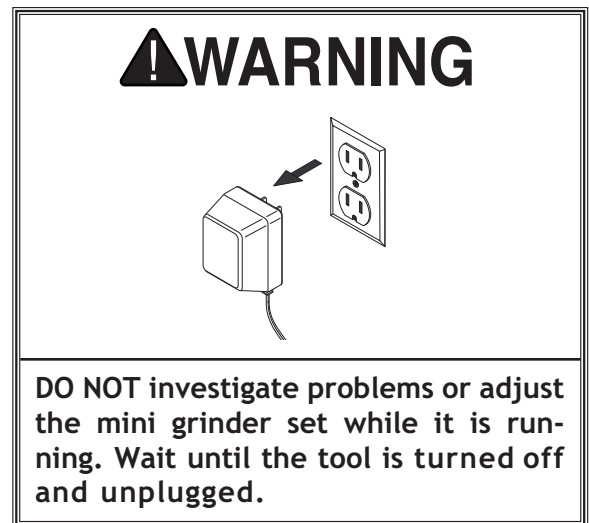


Figure 3. Installing a cutting wheel.



Accessory Use

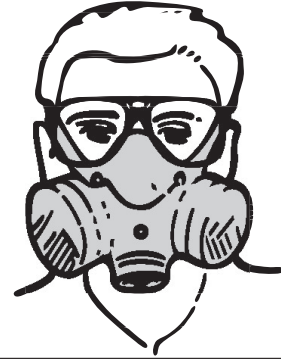
The mini grinder set comes with eight different types of accessories.

- Use the grinding stone set when shaping and smoothing materials such as wood or plastics.
- Use the sanding sleeve set when sanding rough spots on wood. Using the sanding sleeve set on plastics may cause the sleeve to clog with particulate matter, and is not recommended.
- Use the brush set to strip paint, paper, or other coatings from plastic, metal, or wood. Avoid using the metal brushes on soft woods or plastics, as the brushes may damage those materials.
- Use the cutting wheel set for fine cutting of soft wood or plastics.
- Use the polishing wheel set for buffing and polishing hard, smooth surfaces such as glass or metal. Use of a buffing compound is also recommended for maximum effectiveness.
- Use the engraving bit to engrave hard and soft surfaces, such as wood, metal or plastics.
- Use the drill bits to drill holes in wood and soft plastics.
- Use the diamond polisher set for cutting, engraving and shaping hard materials such as glass, metal and ceramics.

OPERATIONS

⚠️ WARNING

Certain dusts can cause eye damage, lung damage and respiratory illnesses. Always protect yourself by wearing ANSI approved safety glasses and a NIOSH approved respirator.

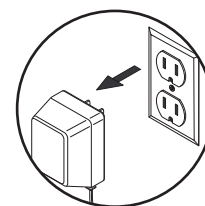


⚠️ WARNING

DO NOT use the AC/DC power adapter in damp or wet conditions, as the chance of electrical shock or short circuit is greatly increased. Failure to heed this warning could result in serious injury or death!



Troubleshooting



This section covers the most common problems and corrections with this type of machine. **WARNING! DO NOT** make any adjustments until power is disconnected and moving parts have come to a complete stop!

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Motor will not start, or fuses or circuit breakers trip open.	<ol style="list-style-type: none"> 1. Low voltage. 2. Short circuit in line cord or plug. 3. Incorrect fuses or circuit breakers in power supply. 4. Power adapter is faulty. 5. Motor is faulty. 	<ol style="list-style-type: none"> 1. Check power supply for proper voltage. 2. Inspect cord or plug for damaged insulation and shorted wires and replace extension cord. 3. Install correct fuses or circuit breakers. 4. Replace power adapter. 5. Replace tool.
Motor overheats.	<ol style="list-style-type: none"> 1. Motor overloaded. 	<ol style="list-style-type: none"> 1. Reduce load on motor.
Motor automatically shuts off (possibly resulting in blown fuse or tripped circuit breaker).	<ol style="list-style-type: none"> 1. Low power supply voltage. 2. Incorrect fuses/circuit breakers. 	<ol style="list-style-type: none"> 1. Correct the low voltage condition with a qualified electrician. 2. Install correct fuses or circuit breakers.
Mini grinder vibrates excessively when operating.	<ol style="list-style-type: none"> 1. Accessory shank or bit not seated or centered properly. 2. Chuck nut is loose. 	<ol style="list-style-type: none"> 1. Inspect accessory. Re-center accessory as necessary. 2. Tighten chuck nut.
Accessory moves when operating.	<ol style="list-style-type: none"> 1. Accessory is loose. 	<ol style="list-style-type: none"> 1. Tighten chuck nut.

Warranty

Woodstock International, Inc. warrants all **SHOP FOX**[®] machinery to be free of defects from workmanship and materials for a period of two years from the date of original purchase by the original owner. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, lack of maintenance, or reimbursement of third party expenses incurred.

Woodstock International, Inc. will repair or replace, at its expense and at its option, the **SHOP FOX**[®] machine or machine part which in normal use has proven to be defective, provided that the original owner returns the product prepaid to the **SHOP FOX**[®] factory service center or authorized repair facility designated by our Bellingham, WA office, with proof of their purchase of the product within two years, and provides Woodstock International, Inc. reasonable opportunity to verify the alleged defect through inspection. If it is determined there is no defect, or that the defect resulted from causes not within the scope of Woodstock International Inc.'s warranty, then the original owner must bear the cost of storing and returning the product.

This is Woodstock International, Inc.'s sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant that **SHOP FOX**[®] machinery complies with the provisions of any law or acts. In no event shall Woodstock International, Inc.'s liability under this warranty exceed the purchase price paid for the product, and any legal actions brought against Woodstock International, Inc. shall be tried in the State of Washington, County of Whatcom. 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 products.

Every effort has been made to ensure that all **SHOP FOX**[®] machinery meets high quality and durability standards. We reserve the right to change specifications at any time because of our commitment to continuously improve the quality of our products.