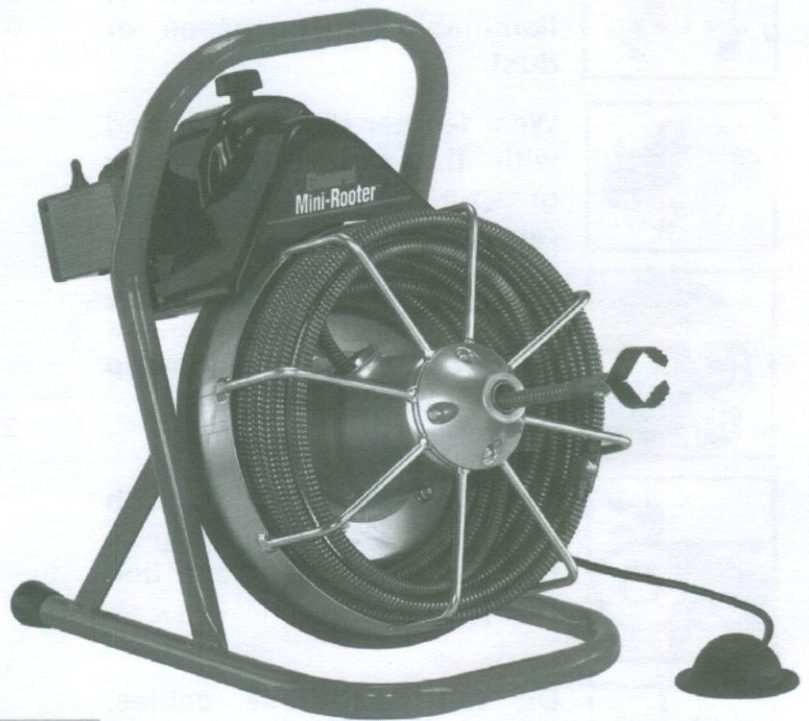


*Mini-Rooter*TM

Operating Instructions

For 1-1/4" through 4" lines
(30mm – 100mm)



Your Mini-Rooter is designed to give you years of trouble-free, profitable service. However, no machine is better than its operator. We therefore suggest you read these instructions through carefully before using your machine on the job. This will enable you to operate the Mini-Rooter more efficiently and more profitably. Failure to follow these instructions may cause personal injury to operator or damage to equipment.

SAVE THESE INSTRUCTIONS!

General

PIPE CLEANERS

Safety Instructions



WARNING



Machine must be plugged into properly grounded outlet. Failure to follow instructions may result in serious injury or death.



Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.



Wear leather gloves provided with the machine. Never grasp a rotating cable with a rag or cloth glove.



Use safety equipment. Always wear safety glasses and rubber soled, non-slip shoes.



Never operate machine with belt guard removed. Fingers can get caught between belt and pulley.



Do not overstress cables. Overstressing cables may cause twisting, kinking, or breaking of the cable and may result in serious injury.

READ AND UNDERSTAND ALL INSTRUCTIONS!

Failure to follow all instructions listed below may result in electric shock, fire and/or serious personal injury.

Call General's customer service department at 412-771-6300 if you have any questions.

SAVE THESE INSTRUCTIONS!

Work area safety

1. Keep your work area clean and well lit. Cluttered benches and 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 bystanders, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

Electrical safety

1. Grounded tools must be plugged into an outlet, properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with UL approved tester or a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tool should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
2. Machine must have a properly functioning ground fault circuit interrupter on the power cord. Before using, test the Ground Fault Circuit Interrupter (GFCI) provided with the power cord to insure it is operating correctly. GFCI reduces the risk of electric shock.
3. 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.
4. Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
5. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
6. When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor use and reduce the risk of electric shock.

7. **Use only three-wire extension cords which have three-prong grounding plugs and three-pole receptacles which accept the tool's plug.** Use of other extension cords will not ground the tool and increase the risk of electric shock.
8. **Use proper extension cords.** Insufficient conductor size will cause excessive voltage drop and loss of power.
9. **Extension cords are not recommended unless they are plugged into a Ground Fault Circuit Interrupter (GFCI) found in circuit boxes or outlet receptacles.** The GFCI on the machine power cord will not prevent electric shock from the extension cords.
10. **Keep all electric connections dry and off the ground. Do not touch plugs or tools with wet hands.** 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 tool while 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. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
3. **Avoid accidental starting. Be sure switch is off before plugging in.** Plugging in tools that have the switch on invites accidents.
4. **Remove adjusting keys or switches before turning the tool on.** A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
5. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the tool in unexpected situations.
6. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

Tool use and care

1. **Use clamp or other practical way 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.
2. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
3. **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. **Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventative safety measures reduce the risk of starting the tool accidentally.
5. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
6. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tool's operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
8. **Use only accessories that are recommended by the manufacturer for your model.** Accessories that may be suitable for one tool may become hazardous when used on another tool.
9. **Keep handles dry and clean; free from oil and grease.** Allows for better control of the tool.

Tool service

1. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified repair personnel could result in injury.
2. **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

Specific safety information

1. **Wear leather gloves provided with the machine. Never grasp a rotating cable with a rag or cloth glove.** Could become wrapped around cable and cause serious injury.
2. **Never operate machine with belt guard removed.** Fingers can get caught between belt and pulley.
3. **Do not overstress cables. Keep gloved hand on the cable for control when machine is running.** Overstressing cables because of an obstruction may cause twisting, kinking, or breaking of the cable and may result in serious injury.
4. **Position machine within two feet of drain opening.** Greater distances can result in cable twisting or kinking.
5. **Machine is designed for one-person operation.** Operator must control foot switch and cable.
6. **Do not operate machine in reverse (REV).** Operating machine in reverse can result in cable damage and is used only to back cutting tool out of an obstruction.
7. **Keep hands away from rotating drum and distributor tube. Do not reach into drum unless machine is unplugged.** Hand may be caught in the moving parts resulting in serious injury.
8. **Be careful when cleaning drains where cleaning chemicals have been used. Avoid direct contact with skin and eyes.** Drain cleaning chemicals can cause serious burns as well as damage the cable.
9. **Do not operate machine if operator or machine is standing in water.** Will increase risk of electrical shock.
10. **Wear safety glasses and rubber soled, non-slip shoes.** Use of this safety equipment may prevent serious injury.
11. **Before starting each job, check that the cable in the drum is not broken or kinked, by pulling the cable out and checking for wear or breakage.** Always replace worn out (kinked or broken) cables with genuine GENERAL replacement cables.
12. **Only use this tool in the application for which it was designed. Follow the instructions on the proper use of the machine.** Other uses or modifying the drain

cleaner for other applications may increase risk of injury.

Ground Fault Circuit Interrupter (GFCI)

Your machine is equipped with a ground fault circuit interrupter, which protects you against shock if a short circuit should occur. Check that receptacle is properly grounded. Test the GFCI before each use.

1. Plug into 120-volt receptacle.
2. Push test button. Indicator light will go out and power to machine should cut off.
3. If light does not go out when test button is pushed, equipment should not be used until proper repairs can be made.
4. To restore power after test, push reset button. With the reset button depressed, if the machine doesn't start, stops while running, or if the operator experiences a mild shock, **do not use the machine!** Take it to a motor repair center or return it to the factory for repairs.







Note: The section of cord between the wall plug and the GFCI is not in the protected circuit.

Cable Applications (Table 1)

Cable Size	Pipe Size	Typical Applications
1/2"	3" to 4"	Roof Stacks and Small Floor Drains (No roots)
3/8"	2" to 3"	Roof Stacks, Laundry Lines and Small Drains
*5/16"	1-1/2" to 2"	Sinks, Basins and Small Drains
*1/4"	1-1/4" to 2"	Small Lines, Tubs and Shower Drains

*The 1/4" and 5/16" diameter cables are for use with the J-Drum and Dual Drum.

Cutter Applications (Table 2)

Cutter	Cat. #	Typical Applications
Arrow Head 	AH	Starting tool, ideal for cutting and scraping.
Boring Gimlet 	BG	Starting tool, to remove loose objects.
1-1/2" U-Cutter 	1-1/2UC	Finishing tool, works well in grease stoppages.
2" Side Cutter Blade 	2SCB	Finishing tool, for scraping inside edges of pipe.

Note: There are no fixed rules for what cutter to use. If one tool doesn't take care of a stoppage, simply try another.

Operating Instructions

Set-up

1. Place machine within approximately two feet of drain opening. Greater distances can cause the cable to whip or kink. If you can't get the machine this close to the opening, run the cable through a metal guide tube.
2. Position the foot pedal for easy accessibility. The machine is designed for one-person operation. Be sure you can quickly remove your foot from the pedal in an emergency.
3. Be sure the motor switch is in the **off** position.
4. Select the proper cutting tool (See Cutter Application Chart—Table 2). A good tool to start with is the Arrow Head or Boring Gimlet. After the line is opened, follow with larger blades, which scrape the inside edges of the pipe, assuring a real cleaning job.
5. Insert the cutter into the female connector at the end of the 3/8" or 1/2" cable and tighten the connecting screw and lock washer *firmly* in place.



Operation

1. Begin by pulling the cable from the drum and sliding it into the drain as far as it will go.
2. Move the motor switch to the **forward** position.

3. With both hands (wearing *leather* gloves) on the cable, depress the air foot pedal to start machine.
4. Guide the rotating cable into the line and against the obstruction with a firm, even pressure. Do not force the cable - let the cutter do the work. The job won't go any faster and you could damage the cable.

DO NOT USE TOO MUCH FORCE – LET THE CUTTER DO THE WORK.

5. Don't leave too much slack in the cable since this will cause whipping. If the cable starts to bend or build up too much twist, release pressure on the foot pedal and rotate the drum in the opposite direction to relieve the twist on the cable. Push any excess cable back into the drum and then continue.
6. If you're having trouble getting around tight bends, try putting the machine in reverse while applying steady pressure. Don't do this for more than a few seconds at a time since this could cause tangling in the drum or kinking.
7. If you still can't get around the bend, you're probably using too large a cable. Switch to a 3/8" diameter cable, or even a smaller one if necessary. (See Cable Application Chart—Table 1)
8. Continue to feed cable slowly into line until resistance or obstruction is met. Then move the rotating cable back and forth to chew up the stoppage thoroughly.

Hint: It's often helpful to have a small stream of water running in the line to wash the cuttings away while the machine is in operation and after.

9. After the line has been opened, return the cable to the drum with the motor turning **forward**. This is important to prevent the cable from tangling in the drum or in the line.
10. When the cutting tool is near the drain opening, take your foot off the pedal to stop drum rotation. Never retract the cutting tool from drain while cable is rotating. The cable could whip and cause serious injury.

⚠ CAUTION

Do not use reverse to pull the cable out of the drain. Always run the machine in forward, whether you are feeding the cable into the line or pulling it out.

Power Cable Feed (Optional—Cat #PO-MR)

The variable speed Power Cable Feed is designed for use with 1/2" and 3/8" cables. If the feed was purchased separately, see "How to Install Power Cable Feed."



1. Be sure you have read and understand the instructions for manual feed before using the Power Cable Feed. Misuse of the feed can result in severe damage to the cable.
2. Put the feed control handle in the neutral position. Then, loosen the feed tension knob and pull three feet of cable from the drum.
3. Slide the guide tube (Cat #MR-GT) over the cable and snap the tube into place on the feed spout. (Be sure to remove the cutter and connecting screw from the female connector first. Reattach desired cutter to cable after guide tube is attached to feed.)
4. Place the machine as close as possible to the drain opening. The guide tube should extend into drain. Guide tube extensions (Cat #GTE) are also available.
5. Tighten the feed tension knob until the top roller contacts the cable. Then tighten the knob another two turns.



Note: In operation, use the least pressure possible to get the job done in order to minimize wear on the feed and cable.

6. Put the motor switch in the forward position (the drum rotates counter-clockwise when viewed from the front).
7. The feed lever controls the feeding rate and direction of the cable. Move the lever down to feed the cable out of the drum. The further the lever is moved downward, the faster the cable will feed out. Move the lever up to retract the cable into the drum. When the lever is in the middle (neutral) position, the cable will spin in place.
8. To clean a drain line, place the end of the cable into the drain opening. Depress the air foot pedal and feed the cable slowly forward. Adjust the feeding speed until resistance is met. Don't feed faster than the cable is going into the drain line. Too much slack between the machine and drain opening can cause the cable to whip and kink.
9. When the cable reaches stoppage, put the feed in neutral. Then allow the cable to progress forward slowly, chewing into stoppage as it goes. This slow movement will reduce stress on cable while doing a more thorough cleaning job. A back and forth motion often works best.
10. Move the feed lever to the reverse position (upward) to retract the cable. If more pulling power is required, the motor may be put in reverse and the feed lever moved downward to forward position.

⚠ CAUTION

Running in reverse could cause cable tangling. Change motor to forward rotation periodically to relieve cable twist.

Special operations

IF CABLE GETS CAUGHT IN LINE

The motor can be reversed to free cable if it gets caught in the line. Use the following procedure:

1. Move the toggle switch on motor to reverse position.
2. Pull the cable out of the drain while the drum is rotating in reverse.
3. When the cable has been freed, move the toggle switch to the forward position.



Note: Do not run motor in reverse for more than a few seconds at a time since this could cause tangling in the drum or kinking.

IF CABLE TANGLES IN DRUM

This is caused by using too much pressure when feeding the cable or by feeding the cable while running the machine in reverse. To untangle cable, rotate drum in opposite direction. This will usually get the cable to lie in the drum properly.

If cable has become severely tangled, which shouldn't occur if used properly, it can be straightened out by removing the distributor tube from the drum. To do this:

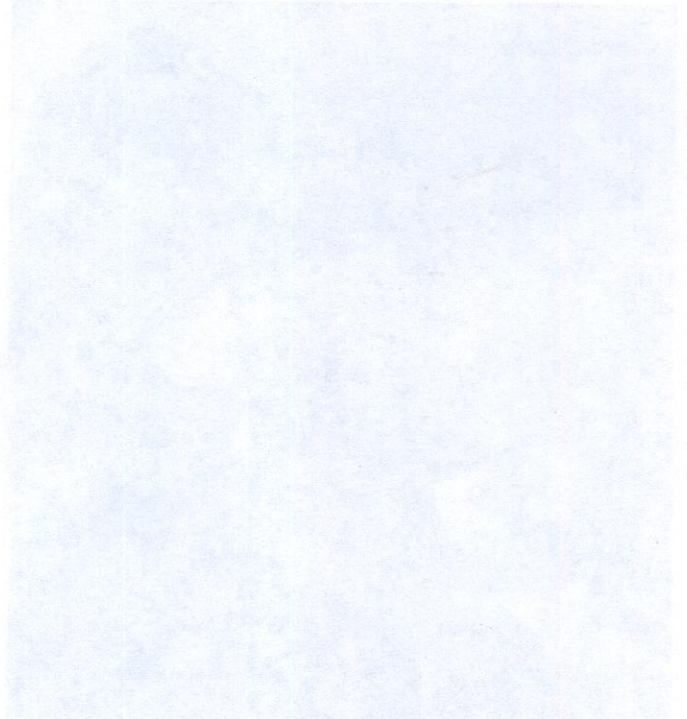
1. Loosen the four bolts that hold the distributor tube cone on the front of the drum.
2. Pull the cone and distributor tube forward, then pull the tangled portion of the cable out of the drum.
3. After the cable has been straightened out, slide the distributor tube and cone back along the cable until it can be repositioned and bolted to the front of the drum.
4. Then, push the excess cable back into the drum.

3. Remove V-Belt and rotate the drum to the right or clockwise, rotating faster while pushing cable into the drum's 2" (51mm) diameter.

ACCESSORIES

HOW TO USE J-DRUM (Optional—Call 214-248-2601)

The J-Drum holds 50 feet of 1/4" or 3/16" cable or is used when you need to clear kinked 1/4" to 3/16" lines. These cables have a ferris plug head and can be spun through most standard cross-section. (See Cable Application Chart—Table 1)



1. To install cable, open chuck jaws fully so the cable will pass through easily.
2. Slide the back end of the cable (opposite to the end with brass ferris) through spool and into the drum. The cable will go easier to install if you bend the last inch of cable at a 45 degree angle.
3. When working through difficult stoppage or tight bends, tighten the chuck to provide more force and to prevent the cable from sliding to the drum.
4. Clean and lubricate chuck regularly to prevent corrosion.