Electric Eel®

MODEL E

Drain Cleaning Machine

Operator's Manual

!!DANGER!!

FOR YOUR SAFETY

Before you operate or maintenance this equipment, READ this manual carefully and completely!

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Description, Specifications, and Equipment

DESCRIPTION

The Electric Eel Model E Drain Cleaning machine is the newest of Electric Eel's complete line of quality sewer and drain cleaning equipment. This drum machine is specifically designed for the professional when cleaning 1¼" to 3" lines through 75 feet.

STANDARD FEATURES

1. Power cord is wrapped around conveniently-placed brackets for safe, problem-free transport.
2. Additional rear bar shields motor and allows for more flexible two position operation.
3. Easy-to-use operated foot switch allows the use of both hands when working with cable.
4. Ground Fault Circuit Interrupter (GFI) safety feature comes standard with 20 foot power cord.
5. Heavy duty, durable tubular frame provides stability and balance while in operation.
6. Epoxy powder-coated drum deters corrosion caused by caustic drain-cleaning elements.
7. Cast aluminum bracket with bearing supported guide tube.
8. Cable available in either ⅜" or ½" certified music wire with genuine galvanized aircraft wire inner core for longer life.
9. Unique inner drum design helps to prevent cable buckling.
10. Built-in drum-shaft slip clutch minimizes cable and tool breakage and provides overload protection.
11. Impact-resistant plastic belt-guard for additional operator safety.
12. Rugged ⅓ H.P. reversible motor delivers plenty of speed cleaning power.

SPECIFICATIONS

Drum Capacity:	75 ft. of either ⅜" or ½" certified music wire with genuine galvanized aircraft wire inner core cable.
Line Capacity:	1¼" to 3" lines up to 75
Weight:	(machine only) 53 lbs.
Frame:	1" open space framework
Clutch:	Dual disc drum shaft slip clutch.
Motor:	⅓ H.P. reversible

STANDARD EQUIPMENT

Electric Eel Model E comes complete with: 50 ft. of either ⅜" or ½" certified music wire with genuine galvanized aircraft wire inner core cable.

3 Cleaning tools.

One pair of leather gloves.

Safety Instructions

The following safety rules for operating Electric Eel Sewer and Drain Cleaning equipment **MUST** be read carefully before operating this machine.

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To prevent serious injuries including:

- Shock, electrocution or burns due to improper grounding.
- Series injuries to body or limbs due to cables that twist, kink and break.
- Eye injuries caused by loose cable or thrown debris.

READ SAFETY INFORMATION THOROUGHLY!

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TO PREVENT SERIOUS BODILY INJURY:

GENERAL SAFETY

1. **ALWAYS** wear reinforced leather gloves and safety glasses when operating equipment.
2. Place machine within 3 ft. of inlet and keep both hands on rotating cable during operation.
3. Do not wear loose clothing, or jewelry while operating this machine.
4. Use footswitch to operate machine while keeping good footing and balance at all times. **DO NOT OVERREACH!**
5. Keep belt guard in place during operation.
6. The model "E" Drain Cleaning machine should be operated by one person only. Additional personnel in the working area should observe all safety instructions.
7. Wear rubber soled non-slip shoes.
8. **ALWAYS** avoid direct contact of skin, facial area and specially eyes with drain water. Chemical compounds used in drains can result in serious burns and other injuries.
9. Replace fittings, cables and any rotating parts as soon as they become visibly worn. Replace any cables which become fractured, bent, kinked, or any other damage occurs.
10. **NEVER** attempt to service equipment beyond the recommendations of the operating instructions. All other servicing should be referred to qualified service personnel.
11. To maintain safe operation, use only identical replacement parts and cables from Electric Eel.
12. **ALWAYS** keep clear of rotating drums, cages, shafts, pulleys, belts, or other rotating parts.

⚠ DANGER ⚠

TO PREVENT SERIOUS BODILY INJURY AND TO AVOID DANGER FROM ELECTRICAL SHOCK:

1. **ALWAYS** use a ground fault interrupted circuit with a properly grounded outlet for all electrical cords, connections, and parts as installed by factory and **DO NOT** make any alterations.
2. **NEVER** use machine in damp or wet conditions.
3. **NEVER** expose machine to rain.
4. **THE USER SHOULD NEVER ATTEMPT TO SERVICE THE ELECTRICAL COMPONENTS.** For safety reasons all electrical replacement components should be installed by a qualified electrician.
5. Before making adjustments or changes to power units, disconnect from electrical source.
6. If an extension cord is used, the power source must be equipped with a ground fault interrupter circuit and properly grounded.
7. Only use 14/3 or larger three-wire extension cords with three prong grounding plugs and three-pole receptacles.
8. When using extension cord outdoors, only use those intended for outdoor use. (Indicated on cord by suffix "W-A" after the cord type.)

THE GROUND FAULT CIRCUIT INTERRUPTER

The machine is equipped with a Ground Fault Circuit Interrupter which is designed to prevent a serious electrical shock. This device should be tested on job site before putting the machine into operation, as follows:

1. To ensure protection against electric shock, test the device before each use. When test button is pushed in, the indicator light should go off. Reactivate the device by pushing the reset button in. If the indicator light goes on, the device is ready for use. Do not use the device, if the indicator light does not go on when reset or if the indicator light remains on, when the test button is pushed in.

2. This device does not guard against electric shock resulting from defects or faults in any wiring supplying power to this device, or from contact with both circuit conductors.

⚠ DANGER ⚠

TO PREVENT SERIOUS BODILY INJURY AND TO AVOID DANGER FROM ROTATING CABLES AND EQUIPMENT:

1. **DO NOT** operate machine in reverse except to free cleaning tool from an obstruction.

2. **DO NOT** continue to operate machine when cleaning tool becomes stuck in obstruction. **EXCESS TORQUE ON A CABLE COULD CAUSE IT TO FRACTURE.** (Refer to operating instructions, to free cleaning tool.)

3. **NEVER** handle any cable under tension.*

4. **NEVER** force a tool and cable into a pipeline blockage. This may overload the cable or tool and cause it to fracture.

5. **ALWAYS** wear reinforced leather gloves and safety glasses when operating machine.

6. Keep both hands on rotating cable when machine is running.

7. Use correct tool for the job or application. Check the tool listing for the correct tool and line size.

8. To maintain safe and efficient operation clean thoroughly all cables with water after use. Acids in the drain and sewer lines can attack and deteriorate the metal of the cables and tools. Deterioration will cause weakness in cable and tools and result in fracture or breakage.

9. Replace all cables and tools that become deteriorated, worn, kinked, bent, or any other damage that occurs.

* Relieve all tension build up before attempting to handl cable

Machine Set-up

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TO PREVENT SERIOUS BODILY INJURY:

THIS MACHINE IS EQUIPPED WITH A DRUM/DISC CLUTCH. THE MAXIMUM TORQUE OF THE CLUTCH SETTING MUST NEVER EXCEED 35 inch/lbs.

NEVER USE ANY CABLE IN THIS MACHINE OTHER THAN ELECTRIC EEL GALVANIZED AIRCRAFT WIRE REINFORCED MUSIC WIRE CABLE ⅜" OR ½" DIAMETER.

The machine comes completely assembled except for cable.

DRUM REMOVAL

- Disconnect power cord before any set up or maintenance is attempted.
- Remove pulley guard by flexing bottom edges outward and pulling upward.
- Push down on motor to compress spring. This will allow the belt to be removed.
- Pull spring loaded pin on rear of drum axle.
- Slide drum unit with clutch assembly forward.
- Use reverse procedure for reinstalling drum assembly.
- Reinstall pulley guard.

CABLE INSTALLATION

- Loosen cable anchor from rear of drum.
- Completely uncoil cable to be installed. This will help avoid unnecessary kinking.
- Attach cable anchor to end of cable.
- Insert approximately 12" of cable through the guide tube into the drum. The cable should coil in the drum in the same direction as the decal indicates on the rear of drum.
- Grasp cable inside the drum near the end and position cable anchor on end so that the ¼-20 screw can be inserted through the hole in the rear of the drum into the cable anchor.
- Insert remaining cable into the drum.

MAINTENANCE

- Maintenance on the Model "E" machine should be minimal for the life expectancy of the machine.
- The drum/clutch should be exercised daily.

Exercise as follows:

- Plug in machine
- Grasp drum with two gloved hands firmly
- Depress foot pedal switch
- The machine will run but the clutch will slip as you hold the drum firmly. A few revolutions of slippage is all that is necessary

CLUTCH ADJUSTMENT

- The clutch setting of 35 inches/lbs. must **never** be exceeded
- The clutch setting in most cases will not need to be adjusted for the life of the machine
- If the clutch needs to be reset, the following procedure should be used:

1. Obtain an inch/lbs. torque wrench and E-20 adapter from Electric Eel.
2. Fit the adapter to the nose cone of the Model "E" machine as per included instructions with the adaptor.
3. Check the setting of the clutch with the torque wrench. If adjustment is needed, proceed as follows:
   - Remove 4 drum bolts from aluminum backing plate. This will allow drum removal and expose clutch mechanism.
   - Move clutch adjustment bolt ⅛ of a turn tighter or looser as needed and recheck setting after reassembly of drum. Repeat the procedure as needed to obtain 35 inch/lbs. maximum.
   - Reassemble and check all 4 bolts for tightness.

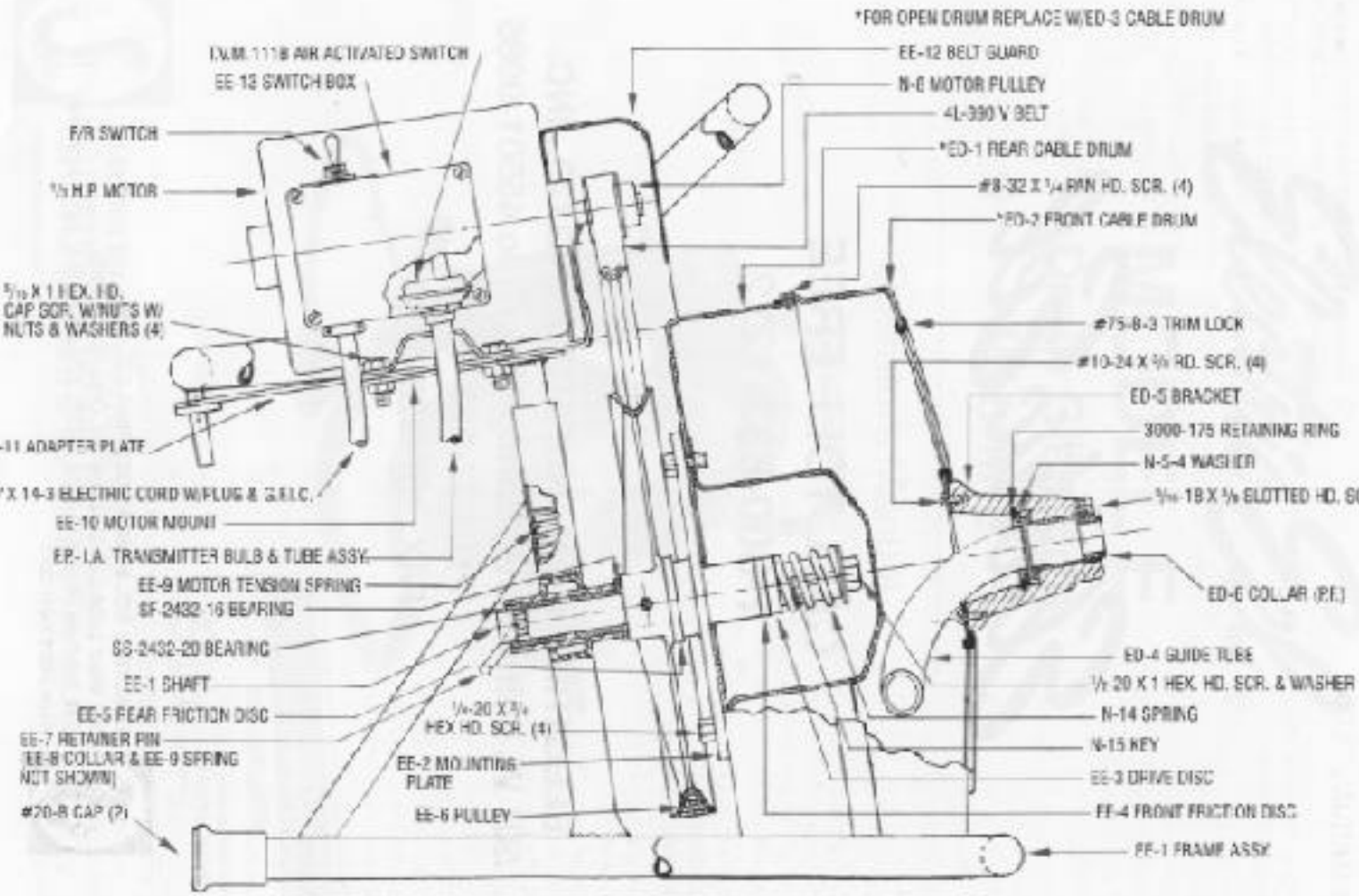
Operating Instructions

⚠ DANGER ⚠

OPERATOR MUST BE THOROUGHLY FAMILIAR WITH ALL SAFETY INSTRUCTIONS BEFORE OPERATING THIS EQUIPMENT.

FOR MANUAL FEED:

1. Place the drum machine within 3 ft. of the sewer cleanout.
2. Attach a small spear-type cleaning tool to the end of the cable. This tool will enable you to bore a starter hole in the obstruction, allowing backed-up water to drain.
3. Position foot actuator for easy operator accessibility.
4. Make sure **FOR/REV** switch is in the Forward position. Run machine in forward at all times during cleaning operation, use reverse only to dislodge tool lodged in pipe line.
5. Hand-feed the cleaning tool and approximately one (1) foot of cable into sewer cleanout.
6. With gloved hands on cable begin depressing the foot actuator to start the machine. **ALWAYS** keep two hands on the cable in order to guide and control rotating cable.
7. Apply downward pressure with gloved hands on cable; rotating cable will slowly work its way into the line.
8. Repeat steps 6 and 7 until obstruction is met. This will become apparent as operator can no longer feed additional cable into the line and/or cable slows or fails to rotate. **WARNING: DO NOT** allow machine to run when cleaning tool becomes hung up in obstruction and cable fails to rotate. This will cause cable to kink and/or break due to excess torque build-up. The clutch will also slip at this point further indicating the above condition. Switch the motor from forward to reverse and slowly back tool from obstruction.
9. To work tool through obstruction; Place toggle switch in Forward direction and begin running cable into line. When the cable hits an obstruction and starts to load, the operator should pull on cable in order to back tool away from obstruction. This procedure should continue until tool has fully worked its way through the obstruction. **NOTE:** For larger lines, it will be necessary to repeat steps 5 through 9 with a larger tool or blade after obstruction has been penetrated.
10. To retrieve cable from sewer line, manually pull cable from sewer and hand feed back into the machine, while continuing to run machine in forward rotation. **NOTE:** It is recommended to use a continuous flush of water to clean tool, cable, and sewer line as cable is retrieved.
11. When tool is close to cleanout opening release foot actuator and allow machine to come to complete stop.
12. Pull remaining cable and tool from sewer line and hand-feed cable back into machine.


*FOR OPEN DRUM REPLACE W/ED-3 CABLE DRUM
EE-12 BELT GUARD
N-6 MOTOR PULLEY
4L-390 V BELT
*ED-1 REAR CABLE DRUM
#8-32 X ¼ RHN HD. SCR. (4)
*ED-2 FRONT CABLE DRUM
#75-8-3 TRIM LOCK
#10-24 X ⅜ RD. SCR. (4)
ED-5 BRACKET
3000-175 RETAINING RING
N-5-4 WASHER
ED-6 COLLAR (P.E.)
ED-4 GUIDE TUBE
½-20 X 1 HEX. HD. SCR. & WASHER
N-14 SPRING
N-15 KEY
EE-3 DRIVE DISC
EE-4 FRONT FRICTION DISC
EE-1 FRAME ASSY
EE-2 MOUNTING PLATE
EE-6 PULLEY
EE-5 REAR FRICTION DISC
EE-7 RETAINER PIN
(EE-8 COLLAR & EE-9 SPRING
NOT SHOWN)
EE-9 MOTOR TENSION SPRING
SF-2432-16 BEARING
SS-2432-20 BEARING
EE-1 SHAFT
EE-10 MOTOR MOUNT
EP-1A TRANSMITTER BULB & TUBE ASSY.
EE-13 SWITCH BOX
F/R SWITCH
⅓ H.P. MOTOR
#20-8 CAP (2)