

*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.



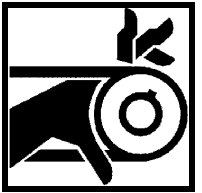
Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.



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.

HOW TO REMOVE DRUM FROM MACHINE

1. Push down on the spring-loaded motor and slide the V-Belt off the back of the drum.
2. Reach behind the drum and locate the drum retaining latch. Pull the latch to release the drum shaft, then pull the drum forward off of the machine.
3. To install the drum, simply slide drum onto machine. The latch will lock automatically.
4. Remove the belt guard by loosening retaining knob on top. Position the V-Belt around the drum, then press down on the motor and slip V-belt onto the pulley. Be sure to reattach the belt guard.

HOW TO INSTALL 1/2" AND 3/8" CABLES IN DRUM

1. There is a socket inside the drum for the back end of the cable. Rotate the drum so that the socket is at the bottom.
2. Position the distributor tube so that it is pointing downward.
3. Push the cable into the drum until there is a full loop in the drum.
4. Reach into the drum, grasp the cable, and bend it into the socket.

5. Remove V-Belt and rotate the drum to the right, or clockwise, with one hand while pushing cable into the drum with the other hand.



Note: The cable should lay in the drum in a clockwise direction.

Accessories**HOW TO USE J-DRUM**

(Optional—Cat #MR-250)

The J-Drum holds 50 feet of 1/4" or 5/16" cable to be used when you need to clear smaller 1-1/4" to 2" lines. These cables have a basin plug head that can be spun through most strainer crossbars. (See Cable Application Chart—Table 1)



1. To install cable, open chuck jaws fully so that cable will pass through easily.
2. Slide the back end of the cable (opposite to the end with basin head) through spout and into the drum. The cable will be easier to install if you bend the last inch of cable at a 45 degree angle.
3. When working through difficult stoppages or tight bends, tighten the chuck to provide more torque and to prevent the cable from tangling in the drum.
4. Clean and lubricate chuck regularly to prevent corrosion.

HOW TO USE DUAL-DRUM

(Optional—Cat #MR-280)

The Dual-Drum holds two different diameter cables at the same time. Inner and outer drum compartments protect the cable from tangling. You can easily switch from 1/4" to 5/16" or 3/8" cables without removing either one from the drum.

1. Install 1/4" cable into the Dual-Drum by sliding the back end of the cable (opposite to end with basin head) through spout and into the inner drum. The cable will be easier to install if you bend the last inch of cable at a 45 degree angle.
2. Install the 5/16" or 3/8" cable into the outer drum by sliding the back end of the cable (opposite to the end with the Female connector) through the spout. Reach one hand into the drum through one of the three ports in the face of the drum and pull the cable end to the left side of the outer drum. Then push another two feet of cable into the drum while pulling the cable downward to form a loop. The cable should lay in the drum in a clockwise direction.



Note: Use HE cables only in Dual-Drum—not EM cables.

3. Select the appropriate cable for the line you are working on. (See Cable Application Chart—Table 1) If a 1/4" cable is required, reach into the Dual-Drum and pull the cable out of the inner drum and through the spout. If a larger cable is required, slide the 1/4" cable back through the spout, then reach into the drum and pull the 5/16" or 3/8" cable from the outer drum through the spout.
4. Each of the cables can be "chucked" in place to provide more torque by pressing the knurled knob against the spring and tightening it against the cable.

HOW TO INSTALL DOLLY

(Optional—Cat #MR-W)

The dolly makes it easy to transport the Mini-Router to and from the job. Designed especially for the Mini-Router, it snaps on and off in seconds and holds the machine securely.

To install:

1. Hold the dolly horizontally above the Mini-Router with the wheels toward the back of the machine.

2. Tilt the top of the dolly down so the hooks on the mid-point of the dolly slip under the top crossbar of the machine. Then, lower the wheels to the ground.
3. Step behind the machine. With one foot on the axle, tilt the machine back.
4. Swing the locking brackets over the rear gussets and tighten the knobs on either side to hold the dolly securely in place.

**HOW TO INSTALL POWER CABLE FEED (OPTIONAL)**

1. Put the feed control lever in the neutral (middle) position, then loosen the feed tension adjustment knob until the top feed roller lifts out of the way.
2. Pull several feet of cable from drum. Remove cutter and connecting screw from cable.
3. Fully loosen upper clamp knob on the feed support bracket and snap the clamp over the Mini-Router's upper frame. Center the feed over the drum spout and slide the cable through the feed rollers. Then moderately tighten the knob.
4. Loosen the two lower clamp cap screws to allow the clamps to fit over the lower frame. Note that the "short" clamp half should be closest to the floor.

5. It may be necessary to loosen and re-adjust the upper tube length to get the correct fit. Loosen the two set screws in the upper tube and slide the assembly to get the best fit.
6. When alignment is correct, tighten the lower clamp set screws. Screws should **not** be fully tightened. Make snug only so that the bracket is able to pivot.
7. Fully tighten the upper tube set screws.
8. Test the bracket by loosening the knob and swinging the feed assembly outward. It should disengage and swing smoothly.
9. Swing the feed assembly back and the clamp should snap into the locked position. Tighten the knob to secure the feed for operation. Do not attempt to use or transport the unit unless the upper clamp knob is tightened.

Maintenance

To keep your machine operating smoothly, it is essential that all bearings and distributor tube 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. Some users periodically pour oil directly into the drum. Then, as the drum turns, the cables get complete lubrication. Our SNAKE OIL is ideally suited for this purpose, since it not only lubricates the cables, it disinfects and deodorizes them as well.

FEED MAINTENANCE

Keep feed free of excessive soil and grit. It is recommended that the feed be flushed with fresh water followed by a light oiling of the moving parts. No disassembly is normally required. Failure to feed can usually be traced to the following possibilities:

DIRT ACCUMULATION: Over time, dirt can harden enough to stop roller rotation. Flushing with water followed by liberal oiling can usually restore function. If disassembly is required, proceed as follows:

1. Remove the feed tension knob, springs and spring plunger. Note the positioning of these parts to ease re-assembly. The top roller can now be removed.
2. Remove the snap rings and thrust washers from the bottom housing cylinders. The bottom rollers can now be removed.
3. Re-assembly is done in reverse order.

DAMAGED ROLLER: Excessive use may wear a roller to the point of failure. It is recommended that all three rollers be replaced at the same time (Cat # PO-MR-703).

TANGLED CABLE: If a cable loops over itself in the drum, it will not feed properly. Remove and reload the cable by hand to restore function. If the cable kinks, it is evidence of abuse and results from the use of too much pressure or use of the wrong size cable for the line. Do not force the cable — Let the cutter do the work.

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.	Allow no more than two feet 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	Operator forcing the cable.	Do not force the cable. Let the cutter do the work.
	Machine running in reverse.	Do not run the machine in reverse to retract the cable from the drain.
	Distributor tube frozen.	Lubricate distributor tube bushings.
Drum stops while foot pedal depressed.	Hole in pedal or hose.	Replace as required.
	Hole in diaphragm switch	If no hole found in pedal or hose, replace diaphragm switch.
Drum turns in one direction but not other.	Reverse switch failure.	Replace reverse switch.
Ground fault circuit interrupter trips and will not reset.	Damaged power cord or extension cord.	Replace cords.
	Short circuit in motor.	Take motor to authorized repair center.
	Faulty ground fault circuit interrupter	Replace ground fault circuit interrupter.
Motor turns but cage does not.	Safety Slip Clutch engaged.	Do not force cable.
Failure to feed	Cable tangled in drum.	Do not run machine in reverse. Use proper cable size. (Consult Cable Application Chart—Table 1).
	Feed misadjusted	If feed tension knob is too loose the cable will slip. If it is too tight the feed rollers will wear prematurely.
	Feed roller frozen.	Clean and lubricate feed rollers regularly. Replace worn rollers.
	Worn cable.	When cable coils wear flat, cable should be replaced.

MINI-ROOTER Parts List

CAT. NO.	DESCRIPTION	CAT. NO.	DESCRIPTION
MR-100-1	Complete Frame Assembly	MR-260-1	Collet Chuck Assembly (Serial #23647 & Over)
MR-101-1	Frame Only	MR-280	Dual Drum (for 1/4", 5/16", 3/8" cables)
MR-102	Rubber Leg Tip (2)	MR-281	Container Front
MR-104	Shaft Retaining Pin	MR-281-A	Screws and Nuts (4)
MR-104-A	Retaining Pin Spring	MR-282	Container Back
MR-104-B	Retaining Pin Collar	MR-283	Chucking Assembly
MR-105	Shaft Spacer	MR-283-A	Chuck Body
MR-200	Complete Drum Assem. (Enclosed)	MR-283-B	Knurled Knob
MR-200-O	Complete Drum Assembly (Open)	MR-283-C	Spring
MR-200-1	Drum with Modified Dist. Tube	MR-283-D	Screw
MR-200-2	Drum with Inner Drum Cage	MR-284	Hub with Bushing (MR-201-A-2)
MR-201-2	Drum Shell (Ser. #21566 & Over)	MR-284-A	Nuts and Bolts (5)
MR-201-A-2	Rear Hub Assembly w/ Bushing (Serial #21566 & Over)	MR-285	Washer
MR-201-A-3	Rear Hub Assembly for Inner Drum	MR-286	Shaft w/ Snap Rings & Washers
MR-201-C	Screws, Nuts & Lockwashers (5)	MR-286-A	Snap Rings (2)
MR-201-D	Rear Hub Bushing	MR-286-B	Steel Washer
MR-201-E	Retaining Screw	MR-286-C	Felt Washer
MR-201/202-1	Comp. Shaft & Hub Assy. Disc. (Serial #09200 to #21565)	MR-287	Collar with Set Screw
MR-201/202-2	Complete Shaft & Hub Assembly (Serial #21566 & Over)	MR-291	Internal Container Front
MR-202	Shaft	MR-292	Internal Container Back
MR-202-A	Retaining Ring (2)	MR-292-A	Nuts, Lockwashers & Thumb Nuts (4)
MR-202-B	Steel Washer	MR-293	Bevelled Collar
MR-202-C	Felt Washer	MR-300	Motor 1/3 hp with GFCI, Foot Switch & Reverse Switch
MR-203	Drum Front Only (See MR-201-2)	A-MR-300	Motor with Slip Clutch, GFCI, Foot Switch & Reverse Switch
MR-203-B	Edging (2)	MR-301-A	10 ft. Cord with GFCI
MR-204-1	Distributor Tube	MR-301-B	Knob for Mounting Stud
MR-204-A	Distributor Tube Rear Collar with Set Screw	MR-303	V-Belt Pulley
MR-204-B	Distributor Tube Front Collar with Set Screw	MR-303-1	Safety Clutch
MR-204-2	Distributor Tube & Inner Drum	MR-304-1	Motor Support with Bolts, Nuts, Washers (Serial #08627 & Over)
MR-205	Fiber Washer (2)	MR-304-A	Guide Screws (2)
MR-206	Front Hub	MR-305	Motor Support Spring
MR-206-A	Front Hub Bushing	MR-306	V-Belt (45")
MR-207	Round Head Cap Screw & Lockwashers (4)	MR-307-1	V-Belt Guard with Velcro
MR-210	Drum Connecting Cable	MR-307-2	Belt Guard with Slot for Mounting Stud
MR-210-A	Conn. Cable Bolt, Nut & Washer	MR-308	Foot Switch & Reverse Switch Assembly (Serial #14933 & Over)
MR-215	Distributor Tube Modification Kit	MR-308-A	Box Only w/ Cover & Screws
MR-250	"J" Drum (for 1/4" & 5/16" Cables)	MR-308-B	Foot Pedal & Hose
MR-251-1	Rear Shell (Serial #21566 & Over)	MR-308-C	Hose Clamp (2)
MR-255	Front Assy.-Jacobs Chuck Disc. (Through Serial #23646)	MR-308-D	Foot Pedal Only
MR-255-1	Front Assembly for Collet Chuck (Serial #23647 & Over)	MR-308-E	Power Switch Diaphragm
MR-255-A	Spout Assy.-Jacobs Chuck Disc. (Through Serial #23646)	MR-308-F	Air Hose
MR-255-A-1	Spout Assembly for Collet Chuck (Serial #23647 & Over)	MR-308-G	Reverse Switch (3-way)
MR-255-B	Bushing	MR-308-H	Rubber Boot (Open Cage Units Only)
MR-257	Shaft for "J" Drum	MR-308-J	Barbed Adapter
MR-260	Jacobs Chuck Assembly (Through Serial #23646)	MR-208-N	Strain Relief Nut
		GFI-MR	Ground Fault Circuit Interrupter
		PO-MR	Mini-Router Power Cable Feed
		MR-GT	Guide Tube
		MR-DECAL	Set of Safety Decals
		MR-VIDEO	Instructional Video
		EM3R8	Adapter

See back cover for Mini-Router Schematic Diagram.

