

Volume

1.3

OPERATIONAL MANUAL

MODEL: S75 SECTIONAL DRAIN CLEANING MACHINE



by BLUEROCK® Tools

S 75 PIPE DRAIN CLEANER

UNPACKING THE ITEM

Caution: This machine is packed together with items that may be sharp, oily and overly heavy objects. Remove the machine from the packaging in a safe manner. Check to ensure all accessories are included with the item while unpacking. If any parts are found to be missing, contact the retailer as soon as possible. Do not throw away the packaging until the item is out of the guarantee period. Dispose of the packaging in an environmentally responsible manner. Recycle if possible. Keep all plastic bags away from children due to risk of suffocation.



WEEE - Waste Electrical & Electronic Equipment. Note this machine should be disposed of as electrical & electronic waste.

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Safety

DO NOT USE THIS MACHINE UNLESS YOU HAVE READ THE OPERATING INSTRUCTIONS!



Safety glasses must be worn at all times in work areas. Use a full face mask whenever possible.



Long and loose hair must be contained.



Appropriate footwear must be worn.



Close fitting/protective clothing must be worn.



Safety gloves should be worn at all times and jewelry must not be worn.



Hearing protection should be worn when using this machine.



Read operational manual prior to use.

PRE-OPERATIONAL SAFETY CHECKS

- Examine the power cord and plug for damage.
- Examine the body of the machine and inspect for damage or defects.
- Examine the cable and cutters to insure they are operable.
- Make certain the on/off switch is in the off position before plugging into power to prevent unintentional starting.

OPERATIONAL SAFETY CHECKS

- ONLY to be operated by qualified personal who have read instructions.
 - NOTE: Failure to read and follow instructions could result in electrical shock, fire, property damage and/or serious injury!
- DO ensure all non-essential people are clear of the immediate work area.
- DO keep body parts, clothing & power cords clear of turning pieces. Stay alert and use common sense when using this tool.
- DO always wear gloves when using this machine. Make sure not grasp turning cable with rags or gloves that are loose fitting. Loose fitting gloves or rags can become wrapped around or lodged in-between cable causing serious injury.
- DO always wear eye protection to protect eyes from debris, fluids, chemicals or other compounds.

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➤	DO always non-slip rubber soled shoes.
➤	DO be extremely careful when cleaning drains where chemical cleaning compounds have been previously used.
➤	DO only use this machine on a properly grounded circuit in accordance with all local and national standards. DO NOT remove the grounding plug. If in doubt that this machine is properly grounded, consult an electrician.
➤	DO always use relevant safety measures when working electrical machinery. Be aware that working in pipe drains can cause water puddles, so make sure to use GFCI's when necessary and personal protection devices like insulated gloves, shoes and insulated standing pads.
➤	DO remove adjusting keys or wrenches prior to turning machine on.
➤	DO guard against electric shock by preventing body contact with grounded surfaces such as pipes, radiators, ranges, refrigerators, etc.
➤	DO keep the working area clean and brightly illuminated for optimum operational safety.
➤	DO keep the machine balanced and stable at all times.
➤	DO be mindful that power tools can expose an operator to vibrations transmitted through contact with the machine. Prolonged exposure can lead to medical issues, which should be discussed with a medical professional.
➤	DO NOT make adjustments to machine while the machine is running.
➤	DO NOT use cable exceeding 130' (30M) from the machine. This could damage the machine.
➤	DO NOT leave the machine running when not in use.
➤	DO NOT hold drainpipe by hand or using the body. Always mechanically clamp or secure work pieces that are not fixed.
➤	DO NOT allow liquids or dust to enter the machine's ventilation system.
➤	DO NOT operate machine outside of machine specifications.
➤	DO NOT touch moving parts while the machine is running as death or dismemberment could occur.
➤	DO NOT remove machine's panels while machine is connected to a power source. Only to be removed for service by qualified personal and put back on the machine after service is complete.
➤	DO NOT allow children or untrained personal to operate machine.
➤	DO NOT use this machine in the rain or a wet environment. If using outdoors, make sure the machine is clean and dry.
➤	DO NOT operate in the presence of explosive materials as power tools create sparks which may ignite dust or fumes.
➤	DO NOT use on a pipe that may contain a live electrical wire/circuit.
➤	DO NOT use this machine if the ON/OFF switch is broken.
➤	DO NOT operate this machine on the same work surface where welding is being performed. This could result in severe damage to the machine or personal injury to the user.
➤	DO NOT operate this machine on a lower voltage as this could limit the motor life and work efficiency.
○	NOTE: Use of long small gauge power extension cords can result in decreased voltage. As local voltages can vary, it may be a good idea to test the voltage at the end of the extension cord to ensure proper voltage requirements are met. You might also consult an electrician to make sure the length of cord matches up with the proper wire gauge for this size motor. Make sure to use outdoor cords when operating outdoors. Use a GFCI circuit at all times.

Specifications

<i>ELECTRICAL DATA</i>	
Voltage	110V, 60Hz Induction 1/6hp Motor
Current	4 Amps
Motor Size	400W
Power Connection	US Standard 3 Prong Grounded Plug
GFCI	Yes, Inline on power cable

<i>MECHANICAL DATA</i>	
Pipe Capacity	3/4" to 4" Diameter (20mm-100mm)
Max Run-out (total amount of cable you can put on machine)	130' (30M)
Gearbox	Forward and Reverse
Gear Housing	Aluminum
Machine Speed	400RMP
On/Off Switch	Manual

<i>SHIPPING DATA</i>	
Shipping Weight	63lbs
Shipping Carton	18" x 18" x 18"

Included Accessories

<i>DESCRIPTION</i>	<i>QTY</i>
Instruction Manual	1
8 Piece 5/8" (16mm) Diameter Sectional Cables. 7.5' (2.3m) each (1pc with built in permanent flexible bulb auger, 7 pc standard soft shaft with male and female connectors). Interchangeable with RIDGID® C-8	1
Bulb Auger w/18' cable	1
5' Rubber Safety Hose	1
Cable Bits/Drills	8
Bit Key	1

Additional Available Accessories

Additional accessories for this machine can be found in BLUEROCK® Tools online shop at www.bluerocktools.com or from your local retailer.

Operations

Note

THOROUGHLY READ THROUGH THE ENTIRE MANUAL BEFORE OPERATING THIS MACHINE!

PURPOSE

- The purpose of the S75 is for cleaning the insides of drainpipes from 3/4" to 4" in diameter. This is a heavy-duty professional use machine allowing a single user to easily clean pipes.
- This type of sectional drain cleaner uses individually lengths (sections) of cleaning cable. This machine uses 8' sections, which can be added or subtracted during cleaning operations.
 - Maximum length of any particular run should be 130' (30M).

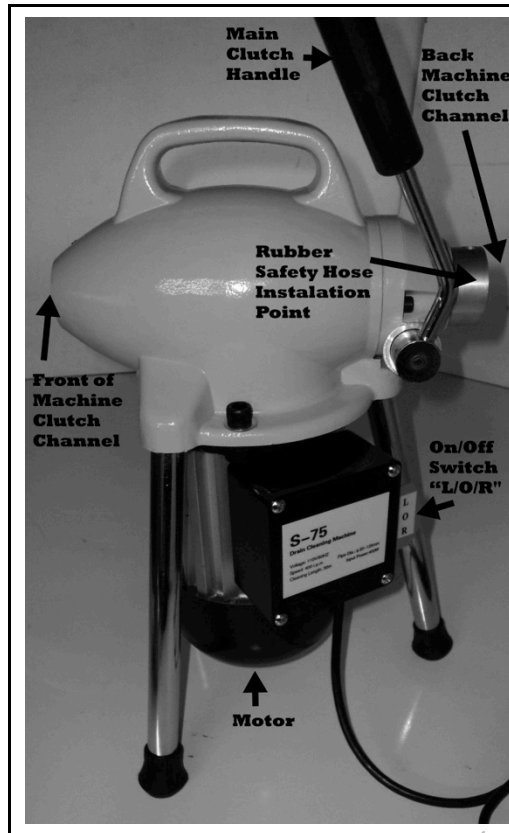
MACHINE SET-UP

- The machine is designed pre-assembled. The user must only take the item out of the shipping box.
 - DO NOT allow the cord or plug to drag along the floor when wheeling between locations.
- Make certain the work area is dry.
 - DO NOT place the machine in water.
- Use barriers to keep non-essential personal away from rotating drain cable or other moving parts.
- Place machine away from passageways and make certain the operator is able to see all parts of the work-piece.
- DO NOT set-up or modify the machine in a manner that is not intended.

MACHINE COMPONENTS

- The main components of the S75 are the motor housing, rotating clutch channel and main machine frame assembly (see figure below). The motor drives the clutch rotationally and acts as the main drive component of the machine.
 - These components must be not be removed except by a qualified technician. Power must be disconnected prior to any service.
- The machine has a main on/off switch with a forward and reverse position. These switches operate the turning mechanism, which turn the machine clutch. When the motor switch is turned on, the user is able to pull clutch handle, which starts the clutch rotation. When the handle is released the rotation immediately stops.

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PREPERATION FOR USING MACHINE

- **CAUTION:** Before making any adjustments, ensure the main machine switch is in the "O" off position.
- **CAUTION:** Before starting your job, it is vital to be aware of the distance from the sewer inlet pipe to the main sewer pipe or septic tank. Overrunning the cable into large spaces can cause cable to form "knots" and prevent the cable from being returned through the smaller pipe line. Avoid going into main sewer lines farther than 10'. Avoid going into sewer tanks more than 3'.
- **Clutch operations**
 - To rotationally engage the clutch, pull the clutch handle down (towards the ground). The user must hold the handle in the down position to keep the clutch rotating. To disengage the clutch, allow the clutch handle to move to the up position (towards the ceiling).
 - **NOTE:** Sectional drain cleaners do not spin the drain cleaner cable in/out (towards/away) from the drain clog. Sections of the cable must be individually connected and manually fed to the point of the clog. When the drain cleaner end reaches the point of the clog, the user engages the clutch to spin the cutter in a forward of reverse rotation.
 - **CAUTION:** Keep hands and fingers away from the clutch jaws and cutting pieces when the machine is plugged into a power source. Closing clutch jaws can cause serious damage to bodily parts.
- **Main On/Off Switch Operations**
 - "O" indicates "off" position.
 - "L" indicates counter-clockwise rotation.
 - "R" indicates clockwise rotation.

➤ **Rubber Safety Hose Operations**

- The rubber safety hose is attached to the back of the machine clutch channel.
- **CAUTION:** The rubber safety hose must be installed. It protects the user from potential “whipping” action of the end of the sectional cable. Without it installed, damage to persons or property are possible.

➤ **Bulb Auger Operations**

- To connect the bulb auger, take out approximately 1’ of cable. Put the cable through from the back of the clutch channel until the cable is through. Lock the bulb auger in using the round clip. Make certain it is locked in (see figure below for specifics of how it assembles).



➤ **Drain cutter operations**


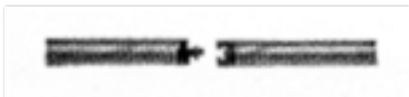

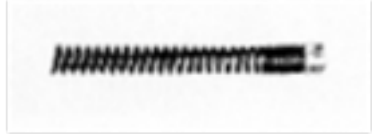



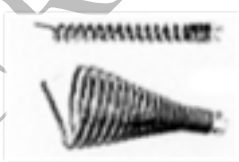




- The drain cutters attach to the end of the drain cleaner cable. These are only attached on the front side of the machine cable.
- Attach the drain cleaner cutter once the end of the cable has been inserted into the front of the machine clutch channel.
 - Insert cutter and head facing T groove. The cutter will only install in one direction. Push in the cutter until the pin locks the coupling.
 - To remove the cutter, use the key (straight metal pin with sharp flat side). Put the key in the hole on the cutter until the pin depresses. When it is depressed, the cutter should slide out of the T groove.



- There are a variety of drain cutters available for these units (see cutter/accessory table below).

- When deciding which cutter to use, the user should choose a cutter size that is at least 1" smaller than the drainpipe to be cleaned. The style of the tool is determined by the operational needs of the job. This choice is generally left up to the experience of the user.

➤ **Cutter/Accessory Table**

Sectional Elastic Soft Shell Cable	Sectional Elastic Strong Shell Cable	Rubber Safety Hose
Made with high quality spring wire, assures sufficient mechanical flexibility, as well as bending resistance, twisting resistance and durability resistance. It can be connected for any length.	A Shaft made in heavy load with intensive wires. Enhanced mechanical strength and twisting resistance, suitable for complicated working environment.	This safety hose is made to prevent injuries from rotating flexible shaft and assure personal safety.
		
Straight Helical Cutter	Olive Shaped Helical Cutter	Flexible Olive Shaped Helical Cutter
For exploring the pipe blockage. Usually used in the first step	For guiding the flexible shaft through the complicated path and drilling through the blockage. Best for it's guide function.	For pipes that are hard to drill. Good flexibility and optimal guiding function.
		
Funnel Shaped Helical Cutter	Collection Helical Cutter	4 Edge Saw Cutter
Used in the second step of cutting to effectively remove the blockage residue left on the pipe wall by straight helical cutting.	For collecting the broken cable or drill in the pipe.	Used to remove hard materials like chemical deposits.
		
Spade Shaped Cutter	Helical Cutter Saw	C-Shaped Cutter
Used to remove the grease and gunk from the pipe wall or used in the second step to remove residues on the pipe wall.	For removing blockages like roots, branches, debris or grease from pipes	For removing materials like cream, soap etc. that adhere to the pipe wall.
		

RUNNING THE MACHINE

- Do all pre-operational and operational safety checks from Chapter 1.
- Consider your security and stability as well as the orientation of the machine in the work area.
 - Consider the work surface material, condition, strength, density and rigidity. These factors directly affect the tools operation and user safety.
- Ensure the machine handle is free of grease or oil.
- Inspect the cable and couplings for damage or wear. Cable should be replaced when they are severely corroded. Worn cable can be identified when the outside of the coil becomes flat.
 - **CAUTION:** Worn or damaged cables can be extremely dangerous. If they break they can cause serious injury.
- Inspect the cutter edges for sharpness or damage. Dull or damaged cutters can lead to binding and cable breakage.
- If on a wall location (clean out), position the machine so that the front of the machine is as level to the sewer inlet as possible. If on a ground location (floor clean out), position the machine with the output approximately 2 feet from the sewer inlet.
 - **CAUTION:** Too much room in between sewer inlet and front of machine can result in the cable kinking and/or twisting, which can lead to cable breakage.
- Feed a section of cable into the front of the machine (see figure below). Make sure the cable goes into the clutch carriage from the front of the machine. Fully feed the section all the way through leaving approximately 1 foot remaining at the front.



- **CAUTION:** DO NOT couple more than one cable section at a time. Multiple sections should not be allowed to come out the back of the machine (on the rubber safety hose side).
- Select appropriate cutter for the specific clog and pipe being cleaned. Install the cutter (see above section for specifics on installing the cutter).
- User should be positioned in a way to safely keep control of the cable. They should be able to easily release clutch handle and on/off switch.
 - The user should also be in a position where they have a hand on the cable between the front of machine and pipe inlet to control the cable twisting action when an obstruction is reached.
- Place cable into the pipe being cleaned and push cable in until it reaches a point where it stops.
- Plug the machine into power source.
- Make sure to put on safety equipment.
- Pull enough extra cable through the machine until it forms a half circle between the front of machine and the sewer inlet line.
- Hold the cable loosely in the gloved hand.

➤	Turn the main machine switch to the “on” position (“R” for general cutting forward clockwise).
	<ul style="list-style-type: none"> NOTE: The machine will turn on, but the cable will not spin yet (until the clutch handle is depressed).
➤	With gloved hand on the cable, pull down the clutch handle with the opposite hand. Push down on the half circle of the cable until the cable advances downwards.
	<ul style="list-style-type: none"> NOTE: A quick action up or down on the clutch handle is preferred so as to keep the three-jaw set in the clutch from wearing out too quickly.
➤	As soon as the cable half circle has advanced forward and there is no longer slack in the circle, release the handle clutch so it stops spinning the cable.
➤	Pull 8”-10” of cable out with the gloved hand to form another half circle.
➤	Repeat the feeding process until resistance or obstruction is encountered. This will be the blockage. The can identify the blockage by difficulty feeding cable and a cable twisting motion in the operators hands.
➤	If more cable is required to reach an obstruction, the following procedure should be followed.
	<ul style="list-style-type: none"> Turn machine off. Loop the end of the cable that is currently in the line back in the line to secure it from moving. Insert another section of line through the front of the machine (female end first). Keep 1’ of the line out. Attach the cable in the line to the cable in the machine. Proceed with feeding cable operations.
➤	If the cable becomes overloaded in the clog, relieve the load tension by pulling back on the cable with short jerking motion to free the cutter. Slowly advance the cutter forward into the clog. Repeat the process until the clog is free.
	<ul style="list-style-type: none"> NOTE: Make sure cutters are always spinning when progressing into an obstruction and do not force the cable. Progress and time taken in a clog depends on the nature of the obstruction and cutters being used. CAUTION: DO NOT allow tension to build up in the drain cleaning cable. This can happen if the cutter has stopped rotating due to a blockage, but the motor clutch and cable continue to spin. This can cause a lot of torque on the cable causing it to suddenly twist potentially wrapping around an arm or hand. Be extremely aware when cutting through a blockage. Cut slowly and carefully when feeding the cable. NOTE: If the tool gets stuck in an obstruction and the manual dislodging procedure will not work, there is a special procedure that can be tried using the reverse “L” counter-clockwise switch on the on/off switch. <ul style="list-style-type: none"> The “L” reverse procedure should only be used to free an obstruction. Running the machine in reverse can cause damage to the drain cleaning cable. Only switch to “L” after motor has come to a complete stop. Switch to “L” engage clutch handle only until cable is free. Release as soon as tool is free of obstruction. Turn unit off and turn to “R” and commence normal cutting operation. WARNING: Never operate the machine in “L” reverse position for any other purposes. Operating in reverse can cause damage to the cable and operator.
➤	Once obstruction is clear, turn the machine to “off” position.
➤	To retrieve the cable from the sewer line, the following process should be followed.
	<ul style="list-style-type: none"> Leave the machine in the “R” forward cutting position. Engage the clutch.

○	With gloved hand, pull the cable out or hold cable against the edge of the sewer inlet pipe until a half circle is formed in the cable.
	▪ This essentially threads the cable out of the pipe.
○	Release clutch.
○	Push excess cable back through the machine from front to back.
	▪ Remember to turn off machine and disconnect sections as they come out.
	▪ When a section of cable is removed, insert the cable back into the cable carrier. Make sure to reconnect the sections of cable to the last section of cable in the carrier.
○	Repeat this operation until cable is fully out.
○	Turn off machine. Disconnect Power. Remove safety hose.
○	After using this machine, clean and flush cables, couplings and cutters with water.

Troubleshooting

Note

SERVICING SHOULD ONLY BE DONE BY A QUALIFIED TECHNICIAN.

DON'T FORGET TO UNPLUG POWER TO UNIT PRIOR TO SERVICE!

PROBLEM	CAUSE	CORRECTION
Motor does not start	Machine unplugged	Plug into power source
	Fuse blown	Replace the fuse
	Capacitor blown	Replace capacitor
	Bad on/off switch	Replace Switch
The cutters will not cut	Cutting blade is dull	Replace or sharpen blade
	Cutter is damaged	Replace cutter
	Too much force being applied	Cut slower
Cable is not turning	Main channel is rusted	Take apart and remove rust
	Clutch is worn down	Replace clutch
	Handle not pressed down all the way	Engage clutch handle down all the way
The cable spins, but does not move forward or reverse	This is a non-automatic forward/reverse drain cleaner. This is a sectional type drain cleaner. It does not go in and out automatically	Consult the operating manual for procedures on standard operating procedures
Damaged Cable	Dull cutters	Replace cutters
	Cutters not assembled in correct sequence	Put cutters in correct sequence
	Low quality pipe	Make sure only pipe of good quality is used
	Bad quality or insufficient thread cutting oil	Use only thread cutting oil in adequate quantity
Pipe turns while threading	3-jaw clutch not tight	Tighten handwheel clutch
	3-jaw clutch teeth dirty	Clean with wire brush
	3 jaw clutch teeth damaged or dull	Replace 3-jaw clutch
Cable broken in the Pipe	Incorrect operations	See operational protocols. Get drill with helical shaft and extension to collect the broken cable
	Prolonged use in "L" Reverse	
Cable is stuck	Pipe has many turns and is very long	Increase push/pull force during operations
		Change direction/angle of the cable
Cable will not cut through blockage	Blockage too hard	Gently push and pull the cable rotating clockwise. Have patience, sometimes obstructions take a while to clear
		Use a different set up, smaller or larger. Operator experience comes into play on this
	Complicated path to the blockage	Find a shorter route to the blockage

General Maintenance

Note

SERVICING SHOULD ONLY BE DONE BY A QUALIFIED TECHNICIAN.

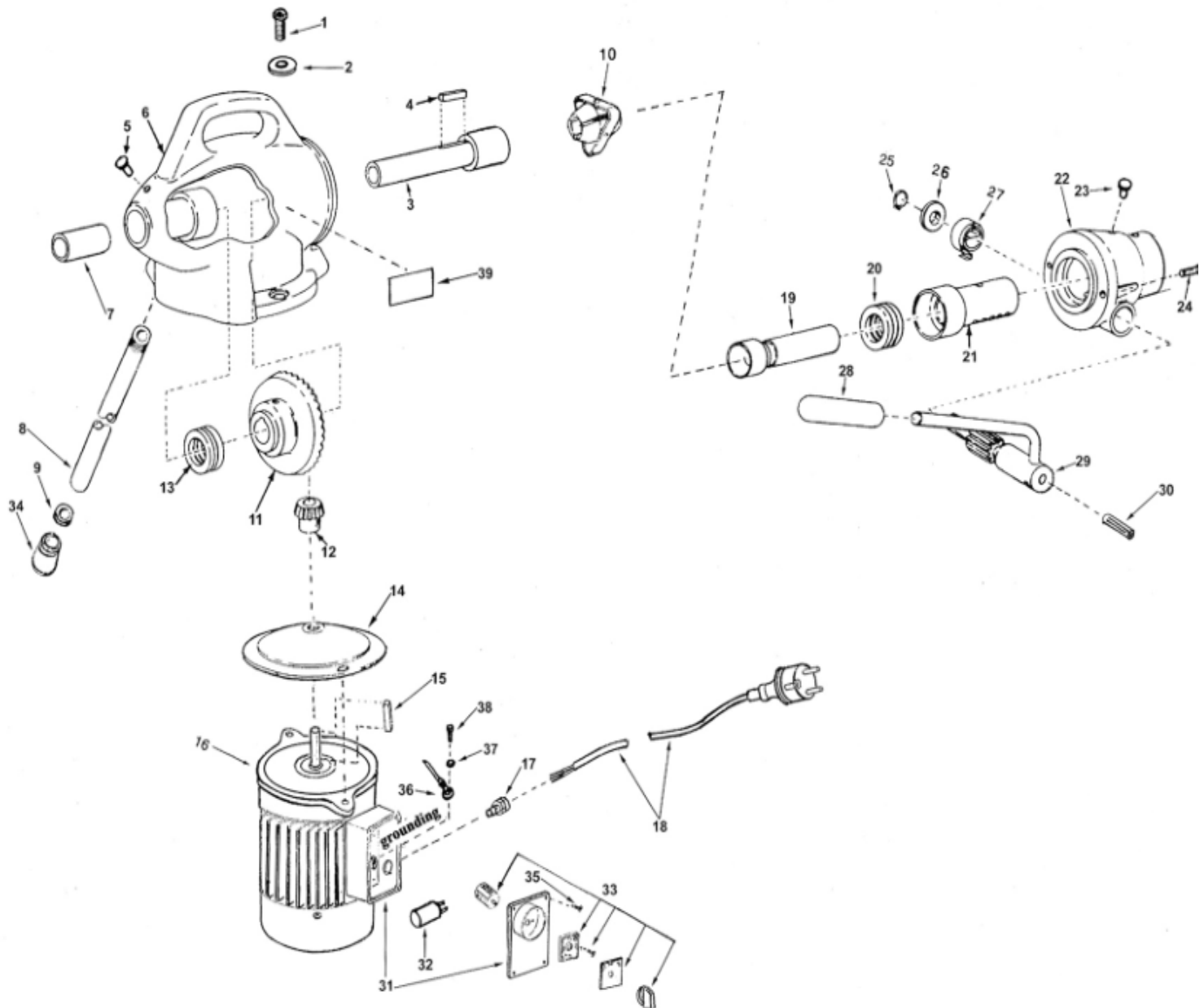
DON'T FORGET TO UNPLUG POWER TO UNIT PRIOR TO SERVICE!

➤	Inspect electrical cords and electrical connections.
➤	Keep machine clean and free of debris.
➤	Flush cables with water after each use. Occasionally lubricate cables and couplings.
➤	Check for misalignment, binding and breakage of all moving parts. If damaged, repair tool before use.
➤	Check the cutters for sharpness or damage.
➤	Clean clutch teeth with wire brush. Check the attrition on the 3-jaw clutch. If the points are worn, replace with identical piece.
➤	After each use coat all moving parts (including clutch driver) with corrosion resistant oil.

Occasional Maintenance

➤	Check brushes for wear and replace if worn.
➤	Grease main bearings thru grease zerk fittings.
➤	After a lot of use, clutch jaws may need to be replaced.
○	Remove the screws that hold the front guard to the housing. Remove screws that hold the nosepiece on.
○	Slide out clutch driver and replace jaws.
○	Put nosepiece assembly and guards back on.
▪	WARNING: DO NOT operate machine with guards removed.

Breakdown View



Parts List

Part	Description	Specification	Qty.	Part	Description	Specification	Qty.
1	Screw	M10*25	2	22	Rack and pinion housing		1
2	Flat washer	Φ10	2	23	Cap	Φ5*5 plastic	1
3	Axle		1	24	Screw	M6*25	2
4	Flat key	4*18	1	25	Retaining Ring	Φ12	1
5	Cap	Φ5*5 plastic	2	26	Washer	Φ30	1
6	Casing		1	27	Spring		1
7	Bush		2	28	Handle grip	Φ26*86 Plastic	1
8	Post		1	29	Handle with pinion assembly		1
9	Washer		3	30	Pin		1
10	Fixing blocks		3	31	Junction box	96*95*53 Plastic	1
11	Bevel gear	Φ105*24 PA6	1	32	Capacitor	10A/400v Plastic	1
12	Pinion gear		2	33	Switch	10uf/400v	1
13	Bearing	8205	2	34	Rubber feet	Φ32*36 rubber	3
14	Insulating motor gasket	Φ140 PVC	1	35	Screw	M4*12	4
15	Flat key	4*20	1	36	Earth lead	Φ4	1
16	Motor		1	37	Spring washer	Φ4	1
17	Strain reliefs	M16 Plastic	1	38	Screw	M4*10	1
18	Mains cable	0.75 ² /250V rubber	1	39	Name Plate		1
19	Axle		1	40	Spring support		1
20	Bearing	8205	2	41	Sign		1
21	Gear rack		1				1