

BLUEROCK® TOOLS

OPERATION MANUAL V1.0

S90 | SECTIONAL DRAIN CLEANING MACHINE

5/8" & 7/8" Sectional Cable | 5/16" Small-Cable Assembly



READ AND UNDERSTAND THIS MANUAL BEFORE OPERATING THE MACHINE

Keep this manual for future reference

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IMPORTANT SAFETY INFORMATION

WARNING

Sectional drain-cleaning machines generate high torque. A rotating cable can bind, kink, break, or whip without warning. Failure to follow these instructions could result in electric shock, entanglement, crushing injuries, or other serious injury.

Operator Safety

- Only trained operators who have read and understood this manual should use the S90.
- Wear safety glasses or a face shield, suitable protective footwear, and drain-cleaning gloves or mitts designed for handling rotating cable.
- Never grasp rotating cable with ordinary work gloves, loose cloth gloves, bare hands, or a rag. Latex or rubber gloves alone do not provide adequate protection from a rotating cable.
- Do not wear loose clothing or jewelry. Secure long hair and keep sleeves, gloves, and clothing away from rotating components.
- Keep bystanders and untrained personnel away from the machine and exposed cable.
- One person must control both the cable and clutch handle. Do not allow another person to operate the clutch while you are handling the cable.

Cable Control

- Keep one properly protected hand on the exposed cable whenever it is rotating. Keep the other hand positioned to operate the clutch handle.
- Maintain control of the cable at all times. Do not allow the cable to form a large loop, twist, buckle, or accumulate between the machine and drain opening.
- Release the clutch handle immediately if the cable stops rotating, begins to twist or kink, or builds excessive tension.
- Never lock, tie, block, or otherwise secure the clutch handle in the engaged position.
- Do not force the cable or cutter through an obstruction. Allow the rotating tool to work gradually.
- Use FORWARD for normal cleaning. Use REVERSE only momentarily to release a bound cable or cutter. Prolonged reverse operation may damage cable connections or cause cable failure.
- Switch the machine OFF and unplug it before connecting or disconnecting cable sections, changing cutters, clearing a jam, inspecting the cable, or making adjustments.

Machine Position and Guide Hose

- Position the machine as close as practical to the drain opening. Do not allow more than approximately 2 ft. (0.6 m) of unsupported cable between the machine and drain.
- If the machine cannot be positioned within approximately 2 ft. (0.6 m) of the drain, use an appropriate guide hose or another secure method that fully supports and contains the exposed cable.
- Always install and use the protective rear guide hose when operating 5/8 in. or 7/8 in. sectional cable.
- Never engage the clutch while cable is exposed behind the machine or while any part of the cable remains inside a cable carrier, storage barrel, or transport container.
- Place the machine on a firm, stable surface. Maintain secure footing and balance throughout operation.

Electrical Safety

- Connect the machine only to a properly grounded 120V outlet protected by a functioning GFCI.
- Never remove or defeat the grounding prong or bypass the GFCI or any other safety device.
- Test the GFCI before each use. Do not operate the machine if the GFCI fails to trip or reset correctly.
- Never operate the machine while the operator, machine, power cord, plug, extension-cord connection, or electrical outlet is standing in water.
- Keep the machine and all electrical connections dry and off the ground.
- Do not use the machine if the cord, plug, switch, GFCI, housing, or other electrical component is damaged.

Equipment and Work-Area Safety

- Inspect the machine, cable, couplings, cutters, guide hose, guards, cord, plug, and controls before every use. Do not operate with damaged, excessively worn, missing, or improperly installed components.
- Do not operate the machine in an explosive atmosphere or near flammable liquids, gases, vapors, or combustible dust.
- Before cleaning, determine the approximate route, size, condition, and length of the drain. Identify where the line enters a larger sewer, septic tank, or unknown branch.
- Do not feed cable beyond the intended drain route. Cable entering a larger line, septic tank, or unknown branch may knot, become trapped, or be difficult to retrieve.
- Determine whether chemical drain cleaners or other hazardous substances may be present. Follow the applicable chemical precautions and use appropriate protective equipment.
- Stop using the machine immediately if it produces abnormal noise, vibration, odor, overheating, electrical leakage, or inconsistent clutch operation.

SAFETY SIGNAL WORDS

This manual uses the following signal words to identify hazards and important equipment-protection information:

Signal	Meaning
DANGER	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information concerning protection of the machine, cable, pipe, or other property. NOTICE is not used to indicate a personal-injury hazard.

DRAIN CONTENTS AND HIDDEN UTILITIES

WARNING

Drain-cleaning equipment may be exposed to sewage, infectious material, corrosive chemicals, and other hazardous substances. Drain lines may also contain or intersect concealed utilities. Identify and control these hazards before beginning work.

- Treat every used cable, cutter, guide hose, glove, and contaminated machine surface as potentially hazardous.
- Determine whether chemical drain cleaners, acids, or other hazardous substances have been introduced into the drain. Obtain the applicable product information and follow the chemical manufacturer's handling and exposure precautions.
- Wear appropriate eye, face, skin, and respiratory protection for the known or suspected hazard.
- When chemical or biological exposure is possible, wear rubber or latex gloves underneath approved drain-cleaning gloves or mitts. Never use rubber or latex gloves alone to grasp rotating cable.
- Avoid direct contact with wastewater and material removed from the drain. Do not eat, drink, smoke, or touch your face while handling contaminated equipment.
- After completing the work, thoroughly wash hands and other exposed skin with hot, soapy water. Clean and disinfect reusable equipment in accordance with applicable workplace procedures and local requirements.
- Consider camera inspection, utility-location records, or other appropriate verification when gas lines, electrical conductors, communication lines, water lines, or other utilities may cross or enter the drain.
- Stop work if an unknown obstruction may be a utility line or crossbore. Cutter contact with a concealed utility can cause electric shock, fire, explosion, flooding, gas leakage, property damage, serious injury, or death.
- Do not continue cutting until the obstruction and drain route have been identified and it is safe to proceed.

MACHINE OVERVIEW AND SPECIFICATIONS

The BLUEROCK S90 is a compact electric sectional drain-cleaning machine designed to rotate manually fed 5/8 in. (16 mm) and 7/8 in. (22 mm) sectional cable. The clutch handle controls cable rotation: pressing the handle engages the cable; releasing it stops cable rotation while the motor remains available for the next feed cycle.

INTENDED USE

Use the S90 for professional cleaning of compatible indoor drain, waste, and sewer lines. Actual capacity depends on cable size, cutter, pipe condition, access, bends, and obstruction type. Do not use the machine for any purpose other than drain cleaning.

Specification	Value
Model	BLUEROCK S90
Machine type	Electric sectional drain cleaner
Rated voltage	120V AC
Rated frequency	60Hz
Input power	570W
Cable speed	400 RPM
Enclosure protection	IP44
Compatible cable	8 mm small-cable assembly; 5/8 in. (16 mm) and 7/8 in. (22 mm) sectional cable
Stated pipe range	3/4-6 in. (20-150 mm), depending on cable and application
Direction control	FOR / OFF / REV
Cable engagement	Manual clutch handle
Electrical protection	GFCI-equipped power cord

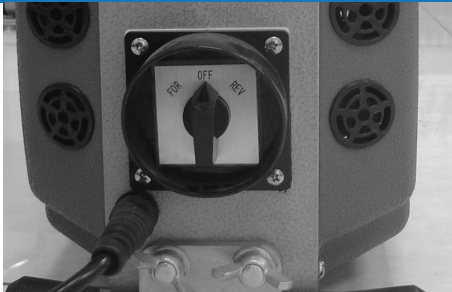
Specifications may change with product updates. Always confirm the machine nameplate before connecting power.

Package Configuration

The exact contents are controlled by the sales listing and packing list for the purchased configuration. A typical S90 package may include the following:

Component	Purpose / Notes
S90 main machine	Clutch-driven sectional drain cleaner with GFCI power cord.
Protective rear guide hose	Required during 5/8 in. and 7/8 in. sectional-cable operation.
5/8 in. cutter set and pin key	Use only with compatible 5/8 in. cable couplings.
7/8 in. cutter set and pin key	Use only with compatible 7/8 in. cable couplings.
8 mm cable assembly and adapter	Small-line cleaning configuration; follow the separate setup in this manual.
Accessory barrel / cable carrier	Stores and transports cable. Remove cable from the carrier before powered rotation.
Drain-cleaning gloves or mitts	Required when controlling rotating cable. Replace if torn or worn.
5/8 in. or 7/8 in. cable	May be packaged separately or sold separately, depending on configuration.

CONTROLS AND COMPONENTS



Direction selector: FOR / OFF / REV

Direction Selector

- OFF: motor circuit off. Place the selector in OFF before plugging in, changing accessories, or servicing.
- FOR: forward rotation for normal drain cleaning.
- REV: reverse rotation. Use only momentarily when needed to release a bound cable or tool.



Clutch handle engages cable rotation

Clutch Handle

Press the clutch handle only far enough to positively grip and rotate the cable. Release the handle to stop cable rotation. Do not extend the handle or use a pipe, bar, or other force-multiplying device. Do not exceed 20 kg (44 lb) of handle force.

Rear Locking Screw / Guide Connection

The rear locking assembly secures the correct cable adapter or guide hose arrangement. Switch OFF and unplug the machine before installing, removing, or adjusting any adapter or guide component.

CABLE AND TOOL SELECTION

Cable	General application
8 mm small-cable assembly	Typical 3/4-1-1/2 in. small lines. Use only with the supplied adapter and protective tube/assembly.
5/8 in. (16 mm)	Typical 1-1/4-4 in. lines. Flexible sectional cable for sinks, floor drains, and longer indoor runs.
7/8 in. (22 mm)	Typical 2-4 in. lines and stacks; some suitable 6 in. applications may be possible within the S90 overall rating.

These ranges are selection guidance, not a guarantee of access or cleaning performance. Pipe material, bends, traps, damage, root intrusion, blockage type, cutter size, and cable condition can reduce usable capacity. Do not exceed the cable manufacturer's stated reach or application limits.

CAUTION	Cable and cutter size must match. Never force incompatible couplings together. Use only cables, adapters, guide hoses, and tools approved for this machine and the pipe being cleaned.
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Cutter Selection Guide

Tool type	Typical first use
Straight auger / boring head	Explore an unknown blockage, establish an initial opening, or identify material on the tool.
Bulb or funnel auger	Soft stoppages, loose material, and retrieval of fibrous matter.
Spade cutter	Grease, sludge, and wall buildup after an initial opening exists.
C-cutter / sawtooth cutter	Heavier deposits and some root or scale applications in suitable pipe.
Retrieving auger	Recover broken cable, tools, or fibrous material. Use only with full control.
Finishing cutter	Final wall cleaning after flow has been restored and the line condition is known.

TOOL SIZING

Begin with the smallest practical tool. As a general starting point, use a cutter at least 1 in. smaller than the inside diameter of the line, then increase size gradually after establishing flow and confirming pipe condition.

Connecting a Cable or Cutter



Align the coupling and engage the locking pin fully

1. Place the direction selector in OFF and unplug the machine.
2. Inspect both coupling halves. Do not use worn, cracked, bent, corroded, or contaminated couplings.
3. Align the coupling pin with the mating angled slot and push the pieces together until the pin engages.
4. Look through the inspection opening and verify that the locking pin has fully returned to the locked position.
5. Pull firmly on the connection before use to confirm it is secure.

Disconnecting a Cable or Cutter



Use the coupling key to release the locking pin

1. Switch OFF, unplug, and make certain all rotation has stopped.
2. Insert the coupling key to depress the locking pin.
3. While holding both sections under control, slide the joint apart opposite the coupling slot.

WARNING

Never connect, disconnect, inspect, or adjust cable while the machine is connected to power.

PRE-OPERATION INSPECTION

Complete this inspection before every use. Do not operate the S90 until each unsafe condition has been corrected.

- Confirm the selector is OFF and the machine is unplugged.
- Inspect the cord, plug, grounding prong, switch, housing, guard, clutch handle, feet, and fasteners.
- Inspect each cable section for corrosion, flattening, worn coils, kinks, cracks, stretched sections, damaged ends, or loose couplings.
- Inspect cutters for damage, excessive wear, and secure attachment.
- Check that the cable path, rear adapter, and guide components match the selected cable size.
- Make sure guards are installed and moving parts are correctly aligned and free of binding.
- Test the electrical supply and GFCI according to the GFCI manufacturer instructions.
- Inspect the work area for water, traffic, poor lighting, flammable material, and other hazards.

DO NOT OPERATE

Stop and arrange qualified service if the switch cannot reliably control the machine, the clutch does not release, the cable is damaged, the housing is energized, or any abnormal noise, odor, vibration, or overheating is present.

Cable Wear Limits

- Replace cable when outside coils become noticeably flat, severely worn, heavily corroded, spread, crushed, or distorted.
- Replace any cable with a kink, permanent bend, cracked coil, stretched section, loose end fitting, or coupling pin that does not fully lock.
- Do not weld, splice, heat-straighten, or grind damaged sectional cable. Damage can concentrate stress and cause sudden failure under torque.

GFCI Test

1. Place the direction selector in OFF and make sure the clutch is released.
2. Plug the power cord into a properly grounded receptacle.
3. Press the TEST button on the GFCI. Power to the machine should be interrupted.
4. Press RESET to restore power. If the GFCI does not trip, will not reset, trips repeatedly, or shows damage, unplug the machine and do not use it until corrected.

EXTENSION CORD

The GFCI on the machine cord does not protect the portion of an extension cord between the receptacle and the machine GFCI. Keep all connections dry and off the ground and use a GFCI-protected supply.

Extension length	Minimum copper conductor
Up to 50 ft. (15 m)	16 AWG, three-conductor, grounded
50-100 ft. (15-30 m)	14 AWG, three-conductor, grounded
Over 100 ft. (30 m)	Avoid when practical; consult a qualified electrician for proper conductor size.

SETUP

Evaluate the Job Before Setup

- Identify the drain route, cleanout location, line size, pipe material, bends, traps, downstream connection, and approximate distance to the main sewer or septic tank.
- Ask whether chemical drain cleaners have been used. Follow the chemical manufacturer's precautions and avoid direct contact with cable and wastewater.

- Choose a cable that can negotiate the route while carrying enough torque for the obstruction. Start with a small exploratory tool when pipe condition is unknown.
 - Establish a method to contain wastewater and contaminated cable. Protect floors and nearby equipment without creating a slip or electrical hazard.
1. Identify the drain route, pipe size and material, access point, and likely obstruction. Select a suitable cable and initial tool.
 2. Remove traps, cleanout plugs, or other access components as required. Guard against pressurized, hot, chemical, biological, or otherwise hazardous drain contents.
 3. Place the S90 on a firm, stable surface with its feet supported. Keep the machine close enough to control the exposed cable.
 4. Install the correct cable adapter or guide hose arrangement and tighten the locking screw. Keep the power disconnected during setup.
 5. Insert one cable section through the machine and into the drain. Do not couple a long train of loose cable behind the machine.
 6. Connect the selected cutter and verify the locking pin is fully engaged.
 7. Route the cord away from the drain, cable, wet surfaces, sharp edges, heat, and traffic. Use only a grounded, outdoor-rated extension cord of adequate wire size when necessary.
 8. Test the cord-mounted GFCI, then connect to a properly grounded 120V outlet. Keep the connection dry and off the ground.

Protective Rear Guide Hose

Use the protective rear guide hose whenever operating 5/8 in. or 7/8 in. sectional cable. Attach it securely before inserting cable. The hose must contain the cable behind the machine and prevent it from extending beyond the hose where it could whip or entangle the operator.

WARNING

Do not engage the clutch if cable is exposed behind the machine, extends beyond the guide hose, or remains inside a cable carrier or accessory barrel.

8 mm Small-Cable Assembly Setup

1. Switch OFF and unplug the S90.
2. Raise the rear locking screw and install the supplied 8 mm adapter and protective tube/assembly until fully seated.
3. Secure the locking screw and confirm the assembly cannot pull free.
4. Inspect the small cable for kinks, flattened areas, corrosion, and end-tool damage.
5. Feed the cable into the drain by hand before reconnecting power. Maintain the protective assembly between the rotating cable and operator.

NOTICE

The 8 mm assembly is for small-line work and does not use the same connection procedure or cutters as the 5/8 in. and 7/8 in. sectional cables. Do not interchange components.

OPERATING INSTRUCTIONS

WARNING

Maintain control of the rotating cable at all times. If the cable binds or stops rotating, release the clutch immediately. Continued torque can cause a kink, cable break, whipping, or entanglement.

1. With the selector OFF, feed the cutter and cable into the drain as far as practical by hand.
2. Put on approved drain-cleaning gloves or mitts. Hold the cable loosely but securely with one protected hand.
3. Set the selector to FOR. The motor will run, but the cable should not rotate until the clutch handle is pressed.
4. Pull a controlled amount of cable through the machine to form a small arc between the machine and drain opening. Do not permit a large or uncontrolled loop.
5. Press the clutch handle to rotate the cable. Feed the cable by pushing the top of the controlled arc toward the drain in short, firm strokes.
6. Release the clutch after approximately 6-10 in. (150-250 mm) of cable advances. Pull another controlled length through the machine and repeat.
7. When the end of a section approaches the machine, release the clutch, set the selector OFF, and unplug. Connect the next section, verify the coupling, reconnect power, and continue.
8. At resistance, work the tool gradually. Do not force the cable. Alternate short advances and withdrawals so loosened debris can clear.
9. After the obstruction opens, run water when appropriate and make several controlled passes to clean the pipe. Avoid splashing wastewater into the machine.

Proper Operating Position

- Maintain stable footing and balance. Do not kneel or stand where wastewater can reach electrical components.
- Keep the direction selector and clutch handle within immediate reach. One operator must control both.
- Keep the cable outlet within approximately 2 ft. (0.6 m) of the drain opening unless the exposed cable is fully supported.
- Keep the controlled cable arc small enough that it cannot twist sideways, strike the operator, or contact nearby objects.
- Do not allow another person to feed, retrieve, or hold the same rotating cable.

Working the Obstruction

- Resistance, difficult feeding, or sideways cable movement indicates load at the cutter. Reduce feed pressure immediately.
- Keep the cutter rotating. If the cutter stops while the cable continues to rotate, torque can build rapidly and cause a kink, break, or wrap injury.
- Use short advances and withdrawals. Allow the cutter to remove material rather than forcing it through the obstruction.
- Once flow is restored, run water when appropriate and make repeated passes with gradually larger cutters until the line is adequately cleaned.

Retrieving the Cable

1. Keep the selector in FOR for normal retrieval. Rotate the cable while pulling it from the drain in short, controlled increments.
2. As each coupling reaches a safe working position, release the clutch, switch OFF, unplug, and disconnect the recovered section.
3. Coil and secure each removed section so it cannot spring open or create a trip hazard.
4. Repeat until the cutter is near the opening. Stop rotation before withdrawing the cutter from the drain.
5. Set OFF, unplug, and clean the machine, cables, couplings, and tools.

REVERSE USE

Do not use REV as the normal method of cable advance or retrieval. If reverse is required to free a bound tool, use it only momentarily and under full control. Return to OFF as soon as the tool is released.

Adding Sectional Cable

1. At the end of a cable section, release the clutch and switch OFF.
2. Prevent the cable in the drain from sliding away. Where the line slopes, form a controlled retaining loop at the opening without kinking the cable.
3. Unplug the machine. Insert the next section through the front of the S90, female coupling first, leaving enough cable exposed for connection.
4. Connect the new section to the cable in the line and confirm the locking pin is fully engaged.
5. Reconnect power, select FOR, and resume normal operation. Add only one section at a time.

Roof Vents, Elevated Areas, and Ladders

- Transport the machine with cable, carrier, and loose accessories removed or separately secured.
- Do not operate the S90 while standing on a ladder. Place the machine on a stable, level working surface with fall protection as required.
- Keep cables, cords, and wastewater away from roof edges and walking paths. Prevent the machine from sliding or being pulled by cable reaction.
- Identify the distance to the lower connection before feeding cable down a stack. Do not allow cable to enter a larger main where it can knot.

REMOVING A STUCK CABLE

1. Release the clutch immediately. Set the selector to OFF and unplug the machine.
2. Determine whether the cable is kinked outside the drain. Correct the exposed cable position without reconnecting power.
3. Reconnect power only when the cable is controlled. Try short forward pulses while gently pulling back.
4. If forward rotation cannot release the tool, use only a momentary reverse pulse while pulling back. Immediately return the selector to OFF.
5. Never jerk the cable, operate continuously in reverse, or apply enough force to twist or stretch the cable.
6. If the cable remains stuck, unplug the machine and use an appropriate retrieval method or qualified drain-cleaning service.

WARNING

Never allow a stalled cable to remain under motor torque. Never attempt to restrain a kink or whipping cable with your body.

CLEANING AND MAINTENANCE

After Each Use

- Switch OFF, unplug, and allow all parts to stop.
- Thoroughly flush cables, couplings, and cutters with clean water. Drain and dry them completely; drain chemicals can rapidly damage steel cable.
- Apply a suitable cable lubricant or rust inhibitor and inspect for damage before storage.
- Wipe the machine exterior with a damp cloth. Do not hose, pressure-wash, immerse, or allow wastewater to enter the housing.
- Run the unloaded machine for 2-3 minutes only when dry and safe to help ventilate residual moisture.
- Apply suitable lubricating oil sparingly at the designated oil points. Wipe away excess oil.

Periodic Inspection

- Check belt condition and tension, bearings, clutch grip and release, switch operation, cord strain relief, guards, fasteners, and mounting feet.
- Replace worn cable and cutters promptly. Never weld, splice, straighten, or otherwise repair damaged sectional cable.
- Electrical service, internal adjustment, and parts replacement must be performed by qualified repair personnel using identical replacement parts.

Recommended Maintenance Schedule

Interval	Maintenance
Before each use	Inspect machine, cord/GFCI, guards, guide hose, cables, couplings, cutters, and clutch release.
After each use	Flush, dry, inspect, and protect cables and tools; wipe machine; clean contaminated surfaces.
Weekly with daily use	Lubricate only designated machine oil/grease points; inspect clutch grip and belt condition.
Monthly or occasional use	Have internal drive and clutch components inspected as needed; check fasteners and electrical condition.
Before storage	Dry all components, apply cable rust inhibitor, secure cable in carrier/barrel, and store indoors.

Clutch and Drive Care

The clutch is an operator-control and safety component. It must grip the selected cable positively when pressed and release rotation immediately when released. Keep the clutch area clean. If cable slips, rotation continues after release, engagement is inconsistent, or unusual noise develops, stop using the machine and have the clutch and drive inspected. Do not compensate by extending the handle or applying excessive force.

TRANSPORTATION AND STORAGE

- Switch OFF and unplug before moving the machine. Carry it by the intended frame or handle; never lift by the cord, clutch handle, cable, or switch.
- Secure the machine, cables, cutters, and accessories against shifting during transport. Protect the cord and controls from crushing or impact.
- Keep the machine upright, dry, and protected from rain, fire, corrosive material, freezing conditions, and heavy loads.
- Store indoors in a clean, dry, locked location out of reach of children and untrained persons.

TROUBLESHOOTING

WARNING

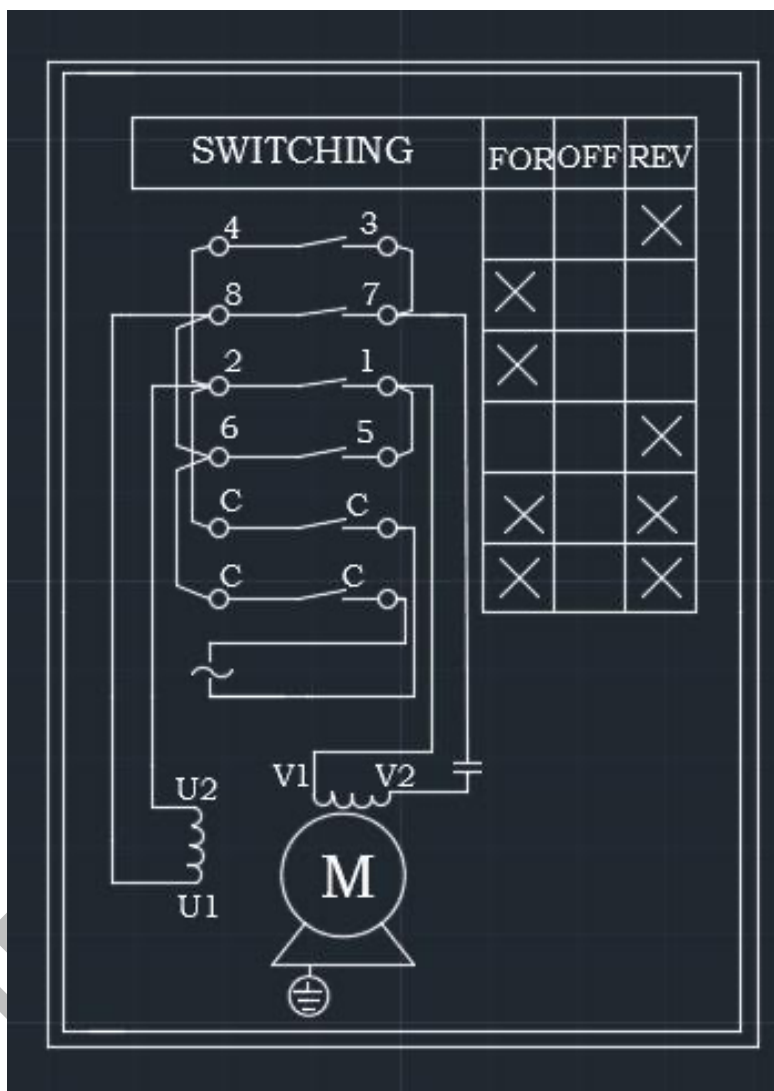
Switch the direction selector to OFF, unplug the machine, and wait for all moving parts to stop before inspecting, adjusting, or correcting a problem. Do not open the machine housing or perform internal electrical or mechanical repairs unless qualified to do so.

Condition	Possible Cause	Corrective Action
Motor does not run	No electrical power; GFCI tripped; damaged cord or plug; direction selector in OFF; internal electrical or control fault	Confirm the outlet has power and is properly grounded. With the selector in OFF, inspect the cord and plug and test/reset the GFCI. Confirm the selector position. Never bypass the GFCI, grounding connection, switch, or another electrical-protection device.
GFCI trips or will not reset	Wet connection; damaged cord or plug; unsuitable extension cord; moisture inside or contamination inside machine; electrical fault	Switch OFF and unplug. Move connections to a clean, dry location and inspect the cord, plug, and extension cord. Do not repeatedly reset the GFCI. If it trips again or will not reset, discontinue use and arrange qualified electrical service.
Motor hums, but output shaft does not turn	Shaft or drive seized; internal corrosion or contamination; belt or drive failure; mechanical obstruction	Switch OFF and unplug immediately. Do not continue energizing the motor. Arrange qualified inspection and repair.
Cable does not rotate when clutch handle is pressed	Clutch not fully engaging; worn, contaminated, or incorrectly adjusted clutch; incorrect adapter; cable improperly positioned	Release the clutch, switch OFF, and unplug. Verify that the cable and adapter are correctly installed. Do not extend the handle or use added leverage. If the condition remains, have the clutch and drive inspected.
Cable continues rotating after clutch handle is released	Clutch binding, contaminated, worn, damaged, or incorrectly adjusted	Switch OFF and unplug immediately. Do not operate the machine until the clutch has been inspected and repaired. Never attempt to stop a rotating cable by hand.
Cable rotates but will not advance	Incorrect feeding technique; cutter too large; unsuitable cable or cutter; hard obstruction; excessive resistance in the drain	Release the clutch and reassess the setup. Use short, controlled feed strokes. Withdraw the cable and select a smaller or more suitable cutter if necessary. Do not force the cable.
Cable or cutter becomes stuck	Cutter caught in obstruction; cable bound in a bend; excessive cable fed into the line; cutter entered a larger pipe or branch	Release the clutch immediately. Follow the stuck-cable procedure in this manual. Use REVERSE only momentarily and only when required to release the cable or cutter.
Cable will not pass through bends	Cable too large or stiff; cutter too large; multiple or tight bends; unsuitable drain access point	Withdraw the cable and select a more suitable cable or cutter. Reposition the machine or use a straighter access point when available. Do not force the cable or exceed its application limits.
Cable twists, kinks, or forms a large loop	Excessive exposed cable; machine too far from drain; cutter binding; excessive feed pressure; cable not properly supported	Release the clutch immediately. Switch OFF and unplug. Reposition the machine closer to the drain or properly support the exposed cable. Inspect the cable and replace it if permanently bent, kinked, stretched, or otherwise damaged.
Excessive vibration or unusual noise	Damaged cable or cutter; loose fastener; worn bearing, clutch, belt, or drive component	Stop and unplug the machine. Inspect accessible external components and confirm the cutter and cable are properly connected. Arrange qualified service if the cause is not obvious and safely correctable.
Machine becomes unusually hot or produces a burning odor	Blocked ventilation; excessive load; extended continuous operation; stalled motor; internal mechanical or electrical fault	Release the clutch, switch OFF, and unplug immediately. Clear external ventilation openings and allow the machine to cool. Discontinue use if overheating or odor returns.
Electric shock or tingling is felt from the machine	Improper grounding; wet electrical connection; damaged cord or plug; internal insulation or wiring fault	Stop using the machine immediately. Do not continue touching the machine. Disconnect electrical power at the outlet, GFCI, or circuit breaker only when it can be done safely. Keep others away and arrange qualified electrical service before further use.
Cable breaks inside the drain	Damaged or worn cable; excessive torque; cable kinked or bound; cutter forced through obstruction; prolonged reverse operation	Switch OFF and unplug. Retrieve the broken cable using a suitable retrieving tool or qualified drain-cleaning service. Replace the damaged cable and inspect all cables, couplings, cutters, and clutch components before returning the machine to service.

ELECTRICAL DIAGRAM

WARNING

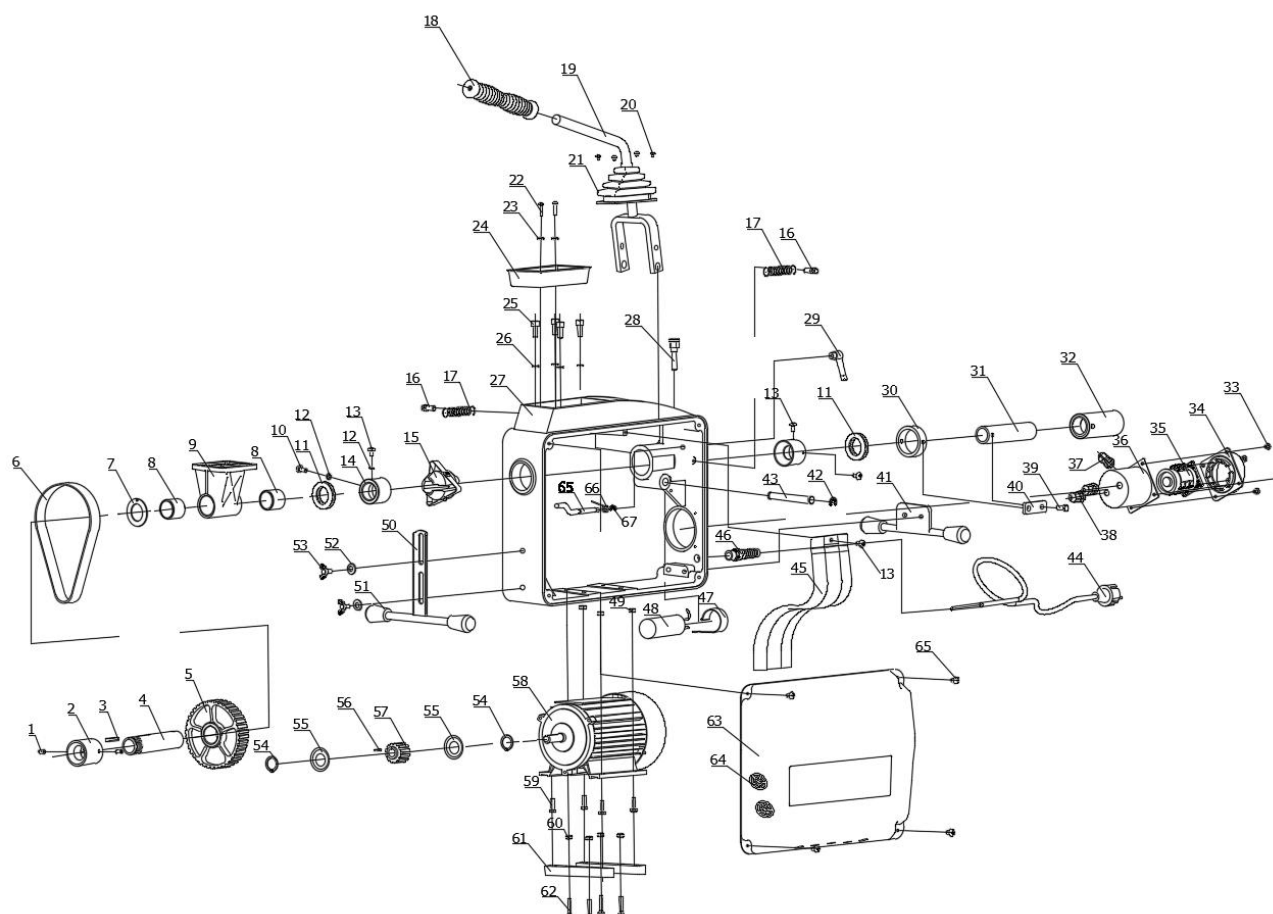
Electrical service must be performed only by qualified personnel. Disconnect the plug before opening the housing. Do not bypass the selector, grounding conductor, capacitor, guard, or other protective component.



S90 electrical switching diagram — 120V, 60Hz configuration

Verify the actual wiring and component markings in the machine before testing or replacement.

EXPLODED VIEW AND PARTS LIST



BLUEROCK S90 exploded view

No.	Description	Qty.	No.	Description	Qty.
1	Screw	2	35	Switch	1
2	Front axle bushing	1	36	Protective shield	1
3	Flat key	1	37	Retaining ring	1
4	Front axle	1	38	Retaining ring	2
5	Large pulley	1	39	Screw	2
6	Cog belt	1	40	Connection strap	2
7	Washer	1	41	Bracket	1
8	Composite bushing	2	42	Retaining ring	2
9	Bearing support	1	43	Roll pin	1
10	Screw	1	44	Power cord	1
11	Bearing	2	45	Water shield	1
12	Spring washer	7	46	Strain relief	1
13	Screw	4	47	Spring clip	-
14	Taper sleeve	2	48	Capacitor	1

No.	Description	Qty.	No.	Description	Qty.
15	Fixing block	1	49	Locknut	4
16	Screw	2	50	Elevator bracket	1
17	Tension spring	2	51	Rubber foot	4
18	Handle grip	1	52	Washer	4
19	Handle	1	53	Screw	2
20	Screw	4	54	Retaining ring	2
21	Dustproof cover	1	55	Washer	1
22	Screw	2	56	Flat key	1
23	Flat key	2	57	Small pulley	1
24	Decorative box	1	58	Motor	1
25	Screw	4	59	Screw	4
26	Spring washer	4	60	Hex nut	4
27	Body casting	1	61	Pad	2
28	Pin	1	62	Screw	4
29	Locating pin	1	63	Cover	2
30	Slide bushing	1	64	Vent plug	8
31	Rear axle	1	65	Screw	8
32	Rear axle housing	1	66	Locating rod	1
33	Screw	4	67	Torsion spring	1
34	Switch plate	1	68	Pin	1

Note: A quantity is not listed for Item 47. Provide the model and serial number when ordering parts; production revisions may affect compatibility.

1-YEAR LIMITED WARRANTY

The BLUEROCK S90 is covered by a 1-Year Limited Warranty against defects in materials and workmanship, subject to the BLUEROCK Tools Limited Warranty terms and conditions in effect at the time of purchase.

During the applicable warranty period, BLUEROCK Tools may, at its discretion and subject to the terms of the warranty, repair or replace a covered component determined to be defective in materials or workmanship.

This limited warranty applies only when the machine has been operated, maintained, transported, and stored in accordance with this manual.

Normal Wear and Consumable Components

- Sectional cables, cable assemblies, couplings, and connecting pins subject to normal wear
- Cutters, augers, retrieving tools, and other drain-cleaning attachments
- Clutch components, belts, bearings, seals, and other service components
- Gloves, guide hoses, keys, adapters, and accessories subject to normal deterioration
- Routine cleaning, adjustment, inspection, lubrication, and cable maintenance

Warranty Exclusions

- Misuse, abuse, neglect, or operator error
- Use outside the stated pipe sizes, cable capacities, or intended applications
- Failure to follow safety, setup, operating, cable-retrieval, cleaning, or maintenance instructions
- Continued operation after cable binding, kinking, stalling, abnormal noise, overheating, electrical malfunction, or another warning sign
- Use of damaged, worn, incorrect, incompatible, or improperly connected cables, cutters, adapters, guide hoses, or accessories
- Excessive clutch-handle force, forcing the cable, or improper use of reverse rotation
- Unauthorized alteration, modification, repair, or disassembly
- Accident, impact, dropping, improper handling, transportation, or storage
- Corrosion, contamination, chemical exposure, water intrusion, or operation outside the stated specifications
- Normal wear and deterioration associated with ordinary use

Obtaining Warranty Assistance

If you believe the S90 has developed a defect covered by warranty, contact BLUEROCK Tools before returning or shipping the machine. Be prepared to provide proof of purchase, model, serial number, purchase date, cable and tool being used, a description of the problem, and photographs, video, or other diagnostic information when requested. Do not ship or return the machine without return or service instructions.

Replacement Parts and Technical Support

Replacement and service parts are available for the S90 through BLUEROCK Tools. BLUEROCK Tools also provides Lifetime U.S.-Based Technical Support for assistance with machine operation, troubleshooting, maintenance, and replacement-part identification.

IMPORTANT: This manual provides a summary of warranty coverage and does not replace the complete BLUEROCK Tools Limited Warranty terms and conditions. In the event of a conflict, the applicable BLUEROCK Tools Limited Warranty terms and conditions in effect at the time of purchase will govern.