

# OPERATING INSTRUCTIONS AND MAINTENANCE MANUAL

DUAL CABLE

*Electric Eel*®

MODEL C



**!!DANGER!!**

**FOR YOUR SAFETY**

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



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# FOREWORD

The Model C Dual Cable Electric Eel is the result of more than 40 years of experience in the manufacture of sewer, drain and wasteline cleaning equipment.

It is designed to clean sewers and drain lines from 3" to 10" in diameter—for distances in excess of 200 feet. It is manufactured of the highest quality materials—and is constantly being improved to provide the most efficient machine available.

The patented dual cable is self-feeding. Sewer cleaning is thus reduced to a matter of adding or removing convenient 8 ft. cable sections. No forcing or rodding—and no manual handling of rotating cable—is required.

A basic set of sewer cleaning tools is provided for cleaning lines from 3" to 6" in diameter. These tools are designed to remove roots, grease, rags, sand and other obstructions that cause partial or complete blockage of sewer and drain pipes. These tools are shown on page 6 of this manual—together with additional tools that are available as optional equipment.

**Proper clutch adjustment is important** because it will prolong the life of the cable and the cleaning tools. On all machines shipped from the factory, the clutch has been set at 100 in./lbs. torque. We recommend that inexperienced operators maintain this adjustment. A torque adapter, shown on page 6, can be used in conjunction with a torque wrench to maintain proper clutch adjustment.

On-the-job tightening of the clutch may be necessary if difficult obstructions are encountered that prevent the cleaning tool from turning in either direction. However, after the obstruction is removed, the clutch should be returned to the normal setting.

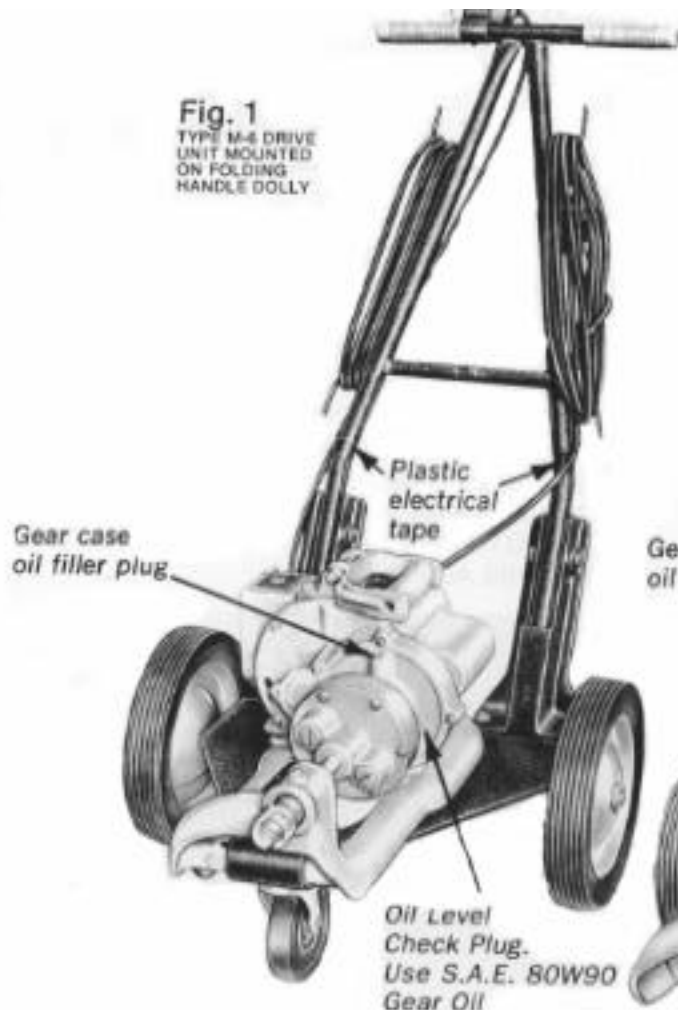
The dual cables can be repaired at any of our Electric Eel repair stations—or at our factory—providing, of course, that the cable components are not so badly worn or damaged that repair is impractical.

If you wish to do your own cable repair, we will be glad to send you an instruction sheet that shows how you can make your own basic repair tools—and gives you a step-by-step procedure for cable repair.

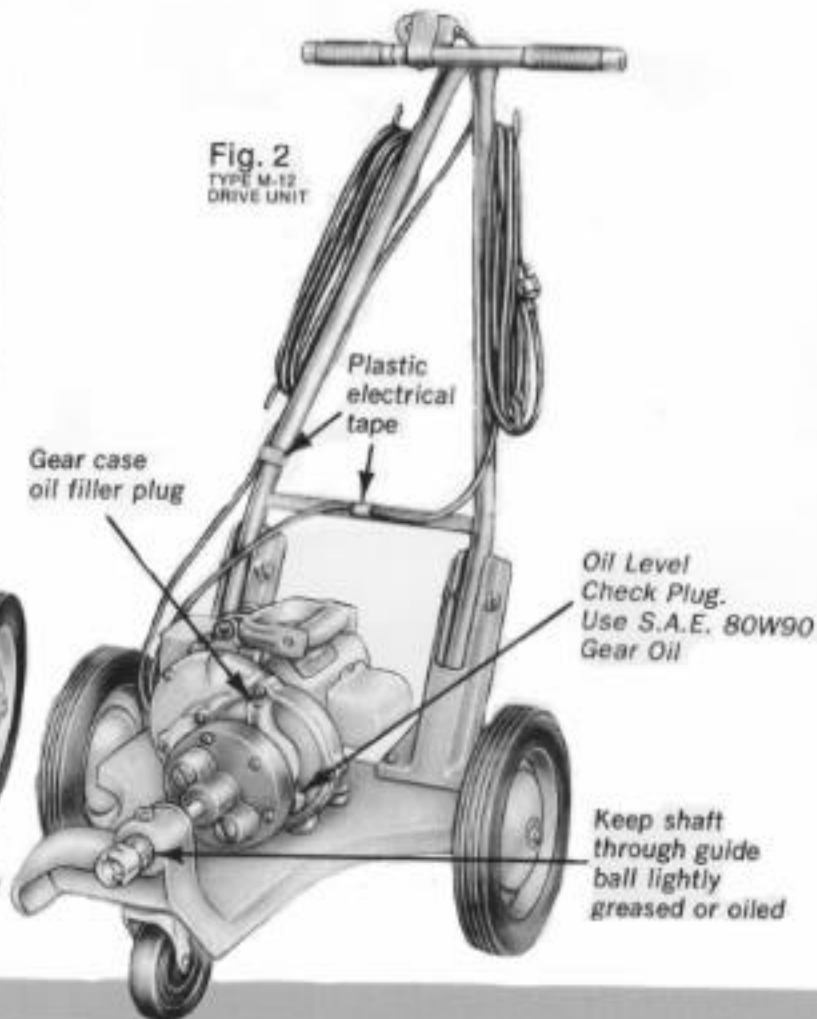
To obtain this sheet or any additional information regarding the Model C Dual Cable Electric Eel, write Electric Eel Manufacturing Company, Inc., Dept. R, 501 W. Leffel Lane, Springfield, Ohio 45501.

***Read this manual carefully! With proper care and operation, your Model C Dual Cable Electric Eel will give you years of satisfactory service.***

**Fig. 1**  
TYPE M-6 DRIVE  
UNIT MOUNTED  
ON FOLDING  
HANDLE DOLLY



**Fig. 2**  
TYPE M-12  
DRIVE UNIT



## ASSEMBLY

### TYPE M-6 DRIVE UNIT

Since this drive unit is removable, the dolly is shipped separately with wheels and front caster mounted. Set drive unit on dolly so that front cross member seats in pocket at front of dolly and the two rubber feet at rear fit into openings at rear of dolly. Anchor the rear of drive unit with hook and wing nut provided.

The folding handle assembly is attached to the motor base with (4)  $\frac{5}{16}$ " x  $1\frac{1}{4}$ " hex head cap screws.

To complete the assembly, wind the electric cords on the handle hooks so that the on-off switch fits in the switch clip on the right-hand side of the handle (as shown in Fig. 1). Bind the electric cords to each side of the handle with plastic electrical tape (as shown in Fig. 1) to prevent the cords from pulling against the switch box clamp when the handle is lifted for folding.

### TYPE M-12 DRIVE UNIT

Install the axle in the two holes in the motor base—and secure with the  $\frac{5}{16}$ " set screw provided.

Attach the wheels using a pushnut at the end of the axle to secure each wheel. The pushnuts can be at-

tached to the axle by gently tapping with a rubber mallet or block of soft wood—being careful to keep the pushnuts square with the axle.

The caster is attached to the front underside of the dolly base with the (4)  $\frac{1}{4}$ " x  $\frac{3}{8}$ " long round head screws and lock washers provided.

The folding handle assembly is attached to the motor base with (4)  $\frac{5}{16}$ " x  $1\frac{1}{4}$ " hex head cap screws.

## THE MOTOR

The motor is of the heavy duty, capacitor type—is back geared to give an output speed of 500 RPM—and is equipped with an electrical reverse.  $\frac{1}{2}$  h.p. 60 cycle, 115 volt is standard but  $\frac{3}{4}$  h.p. and one h.p. are also available and 220 volt, 60 cycle and 230 volt, 50 cycle can also be furnished.

When used on long, hard pulls—the motor temperature may rise as much as 40° centigrade. This will be somewhat uncomfortable to the hand, but will not hurt the motor or the bearings.

The motor bearings are of the grease-sealed type and should require no further lubrication.

# THE CLUTCH

**WHEN USING MODEL J  
CABLE - REDUCE CLUTCH  
SETTING TO 50 IN/LBS TORQUE**

The purpose of the friction disc clutch, which is located on the back gear shaft, is to prevent damage to the cable and cleaning tool whenever they become momentarily bound in an obstruction.

This clutch has been set at the factory at a torque of 100 inch pounds, which is the proper adjustment for practically all jobs. Should it be necessary to change this clutch adjustment because of wear or any other reason, adjustment should be performed as follows: Loosen the two clutch adjusting screws an equal amount to a point where the drive unit will turn the cable—but where the clutch will slip

when the slightest obstruction is encountered. Then, tighten the clutch by giving each adjusting screw one-half turn until the clutch will slip only under severe loading.

An accurate setting can be made with a torque adapter, shown on page 6, and a torque wrench that registers in./lbs. An approximate setting can be made as follows: Attach one length of cable to the machine—run the motor in forward—and adjust the clutch to slip when the cable is grasped firmly in both hands. **BE SURE TO WEAR HEAVY LEATHER GLOVES WHEN MAKING THIS ADJUSTMENT.**

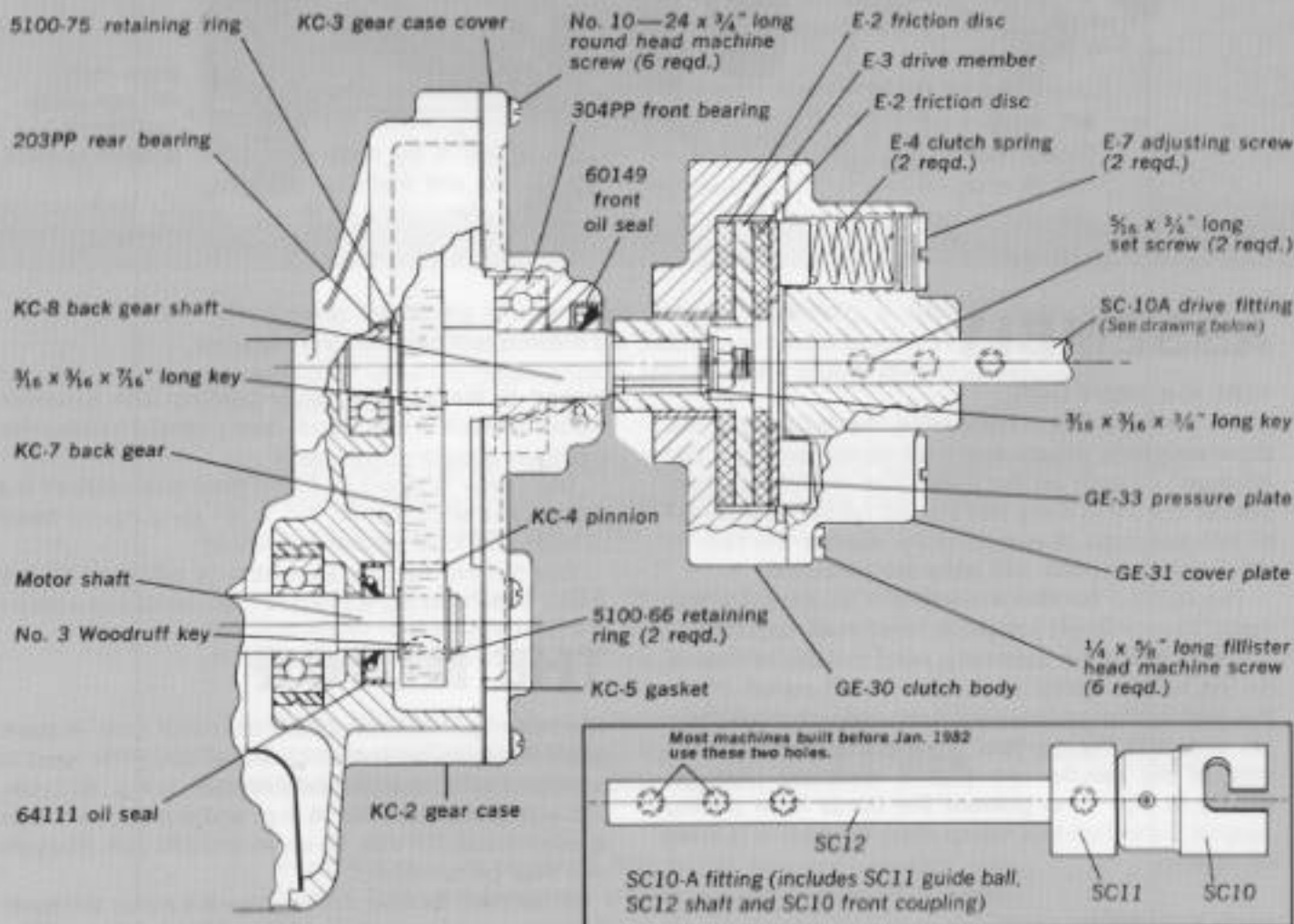


Fig. 3 Cut-away drawing of clutch and gear box

# THE CABLE

The Dual Cable consists of a heavy, right-hand wound, open spaced, helical spring outer member—and a left-hand wound, close spaced, music wire spring inner member. These two members are fastened together at each end to form a rugged integral unit that will self-feed through the pipeline in either direction.

Each cable section is 8 ft. in length and is equipped with patented snap-lock couplings. Cable sections are joined together—and cleaning tools are attached

to cable sections—by simply pressing the couplings together and then turning them until the snap lock pin in the male fitting engages the slot in the female coupling. They can be quickly separated by using the spanner wrench, as shown in Fig. 4 below.

Cables should be immersed or sprayed with SAE20 or SAE30 oil (used motor oil is suitable) after each job to keep them free of rust. The snap-lock pin on the SC1 (male fitting) should be occasionally oiled—or immersed in oil—to keep it working freely.

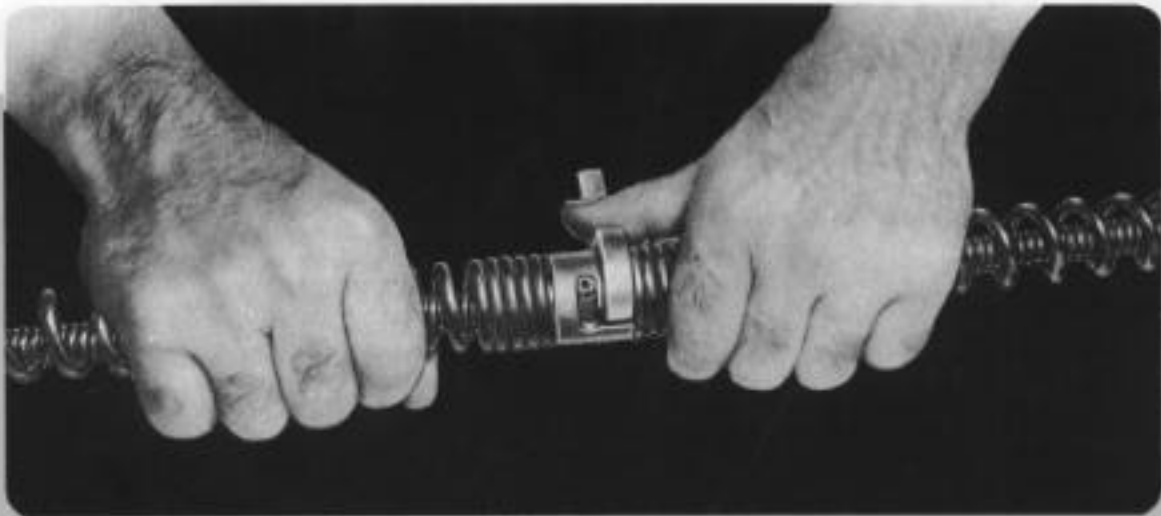


Fig. 4 Separating cables with spanner wrench

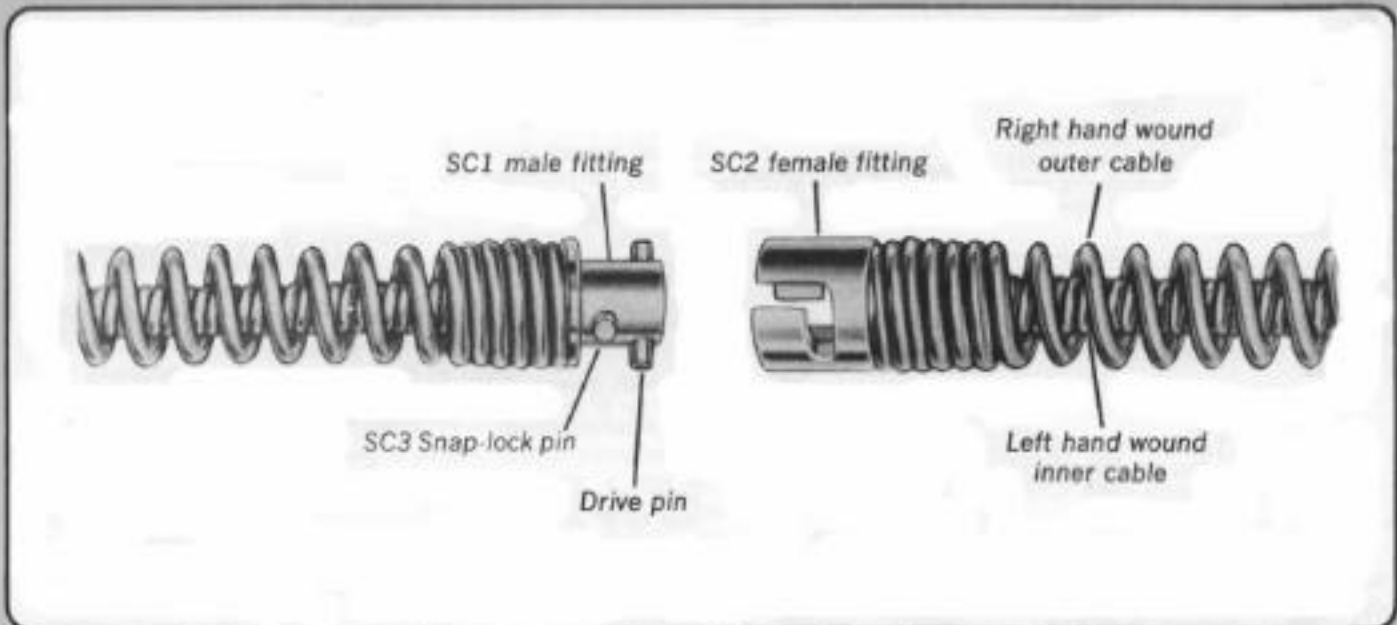


Fig. 5 Dual Cable

# CLEANING TOOLS

The cleaning tools shown below fall basically into two categories: (1) starting tools which have drill or spade points, and (2) finishing tools which usually are of a flat spring design with serrated edges. 3" and 4" diameter lines can usually be cleaned by using the starting tool to make the initial opening—and then using the finishing tool for the second run through the line.

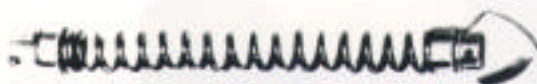
Badly blocked pipelines usually require more than two runs through the line. Progressively larger cleaning tools should be used on each run until the line is cleaned to its original diameter.

EXAMPLE: A badly blocked 4" pipeline should be opened with the A-1DC tool. The HDD-3S tool should be used for the second run. The finishing run should be made with the HDD-4S tool—or with the A-14DC tool if entrance is made through a "P" trap.

Since the dual cable imparts a whipping action to the cleaning tool, the opening made in the pipeline obstruction is approximately 1/2" to 1" larger in diameter than the cleaning tool.

The six tools shown directly below are furnished as standard equipment with the Model C Electric Eel.

## STANDARD TOOLS FOR MODEL C ELECTRIC EEL



**HDD-2T.** A 2 3/8" tool for making an initial opening in a 4" or larger pipeline.



**A-2DC.** A 2 3/8" tool for making an initial opening in a 4" or larger pipeline.



**HDD-4S.** A 3 1/4" diameter heavy duty tool for difficult obstructions in 4" or larger pipelines.



**A-1DC.** A 1 7/8" tool for making an initial opening in a 3" or larger pipeline.



**A-14DC.** A 3 1/2" diameter finishing tool for 4" pipelines. Will negotiate 4" "P" traps.



**HDD-7.** A tool for retrieving broken cable, tools or other objects from pipeline.

## OPTIONAL TOOLS AND ACCESSORIES



**U-3** (1/16" thick blade)  
**U-3H** (1/8" thick blade)  
Tools for removing grease in 3" diameter pipelines.



**A-6ADC.** A 5" diameter finishing tool for 6" pipelines.



**SC19.** Provides a swivel joint between cleaning tool and cable.



**U-4** (1/16" thick blade)  
**U-4H** (1/8" thick blade)  
Tools for removing grease in 4" diameter pipelines.



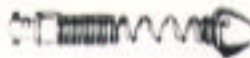
**A-17DC.** A starting tool for difficult turns in 3" diameter pipelines.



**ST-2.** A bulb shaped cleaning tool for use in 4" plastic pipeline.



**U-6** (1/16" thick blade)  
**U-6H** (1/8" thick blade)  
Tools for removing grease in 6" diameter pipelines.



**A-2TDC.** A starting tool for difficult traps and turns in 4" diameter pipelines.

**ST-1.** A right wound retriever tool.



**A-3DC.** A finishing tool for use in broken or uneven 4" diameter field tile.

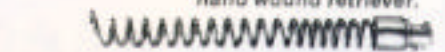
**HDD-2A.** Shown below.) Another right hand wound retriever.



**A-13-2DC.** A finishing tool for 3" diameter conductor lines.



**HDD-3S.** A heavy duty tool for 3" and larger diameter pipelines.



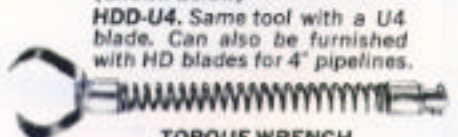
**HDD-U3.** A 12" spring with a U3 blade up front. For 3" pipelines. (Shown below)



**A-13DC.** A finishing tool for 4" diameter conductor lines.



**HDD-5S.** A heavy duty tool for 6" and larger diameter pipelines.



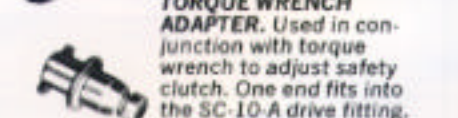
**HDD-U4.** Same tool with a U4 blade. Can also be furnished with HD blades for 4" pipelines.



**A-2-3DC.** A 3" tool for removing hard deposits in 4" and larger diameter pipelines.



**HDD-7S.** A heavy duty tool for 8" and larger diameter pipelines.



**TORQUE WRENCH ADAPTER.** Used in conjunction with torque wrench to adjust safety clutch. One end fits into the SC-10-A drive fitting. The other end has a hex head that fits a 5/8" socket.



**A-2-3DC Special.** The best tool available for chopping ice in 4" diameter pipelines.

# OPERATION

Before beginning a job, check out the line to be cleaned. If possible, find out where it goes. Check for clean outs—and, when possible, avoid traps by using an opening beyond the trap.

To begin a job, wheel the machine into the space where the work is to be done. Remove as many lengths of cable from the cable container as operating space will permit—and use a spanner wrench to separate the cables (as shown in Fig. 4, page 5). Usually, one to three lengths of cable are used—depending on available operating space. Select the proper cleaning tool to handle the job (see descriptions on page 6)—connect it to the cable—and then insert it into the opening of the pipeline that is to be cleaned. If it enters the pipeline freely, feed it in by hand until an obstruction is met. Then, attach the cable to the machine. **BEFORE TURNING ON THE MOTOR, BE SURE THE REVERSING SWITCH IS ON "FORWARD."**

If the opening is trapped, it will be necessary to use the feeding tool to start the cable into the line. The feeding tool is held against the rotating cable so that the cable feeds into the pipeline far enough to gain its own footing. If one man is starting the job and it is necessary to use the feeding tool, remove the starting switch from its bracket and use it and the feeding tool as shown in Fig. 7. The moment the cleaning tool has negotiated the trap, shut off the motor and return the switch to its bracket. Avoid 'P' traps in 3" dia. pipelines as they can cause severe cable damage. We recommend our Model J cables and cleaning tools for this application.

The feed-in action of the cable is so positive that it is often difficult to know when a stoppage has been reached. A good indication, however, is a laboring motor or a slippage of the safety clutch. It is a good policy to work back and forth—by alternating the motor in reverse and forward for a few seconds in each direction—until the initial opening is made. It is not necessary to let too much cable out of the line. A foot or two backward and forward several times should do the job.

When the machine is two to three feet from the opening, disconnect the cable at the machine and add as many lengths of cable as space permits. Repeat this operation until flow is established. **WHEN POSSIBLE, KEEP PLENTY OF WATER RUNNING THROUGH THE LINE WHILE WORK IS BEING DONE.** This allows the obstruction, broken loose by the cleaning tool, to be flushed out. This also allows the cable to be washed off when it is withdrawn from the pipeline. It is important to wash off the cable in this manner—or with a hose—immediately after job is completed. This prevents damage to cable by acid often present in sewers and industrial drains.

**WARNING:** Remember, this is an electrically driven machine and, even though it is wired for a grounded outlet, caution involving wet surfaces should be used.

After the initial opening is made, reverse the motor to feed the cable out of the line. Use the proper tool to complete the job (see descriptions on page 6). Occasionally, a tool will hang up on some obstruction and will not feed back. If this happens, put the motor in forward rotation and pull back on the dolly until the tool is past the obstruction. Then, put the machine in reverse and the tool will feed out.

**WARNING**  
**DO NOT HANDLE**  
**ROTATING CABLE**

Fig. 6



Fig. 7



*The Model C Electric Eel has a folding handle so that it may be easily transported and stored. You will find that this feature is also advantageous when you are working in crawl spaces.*