

TENADURA

Electric Drain Cleaner

Operating Manual



Please read through this manual carefully before using these products, and retain it for future reference. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with instructions could result in personal injury and/or damage to product or property.

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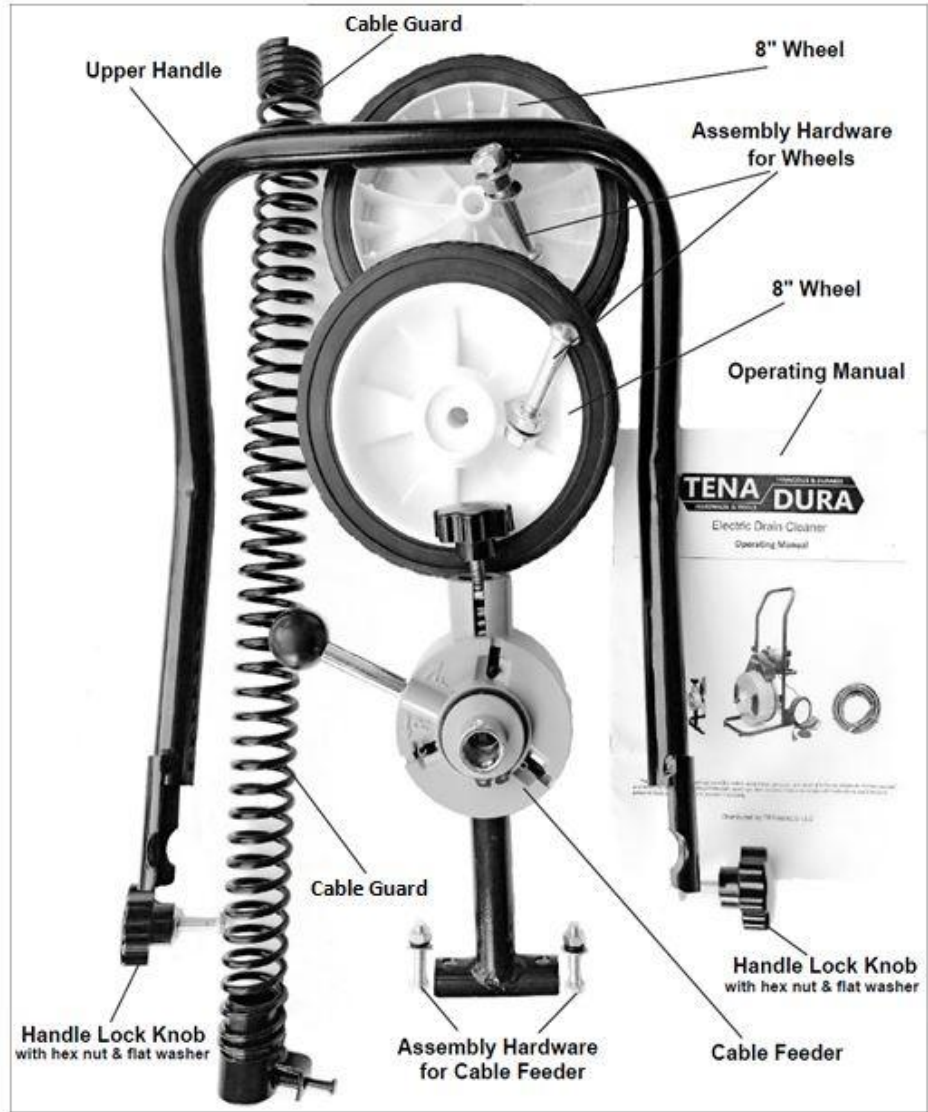
Description

This drain cleaning machine is a power tool designed for cleaning drainage and heating lines commonly used in restaurants, hotels, manufactures, large businesses, ships, and buildings. The machine is powered by a motor, which drives a drum by belt. The drum holds and spins a cable, which comes out of the drum through a hole in the front hub (center). The motor runs with 120V~, 60 Hz and a current of 5.3 Amps. It has 1/3 horse power and runs 1716 RPM when unloaded. The cable is manually fed in and out of the drain. Optional cable feeder and cable guard can be installed in front of the drum. The cable feeder drives the cable or retracts the cable at about 20 feet per minute. The cable guard is used with Cable feeder to protect fixtures and avoid cable tangling.

Unpacking

The box should contain the following components in addition to the machine body. Refer to the photo on the right.

1. Two boxes, each with 1 wheel, 1 round-head bolt axle, 2 washers and 1 nut,
2. one (machine) upper handle,
3. one operating manual,
4. one cable feeder with 2 sets of lock bolt, flat washer, spring washer and nut, and
5. one cable guard.
6. Two sets of lock bolts, washers and handle lock knobs.



Should any of these components be missing, please contact your vender ASAP.

Safety Symbols

Please refer to the following symbols for the level of danger. Operators should be aware of the dangers when the machine is misused.

- ▲ DANGER** Warns about hazards that will cause serious personal injury, death, or major property damage if ignored.
- ▲ WARNING** Warns about hazards that could cause severe personal injury, death, or major property damage if ignored.
- ▲ CAUTION** Warns about hazards that may cause minor personal injury or property damage if ignored.
- NOTICE** Indicates factors concerned with assembly, installation, operation, or maintenance, which could result in damage to the machine or equipment if ignored.

▲ WARNING Please read this operator's manual carefully. Ignoring this manual may result in electric shock, fire and/or serious personal injury.

General Safety Rules

Important Safety Instructions

▲ WARNING When using electric appliances, basic precautions should always be followed, including but not limited to the following:

1. Read all the instructions before using the appliance.
2. To reduce the risk of injury, close supervision is necessary when the appliance is used near children.
3. Do not touch moving parts.
4. Only use attachments recommended or sold by the manufacturer.
5. Do not use outdoors when raining.
6. For a cord-connected appliance, perform the following steps:
 - To disconnect, turn all controls to the off ("O") position, then remove plug from outlet.
 - Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
 - Unplug from outlet when not in use and before servicing or cleaning.
 - Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner. Return appliance to the nearest Authorized Service Center for examination, repair, or electrical or mechanical adjustment.
7. For a portable appliance – To reduce the risk of electrical shock, do not place the motor in water or other liquids. Do not place or store appliance where it can fall or be pulled into a tub or sink.
8. For a grounded appliance – Connect to a properly grounded outlet only. See Grounding Instructions.

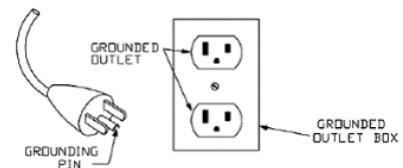
Grounding Instructions

This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

▲ DANGER Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The insulated conductor that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This appliance is for use on a nominal 120 V circuit, and has a grounding plug that looks like the plug illustrated in the figure. The temporary adaptor should be used only until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear, lug, and the like, extending from the adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by the metal screw.



Working Area and Safety

1. Do not let water get into the power tools. If the machine is wet, do not operate it until it is dry. Do not operate machine when it is standing in water. This will increase risk of electrical shock.
2. Wear safety equipment (gloves and rubber soled, non-slip shoes) and apply safety procedures when working area is wet. Place the machine on a dry surface.
3. Never operate machines in explosive environments, including areas with flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
4. Be cautious when cleaning drains with cleaning chemicals being applied. Do not let the chemicals directly contact skin, eyes and/or the cable. These chemicals can cause serious burns to the skin and eyes as well as damaging the cable.
5. Have a second person supervise when working in a narrow space or special environment, such as in a boiler room, inside a pipe, or on a wet surface. Failure to do so may cause serious injury or death.

6. Keep bystanders, children, and visitors away while operating the power machine. Distractions by others may lead to losing control.
7. Keep working area well lit, neat and clean. Dark zones and cluttered messes cause unpredictable accidents.

Electric Safety

1. The machine is equipped with a Ground Fault Circuit Interrupter (GFCI), which protects you against shock if short circuit should occur. Check that the receptacle is properly grounded. Test the GFCI before each use. The testing procedure is given below:
 - a) Plug machine into a receptacle with the machine-specified voltage.
 - b) Push the test button. Indicator light will go out and power to machine will cut off.
 - c) **▲WARNING** If light does not go out when the test button is pushed, equipment should not be used until proper repairs or replacement to the GFCI are made.
 - d) To restore power after test, push reset button.



▲WARNING With the reset button untouched, if the machine does not start, or stops while running, or if you experience a mild shock, do not use the machine! Have it repaired or replaced by a licensed technician.

NOTICE When using an extension cord, the GFCI on the drain cleaner does not protect the extension cord. If the outlet is not GFCI protected, it is advisable to use a plug in type GFCI between the outlet and the extension cord to reduce the risk of shock if there is a fault in the extension cord.

2. When working with the machine outside, use a specially designed outdoor extension cord. This kind of cord reduces the risk of electric shock. Use only three-wire extension cords which have three-pronged 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. Insufficient conductor size will cause excessive voltage drop and loss of power. When using extension cords, a GFCI must be used in circuit boxes or outlet receptacles. Extension cords without a GFCI can also cause electric shock.
3. Grounded tools must be plugged into a properly installed and grounded outlet, which is in accordance with all safety codes and ordinances. Never modify the plug in any manner. Do not remove the grounding pin. Never use any adapter plugs. Check for plugs with UL approved testers or consult with a certified electrician if you are not sure whether the power source is properly grounded. Should the electrical tool malfunction or stop working, grounding gives a safe way to keep the operator from electrical shock.
4. Use a straight electric plug, so that the operator can cut the power off immediately by pulling the plug off the seat on the wall. In addition, check the shock protector to make sure it works properly. Failure to follow instructions may result in serious injury or death.
5. Never leave the power machine in rain or in wet conditions. Wet machines often cause electric shock.
6. Do not allow your body to contact any grounded surfaces such as radiators and refrigerators. It is very dangerous to be electrically shocked when your body is grounded.
7. Never abuse the electrical cord. Do not use the cord to pull the plug from an outlet and do not use the cord to carry the machine. Keep the cord away from heat, oil, sharp edges and/or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.
8. Never touch plugs or tools with wet hands. Keep all electrical connectors dry and off the ground to reduce the risk of electric shock.
9. Use machine's rated power to specify fuses on your power supply. Never use other metal wires to replace the specified fuses. Failure to follow this rule may cause serious injury or even death.

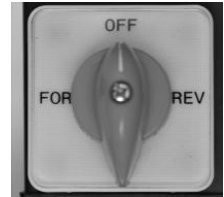
Personal Safety

1. Wear proper working attire, rubber-soled non-slip shoes, safety glasses, dust mask, hard hat, hearing protection and leather gloves when operating the machine. Failure to follow this rule may cause serious injury or even death.

▲WARNING Never grasp a rotating cable with a rag or cloth glove. Grasping the rotational cable may cause one's hand or fingers to be caught on the cable and lead to personal injury.

2. Never operate machine with belt guard removed. Keep hands away from pulley and belts. Fingers can get caught between belt and pulley.
3. Keep hands away from the rotating drum and distributing cone. Do not reach into the drum unless the machine is unplugged. Hand may be caught in the moving parts resulting in serious injury.

4. Be alert at all times. Keep good judgment when operating a machine. Never operate machine under influence of fatigue, drugs, alcohol or medications.
5. Dress neatly. Do not wear loose clothing or jewelry. Keep hair tied and/or tucked away. Keep long hair, clothes, and gloves away from moving parts. Such articles may result in serious injury or death when caught in the machine.
6. Avoid accidental starting of the machine. Make sure the rotation switch (also called main power switch or main switch) is set at OFF position before plugging in. Plugging in tools that have the switch on invites accidents.



NOTICE This machine has a rotation switch and an air-activated foot switch. The rotation switch is used to set the motor and drum rotating direction. It has three positions, representing forward rotation (**FOR**), no rotation (**OFF**), and reverse rotation (**REV**), respectively. When ready to work, set the rotation switch to FOR and then press the foot switch to let the machine run in the forward direction. Stop machine first and wait for few seconds to allow the machine to stop before changing the rotation direction.

7. Make sure adjusting keys are removed before turning the tool on. A wrench or key that is thrown from a rotating part of the machine can result in serious personal injury or death.
8. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the machine in unexpected situations.

Operation Safety

1. Do not operate this machine if you are not trained to do so. Inexperienced operation can cause accidental injuries or deaths.
2. This machine is designed for one-person operation. Both the Foot Switch and the rotating cable must be controlled by the same operator.
3. Position machine within two feet of drain operation. Greater distances can result in cable damage.
4. Do not let machine work in reverse rotation except described in below situation. Operating machine in reverse rotation can result in cable damage. The reverse option is ONLY used to retrieve cable out of an obstruction.
5. Do not force the cable into a pipe. 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.
6. After the drain-cleaning work, disconnect the plug from the power source after cleaning the working area or completing any maintenance work. This can prevent from accidentally starting the tool.

Tool Use and Care Safety

Use a clamp or another practical way to secure and support the work pieces to a stable platform. Holding the work by hand or against your body is unstable and may lead to loss of control.

1. 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.
2. Do not use tool if switch does not turn the machine on or off. Any tool that cannot be controlled with the switch is dangerous and must be repaired.
3. Disconnect the plug from the power source before making any adjustments or storing the tool. Such preventative safety measures reduce the risk of starting the tool accidentally.
4. Store idle tools out of reach of children and other untrained people. Tools are dangerous in the hands of untrained users.
5. 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.
6. Check for misalignment or binding of moving parts, breakage of parts, or 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.
7. 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.
8. Keep handles dry and clean, free from oil and grease.
9. Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified repair personnel could result in injury.
10. 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.
11. Maintain and checkup the machine routinely. Make sure all electrical wires and parts are working properly. Never use the machine when it is malfunctioning.
12. Safe-guard the cleaning parts to prevent them from being damaged.

Specific Safety Information

1. Before starting each job, pull the cable out of the drum to make sure the cable in the drum is not broken or kinked. Always replace worn (kinked or broken) cables with genuine replacement cables.
2. 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.

Assembly and Disassembly

▲ WARNING Turn the Rotation Switch (or the Main Switch) to OFF and unplug before assembly and disassembly.

Tools needed for assembly include two 3/4" wrenches, two 1/2" wrenches, and one 3/8" wrench. Please refer to the Assembly Diagram at the end of this manual for part numbers (PN#) mentioned in the following instructions.

Wheel Mounting

1. Insert the round-head bolt (PN#26) into the wheel's hub hole (PN#25) from the wheel's flatter side.
2. Secure the wheel with a pair of flat washer and nut (PN#24 and PN#23).
3. Insert the bolt with the wheel into the mounting hole on the bracket of the main frame (PN#21). Make sure to align the flat cut of the bolt horizontally. Slightly knock on the round head of the bolt if it cannot be pushed in by hand.
4. Secure the axle with another pair of flat washer and nut (PN# 24 and PN#23). Tighten the nuts on both sides of the bracket with 3/4" wrenches.
5. Mount the wheel on the other bracket in the same way.



Handle Mounting

1. Attach the machine upper handle (PN#42) onto the main frame (PN#21). Make sure the holes on both sides align.
2. Insert the locking bolt (PN#44) through the holes outward and add the washer to the bolt.
3. Tighten with the lock knob (PN#43).
4. Secure the other side in the same way.



Cable Installation and Removal

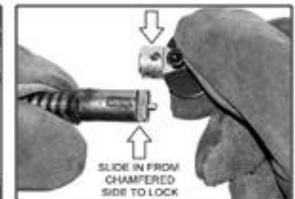
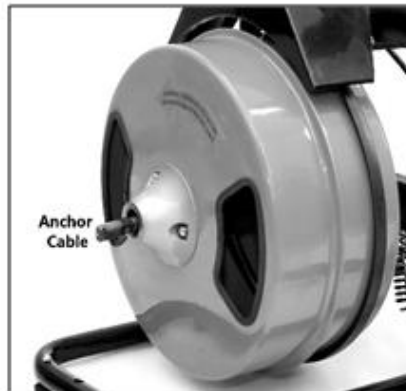
Five different cable sizes can be used with this machine for cleaning different sizes of pipes. Most machines come with the cable installed. The following instructions are prepared for future cable change.

For easy cable installation, an anchor cable (PN#9) with its one end was installed on the inside of the drum (PN#11) at factory. This anchor cable has a male connector at the other end.

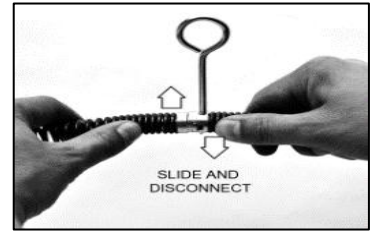
All cable from the factory has a female connector at one end and a male connector at the other end. For easy connection and disconnection, the notch at the female end has one side chamfered.

To connect a cable to the machine, simply hold the female connector end with one hand and aim its chamfered side to the popup portion of the male connector on the anchor cable, and slide all the way into each other until a click is heard.

Optional Cable	Applicable pipe
Ø3/8" × 50ft	1-1/2in to 3in ID
Ø3/8" × 75ft	
Ø3/8" × 100ft	2in to 4in ID
Ø1/2" × 50ft	
Ø1/2" × 75ft	



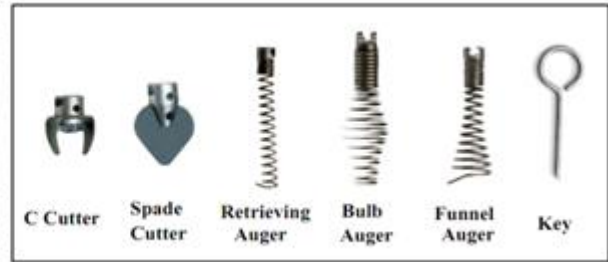
To put the cable into the drum, simply push the cable with hands gently into the drum through the front hub bushing (PN#6). To remove the cable from the drum, simply pull the cable out of the drum until its end comes out of the drum. To disconnect the cable from the anchor cable, insert the key (PN#50) into the hole on the cable's female connector until it stops. This pushes the pin back and allows the sliding motion. Hold the anchor cable's male end still with one hand and slide the cable's female end off with another hand.



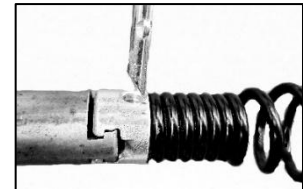
NOTICE The cable should lay in the drum in the clockwise direction viewing in front of the drum.

Cutter Installation and Removal

The machine comes with 5 cutters (PN#45, 46, 47, 48, 49) and 1 key (PN#50). They are attached on the cutter hanger installed on the frame. These cutters can be exchanged depending on the application.



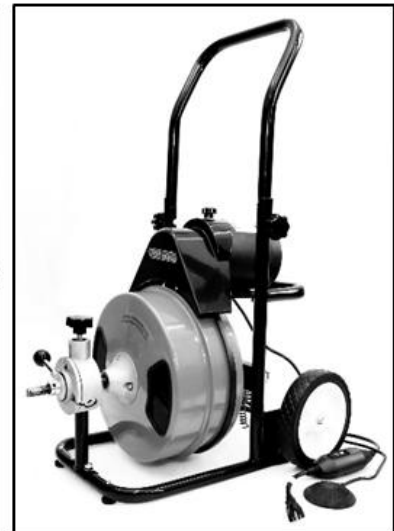
All cutters have a female connection end. Their installation and removal operations are the same as cable installation and disconnection in relation to the anchor cable. Please refer to the above section for details.



Cable Feeder (Optional) Installation

To install the cable feeder (PN#2) on the main frame (PN#21), follow these steps:

1. Find flat ground and lay the machine down gently.
2. Insert the cable through the cable feeder's opening slowly and carefully. Loosen the tension knob on the cable feeder if necessary.
3. Place the mounting bracket at the bottom of the cable feeder on the frame and make sure the holes are aligned.
4. Insert bolts (PN#3a) through holes from the bottom and secure with flat washers, spring washers and nuts (PN#3b, 3c, and 3d) by hands. Do not tighten them yet.
5. Set the machine upright. Make sure the cable feeder is vertically up on the frame.
6. Tighten the nuts with 1/2" wrench to secure the cable feeder on the frame.



Cable Guard (Optional) Installation

NOTICE Cable guard can only be used when cable feeder is used.

To install the cable guard (PN#1)

1. Remove the cutter from the cable.
2. Align the lock pin on the adapting end of the cable guard (PN#1) with the hole on the cable feeder's front tube (cable guard adapter).
3. Slide the cable guard onto the adapter while lifting the lock pin on the cable guard with one hand.

- Secure the cable guard (PN#1) on the cable feeder by releasing the lock pin to let it slide into the hole.



Cable Guard (Optional) Removal

- Pull the lock pin on the cable guard (PN#1) all the way up.
- Slide it away from the cable feeder.

Belt Removal / Installation



To remove the drum, motor, or to replace a worn belt, the belt must be removed first. Ask other to help if necessary.

- Make sure the power cord and air pipe are not wound on the frame.
- Unfasten the belt cover knob (PN#39) and take off the plastic belt cover (PN#35).
- Push the motor (PN#41) down with body weight to suppress the motor adjusting spring (PN#32) inside the motor support Pipe and shorten the distance from the pulley (PN#37) to the Drum (PN#11).

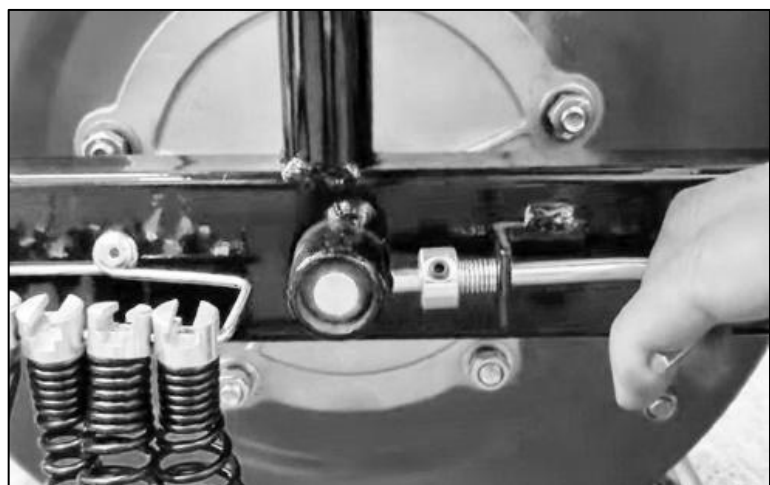


CAUTION Do not push the control box. Push the Motor only.

- Slide the belt toward the back until it leaves the drum. Then take it off from the pulley and take it out around the drum.
- To put the belt on, reverse the above procedure.

Drum Removal and Installation

- Remove cable feeder if available. Ask for a helper if necessary.
- Remove the plastic belt cover (PN#35) by following the above procedure.
- Find the drum shaft lock puller (PN#27) at the back of the main frame (PN#21). Pull the puller to unlock the drum shaft, and then remove the drum (PN#11) off the frame.
- To install the drum, reverse the above steps.



Operations

▲ WARNING



Always wear safety glasses, proper gloves, and other appropriate protective equipment when operating your drain cleaner.

Set-up

1. The machine is designed for one-person operation. Be sure the main power switch (rotation switch) on the motor control box is set to OFF position before operating.



▲ CAUTION Do not touch the cable with bare hand. Always keep a gloved hand on the cable.

2. Place machine within approximately 2 feet from drain opening.
3. Position the rubber foot switch (PN#41a) near your favorite foot. Be sure you can quickly remove your foot from the rubber foot switch in an emergency.
4. Select the proper cutter and attach it on the cable. The spade cutter (PN#46) or bulb auger (PN#48) is good tool to start with. After the pipe is opened, follow with larger blades, which scrape the inside wall of the pipe, assuring a real cleaning job.
5. Slide the male end of the cutter into the female end of the cable until there is a click sound.



▲ CAUTION Do not leave too much slack on the cable between the machine and the drain opening, because this will cause whipping. If the cable starts to bend or build up too much twist, relieve the twist by turning on the opposite direction. Push any excess cable back into the drum and then continue.

NOTICE There should only be one person controlling the cable and the foot switch. Do not operate the drain cleaner by controlling the cable and the switch with two different people. This may cause the cable to kink, twist and break, which can also cause serious personal injury.

Operation without Cable Feeder

1. Pull the cable by gloved hand from the drum and slide it at least one foot into drain. Make sure the cutter and the cable will not come out of the drain opening and whip around when the machine is started.
2. Turn the Main Switch to **FOR** position. Hold the cable by gloved hand and activate the Rubber Foot Switch by pressing with one foot to start the drum rotation.
3. Slide the cable toward the drain and feed the rotating cable into the drain slowly.
4. If the cutter gets caught in the stoppage as you try to work through it, this can result in the cable to be kinked and even to be broken. When you feel the cable starting to twist in your hands, immediately remove your foot from the Rubber Foot Switch (PN#41a) and stop the machine. Then pull the cable back a little. This will free the cutter from the stoppage it meets. Then feed the cable again to move forward slowly into the stoppage. Remember, no cutting takes place when the cutter stops turning.
5. If the cable becomes lodged in the drain, use sharp downward thrust while the cable is turning. Then try again when the cable is not turning.
6. If the lodging is caused by a bend and you have difficulty getting the cable to pass the bend, you probably need a thinner cable. Try to use a 3/8" diameter cable or even a smaller one if necessary.

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

7. After the line is opened, retrieve the cable from the drain line and push it back into the drum while the Rotation Switch is set in the **FOR** position. This is important to prevent the cable from tangling in the drum or in the line.

▲WARNING Do not set the Rotation Switch in REV when pulling the cable out of the drain line. Always run the machine in FOR rotation, whether you are feeding the cable into the line or pulling it out.

▲WARNING When the cutter is near the drain opening, remove your foot from the Rubber Foot Switch (PN#41a) to stop drum rotation. Never retract the cutter from drain while cable is rotating. The cable could whip and cause serious injury.

Operation with Cable Feeder (Optional)

1. Pull the cable by gloved hand from the drum and slide it at least one foot into drain. Make sure the cutter and the cable will not come out of the drain opening and whip around when the machine is started.
2. Tighten the knob on the top of the cable feeder until the cable feeder roller touches the cable. Then make one more turn on the knob.

NOTICE Do not over tighten since this could cause excess cable wear. The cable feeder is designed for use with 1/2" and 3/8" cables only.

3. The cable feeder lever controls the feeding rate and feeding direction of the cable.

Hold the lever up to the **F** position (**F** means feeding forward) to pull the cable out of the drum and feed it forward into the drain. The stronger the lever is pushed up to the **F** side, the faster the cable will feed.

Hold the lever down to **R** position (**R** means retracting back) to retract the cable from the drain and feed it back into the drum.

When the lever is held in the Middle position, the cable will neither go forward or backward, but rotate with the drum.

4. Turn the Main Switch to **FOR** position. Grab the guard tube or cable with a gloved hand, and place your other hand on the cable feeder lever, which should be in the middle position. Press the rubber foot switch (PN#41a) with your foot to start the machine.
5. Hold the cable feeder lever up to **F** side with a firm, even pressure and feed the cable into the drain line. When the resistance is met, adjust the feeding rate by changing the force on the cable feeder lever. Do not force the cable – let the cutter do the work.

NOTICE Large force will not get the job done any faster and the cable might become damaged.

6. If you have trouble getting around a tight bend, try to run the machine instantly in **REV** rotation while applying steady pressure.

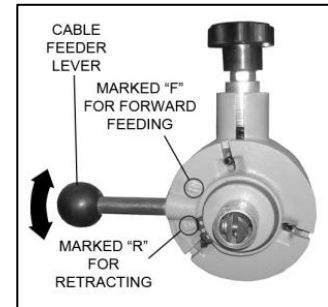
NOTICE Do not do this for more than a few seconds at a time since this could cause cable tangling in the drum or kinking.

7. If you still cannot pass the bend, the cable size is probably too large. Change it to a 3/8" diameter cable.
8. When the cable reaches the stoppage, put the cable feeder lever in middle position first. Then push the cable forward by hand with a mild force. Do not use the cable feeder. Let the cutter chew the stoppage as it goes. This slow forward movement will reduce stress on the cable while doing a more thorough cleaning job. A back and forth action often works best.

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.

9. If the cutter gets caught in the stoppage as you try to work through it, this can result in the cable to be kinked and even to be broken. When you feel the cable starting to twist in your hands, immediately remove your foot from the rubber foot switch (PN#41a) and stop the machine. Then pull the cable back a little. This will free the cutter from the stoppage it meets. Then feed the cable again to move forward slowly into the stoppage. Remember, no cutting takes place when the cutter stops turning.
10. After the line is opened, retrieve the cable from the drain and return it to the drum with the rotation switch being set to **FOR** position while the cable feeder lever being held down at **R** Side. This is important in order to prevent the cable from tangling in the drum or in the line.

▲WARNING Do not use REV rotation to pull the cable out of the drain. Always run the machine with the Rotation Switch set to FOR position, whether you are feeding the cable into the line or pulling it out.



⚠ WARNING When the cutter is near the drain opening, remove your foot from the Rubber Foot Switch (PN#41a) to stop drum rotation. Never retract the cutter from drain while cable is rotating. The cable could whip and cause serious injury.

Special Operations When Cable Gets Stuck In Line

The motor can be reversed to free cable if the cable gets stuck in the line as below:

1. Set the cable feeder lever to middle position and turn the rotation switch to **REV** position.
2. Depress the rubber foot switch (PN#41a) a few seconds and pull the cable back with gloved hand while the drum is rotating in reverse direction.

NOTICE Do not run motor in reverse direction for more than a few seconds each time since this could cause cable tangling in the drum or kinking.

3. When the cable has been freed, turn the rotation switch to **FOR** position.

⚠ WARNING: You **MUST** unplug the machine and turn the rotation switch to **OFF** position and take your feet away from the rubber foot switch. Failing to do this may cause accidental starting and injury.

To untangle cable, pull the tangled cable out of the drum with hand slowly and check if the cable is damaged carefully. And then slowly push the cable into the drum through front hub bushing (PN#6) and make sure the cable winds in the drum in the clockwise direction.

If cable becomes severely tangled, which should not occur when used properly, you will need to replace it with a new cable.

Major Maintenance and Part Replacement

⚠ WARNING Set the rotation switch to **OFF** and unplug the machine before any maintenance. Wear necessary safety equipment for protection.

Machine Cleaning

When needed, the machine can be cleaned with hot, soapy water and/or disinfectants.

NOTICE Do not allow water to enter motor or other electrical components. Make sure unit is completely dry before use.

Cable Maintenance

To obtain maximum service from your cables, be sure that after each use they are cleaned with water, air dried, and well coated with proper lubrication oil (such as SAE 10W-30). This not only provides running lubrication but greatly extends the life of the cables as well. You can periodically pour oil directly into the drum. As the drum turns, the cables get complete lubrication. You can also wipe the lubrication oil on the cable with a cloth.

Cable Feeder (Optional) Maintenance

Keep cable feeder free of excessive soil and grit. It is recommended that the cable feeder be flushed with fresh water using a hose followed by air-drying the unit and then a lubrication oil of the moving parts. No disassembly is normally required. If dirt is hard enough to stop the roller's rotation and flushing it with water does not restore its function, then disassembling the cable feeder is necessary.

Parts List

No.	Description	Qty	No.	Description	Qty
1	Optional Cable Guard	1	25	8" Wheel	2
2	Optional Cable Feeder	1	26	M12x71 Round Head Bolt	2
3a	M8x45 Hex Head Bolt	2	27	Drum Shaft Lock Puller	1
3b	Ø8 Flat Washer	17	28	Puller Spring	1
3c	Ø8 Spring Washer	11	29	Puller Retaining Sleeve	1
3d	M8 Nut	11	30	M5x5 Inner Hex Set Screw	1
4	Optional Cable	1	31	M8x20 Hex Head Bolt	4
5a	M6x16 Round Head Bolt	3	32	Motor Adjusting Spring	1
5b	Ø6 Spring Washer	3	33	M6x10 Inner Hex Round Head Bolt	1
6	Front Hub	1	34	Motor Support Plate	1
7	Inner Guide Pipe	1	35	Plastic Belt Cover	1
8	Flat Washer	1	36	Belt	1
9	Anchor Cable	1	37	Pulley	1
10a	M8x Round Head Bolt	1	38	M6x16 Inner Hex Set Screw	1
10b	M8 Lock Nut	1	39	Belt Cover Knob	1
11	Drum	1	40	Big Flat Washer	1
12	Drum Shaft	1	41	Motor Set	1
13	Rear Hub	1	41a	Rubber Foot Switch	1
14	M8x20 Hex Head Bolt	5	41b	GFCI & Power Cord	1
15	Plastic Washer	1	42	Upper Handle	1
16	Shaft Retaining Sleeve	1	43	Handle Lock Knob	2
17	M8x8 Inner Hex Set Screw	1	44	M8x35 Hex Head Bolt	2
18	M5 Lock Nut	2	45	C Cutter	1
19	Black Rubber Foot	2	46	Spade Cutter	1
20	M5x35 Round Head Bolt	2	47	Retrieving Auger	1
21	Main Frame	1	48	Bulb Auger	1
22	Black Rubber Round Cap	2	49	Funnel Auger	1
23	M12 Nut	4	50	Key	1
24	Ø12 Flat Washer	4	51	Cutter Hanger	1

