

Drain-Rooter™

Operating Instructions

**For 1-1/4" through 3" lines
(30mm – 75mm)**



Your Drain-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 Drain-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



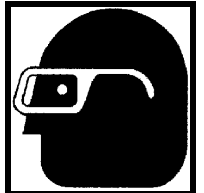
Machine must be plugged into properly grounded outlet. Failure to follow instructions may result in serious injury or death.



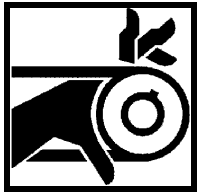
Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.



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 guard removed. Fingers can get caught in the mechanism.



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.
4. **Do not let visitors contact the tool or extension cord.** Such preventative measures reduce the risk of injury.

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. **Double insulated tools are equipped with a polarized plug (one blade is wider than the other).** This plug will fit a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. **Do not change the plug in any way.** Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.
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. **Inspect tool and extension cords periodically and replace if damaged.** Damaged cords increase risk of electrical shock.
10. **Keep handles dry and clean; free from oil and grease.** Allows for better control of the tool.
11. **Store tools in dry place.** Such measures reduce the risk of electrical shock.

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. **Be sure that the unit is plugged into a properly grounded receptacle.** If in doubt, check receptacle before plugging in machine. Check the power cord to see that there are no cuts or frays, and that the grounding prong on the plug is still in place.
2. The Skil drive unit used in the Drain-Rooter is double insulated, and therefore has no grounding wire. **To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other).** The plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If the plug still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.
3. **If the power cord supplied with the machine is not long enough, be sure to use a 16 gauge heavy duty extension cord no more than 50 feet long and in good condition.** Using lighter cords can result in severe power loss and motor overheating.
4. **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.
5. **Never operate machine with guard removed.** Fingers can get caught in the mechanism.
6. **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.
7. **Position machine within two feet of drain opening.** Greater distances can result in cable twisting or kinking. If you can't get the machine this close to the drain opening, run the cable through metal tubing or conduit to prevent cable whipping and kinking.
8. **Machine is designed for one-person operation.** Operator must control foot switch and cable.

9. **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.
10. **Wear rubber boots and rubber glove inserts when work area is wet. Do not operate machine if operator or machine is standing in water.** Will increase risk of electrical shock.
11. **Wear safety glasses and rubber soled, non-slip shoes.** Use of this safety equipment may prevent serious injury.
12. **Before starting each job, check that the cable in the drum/cage 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.
13. **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.



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

Variable Speed Switch

A variable speed control is built into the trigger mechanism. You can control and increase the machine's speed by applying more pressure to the foot pedal until you get the speed that you want.






You can also control the machine's direction of rotation by switching the forward and reverse lever, which is located just above the trigger switch. Move the lever toward the Forward arrow for forward rotation and toward the Back arrow for reverse rotation.

Cable Application Chart (Table 1)

Cable Size	Pipe Size	Typical Applications
1/4"	1-1/4" to 2"	Small lines, tubes, and shower drains.
5/16"	1-1/2" to 2"	Sinks, basins, and small drains.
3/8"	2" to 3"	Stacks, toilets, small drains (Not Roots).

The 1/4" and 5/16" diameter cables with EL-Basin plug heads can be spun through most strainer crossbars and work well in lines blocked by soft stoppages such as hair, soap, fats, etc.

Cutter Application Chart (Table 2)

Cutter	Catalog #	Typical Applications
Arrow Head 	AH	Ideal for heavy cutting and scraping.
Flexible Arrow Head 	FAH	More flexibility than Arrow Head; can take sharp turns in small lines.
Boring Gimlet 	BG	To remove or retrieve loose objects.
Down Head Boring Gimlet 	DHBG	Leads cable down drain line rather than up vent or across tee.
1-1/4" Side Cutter 	1-1/4SCB	Works well in grease stoppages, scrapes walls of pipe.

Operating Instructions

- Place the machine within approximately 2 feet of the drain opening. If you can't get the machine this close to the opening, run the cable through a hose or pipe to prevent cable whipping.
- Loosen the chuck. Hand feed the cable into the drain until you reach some resistance. Then tighten the chuck.
- Make sure the Forward/Off/Reverse switch is in the **Forward** position.
- With both gloved hands on the cable, start the machine by stepping gently on the foot pedal. The harder you press on the pedal, the faster the variable speed motor will rotate and the faster the cable will feed.
- Feed the cable carefully. Use the variable speed pedal to adjust speed as resistance is met. Don't feed faster than the cable can go into the drain. Too much cable between the power cable feed and drain will cause whipping and kinking.

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

- 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, take your foot off the 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.
- When the cable reaches the stoppage, move

the cable back and forth as the drum is rotating until the stoppage has been cleared.

- If you're having trouble getting around bends, try putting the machine in reverse while applying steady pressure to the cable. Don't do this for more than a few seconds at a time since this could cause the cable to tangle or kink in the drum.

CAUTION

Do not use reverse to pull the cable out of the drain. Always run your machine in **Forward**, whether you are feeding the cable into the line or pulling it out. Use reverse **only** to release cable if it should become caught in the line.

- If you still can't get the cable around the bend, you're probably using a cable that's too large in diameter. Switch to a smaller diameter cable if necessary. (See Table 1 - Cable Applications)
- After the line has been opened, return the cable to the drum with the motor switch in the **Forward** position. This is important to prevent cable tangling in the drum.



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.

IF CABLE GETS CAUGHT IN LINE

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

- Move the motor switch to the Reverse position.
- Tighten the chuck against the cable.
- Pull on the cable while the drum is turning in reverse.
- When the cable has been freed, loosen the chuck and move the motor switch to the Forward position.

IF CABLE TANGLES IN DRUM

This is caused by using too much pressure when feeding the cable or by feeding the cable while running in reverse.

- To untangle, rotate the drum in the opposite direction to relieve the twist.
- If the cable has become badly tangled, disassemble the drum by loosening the screws around the rim of the drum and pull the container front off the drum. (Note: Open cage units cannot be disassembled.)
- Pull the cable completely out of the drum shell.

Then reassemble the drum.

4. Straighten the cable out and push it back in the drum.

(See “To Install Cable into Drum” below.)

TO INSTALL CABLE IN DRUM

1. Loosen chuck on the drum so that the cable can pass through easily.
2. Push the back of the cable through the spout into the drum.
3. It will be easier to load the cable if you put a slight bend in the cable about one inch from the end.

MAINTENANCE






To keep your machine operating smoothly, it is essential that all bearings and bushings be lubricated. Oiling moving parts is particularly important where machine comes in contact with sand, grit, and other abrasive material.

CABLE MAINTENANCE

To get maximum service from your cables, be sure that they are clean and well oiled. This not only provides running lubrication, but greatly extends the life of the cables as well. Our SNAKE OIL is ideally suited for this purpose, since it not only lubricates the cables, it deodorizes them as well.

TROUBLE SHOOTING GUIDE (Table 3)

Problem	Probable Cause	Solution
Cable kinks or breaks.	Operator forcing the cable.	Do not force the cable. Let the cutter do the work.
	Too much slack between machine and drain.	Do not allow more than six inches between machine and drain.
	Cable used in wrong size drain line.	A cable that is too large or too small in diameter for a line is more likely to kink. (Consult Table 1—Cable Applications.)
	Cable exposed to acid	Clean and oil cables regularly.
Cable tangles in drum/cage.	Operator forcing the cable.	Do not force the cable. Let the cutter do the work.
	Machine run in reverse.	Do not run machine in reverse to retract cable from drain. Use reverse only if cable is caught in line.
Motor does not run.	Trigger in neutral (off) position.	Switch Trigger to either Forward or Reverse.
Motor turns in one direction but not other.	Reverse switch failure.	Replace reverse switch.

Symbol	Name	Symbol	Name
V	Volts		Action direction or arrow
A	Amperes		Alternating current
Hz	Hertz		Designates double insulated
n _o	No load speed		Designates this tool is listed by Underwriters Laboratories
.../min	Revolutions per minute		Designates this tool is listed by Canadian Standards Association

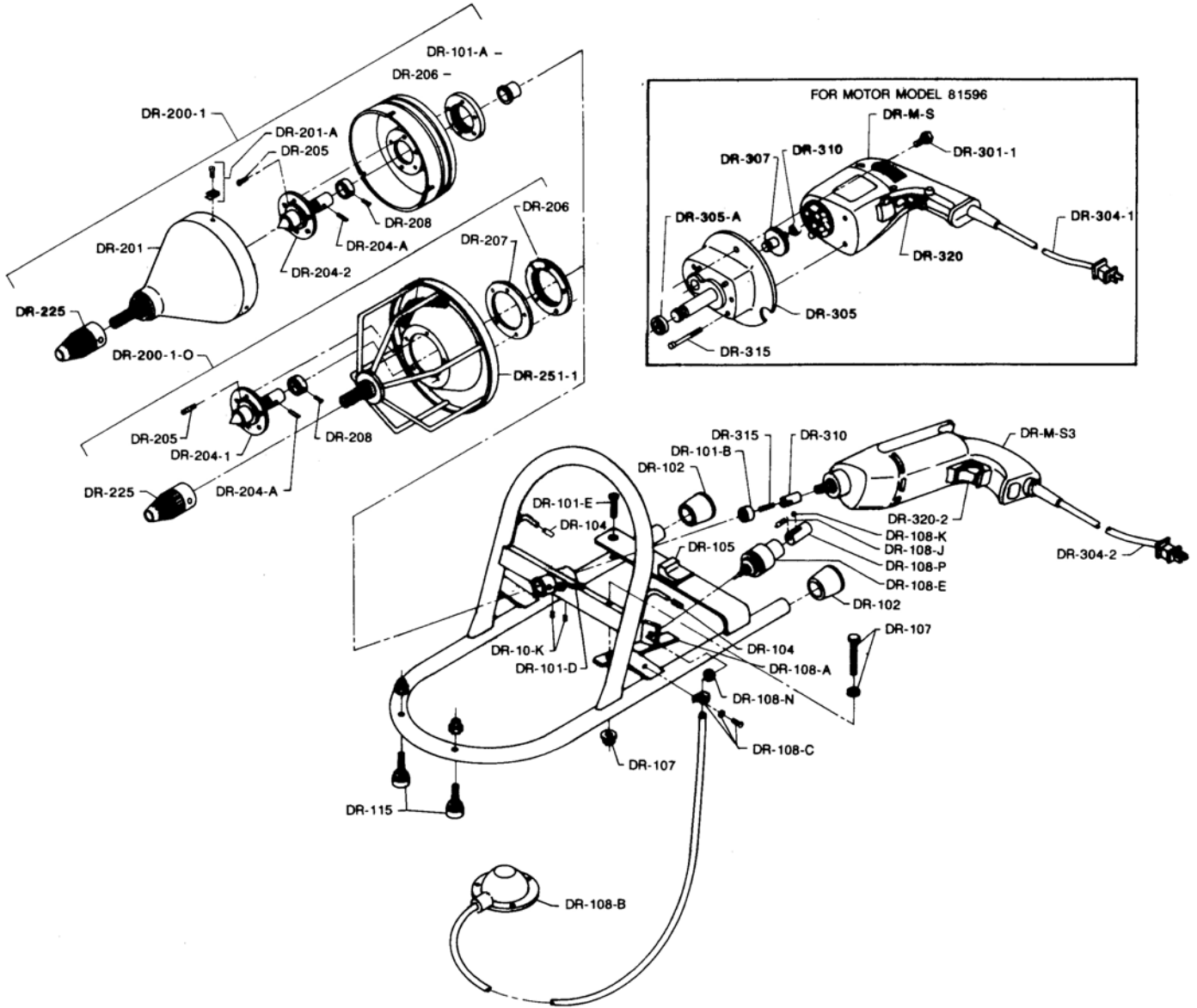
DRAIN-ROOTER

Parts List

CAT. NO.	DESCRIPTION	CAT. NO.	DESCRIPTION
DR-100	Frame Complete for Black & Decker Motor	DR-202	Container Back
DR-100-1	Frame Complete for Skil Motor	DR-204	Hub for B&D Motor
DR-101	Frame Only for B&D Motor	DR-204-1	Hub for Skil Motor
DR-101-1	Frame Only for Skil Motor	DR-204-A	Set Screw
DR-101-A	Bushing (2)	DR-205	Screws and Nuts for Hub (5)
DR-102	Rubber Leg Tips (2)	DR-206	Internal Ring Gear for Skil Motor
DR-104	Shaft Retaining Pin for B&D Motor	DR-207	Shim
DR-104-1	Drum Retaining Latch for Skil Motor	DR-210	Container Shaft for B&D Motor
DR-104-A	Drum Latch Cap	DR-210-A	Roll Pin
DR-105	Retaining Pin Spring for B&D Motor	DR-215	Collar
DR-105-1	Retaining Latch Spring for Skil Motor	DR-225	Chuck
DR-106	Retaining pin Collar with Cap Screw for B&D Motor	DR-200-O	Open Cage for B&D Motor
DR-106-1	Retaining Latch Support Bracket for Skil Motor	DR-20-1-O	Open Cage for Skil Motor
DR-107	Nuts, Bolts, & Washers (2)	DR-251	Cage Only for B&D Motor
DR-108	Switch Actuator Assembly for B&D Motor	DR-251-1	Cage Only for Skil Motor
DR-108-1	Switch Actuator Assembly for Skil Motor	DR-252	Cable Retaining Spring
DR-108-A	Switch Support Bracket	DR-253	Retaining Nut
DR-108-B	Foot Pedal and Hose	DR-254	Washer
DR-108-C	Cable Tie	DR-260	Open Cage Shaft for B&D Motor
DR-108-D	Foot Pedal	DR-260-A	Roll Pin
DR-108-E	Switch Actuator with Piston for B&D Motor	DR-225	Chuck
DR-108-1-E	Switch Actuator with Piston for Skil Motor	DR-300	B&D Drill Motor
DR-108-F	Hose	DR-300-1	Skil Motor Assembly
DR-108-G	Nut, Bolt, and Washer for Bracket	DR-M-S	Skil Motor Only
DR-108-H	Clamp and Screw	DR-301	Bolts & Washers for B&D Motor
DR-200	Container Complete for B&D Motor	DR-301-1	Bolts & Nuts for Skil Motor
DR-200-1	Container Complete for Skil Motor	DR-304	Power Cord for B&D Motor
DR-201	Container Front with Spindle	DR-304-1	Power Cord for Skil Motor
DR-201-A	Screws and Clips (3)	DR-305	Gear Case Body for Skil Motor
		DR-305-A	Thrust Bearing
		DR-307	Pinion Gear Assembly for Skil Motor
		DR-310	Spacer Washer
		DR-315	Fillister Head Screws (4)
		DR-320	Variable Speed Trigger Switch for Skil Motor

SEE BACK COVER FOR SCHEMATIC DIAGRAM

DRAIN-ROOTER Schematic Diagram



IMPORTANT: When ordering, give Serial Number of Machine

General Wire Spring Co.
1101 Thompson Avenue
McKees Rocks, PA 15136