

Feeding the Cable into the Drain

Manual Operation

1. Confirm that at least one foot (0,3 m) of cable is in the drain.
2. Grasp the exposed cable with both gloved hands equally spaced and pull 6"-12" (150mm - 300mm) of cable out of the drum so that there is a slight bow in the cable. Gloved hands must be on the cable to control and support the cable. Improper cable support can allow the cable to kink or twist and can damage the cable or injure the operator. Make sure that the cable outlet of the drain cleaner is within 2' (0.6m) of the drain opening (*Figure 13*).
3. Depress the foot switch to start the machine. The person controlling the cable must also control the foot switch. Do not operate the drain cleaner with one person controlling the cable and another person controlling the foot switch. This can lead to twisting, kinking and breaking of the cable.
4. Feed the rotating cable into the drain. The rotating cable will work its way into the drain as you push on the cable with gloved hands. Do not allow the cable to build up outside the drain, bow or curve. This can allow the cable to twist, kink or break.
5. When the cable has been fed into the drain opening, pull 6"-12" (0.15 - 0.3m) more cable from the drum and continue feeding the rotating cable into the drain.

AUTOFEED Operation

1. Confirm that at least one foot (0.3m) of cable is in the drain.
2. Grasp near the center of the exposed length of cable with a gloved hand. Gloved hand must be on the cable to control and support the cable. Improper cable support can allow the cable to kink or twist and can damage the cable or injure the operator. Make sure that the cable outlet of the drain cleaner is within 2' (0.6m) of the drain opening. Place the other hand on the AUTOFEED lever. AUTOFEED lever should be in neutral (Vertical) position (*see Figure 14*).

See "Using Machine with a Front Guide Hose" if using a guide hose.

- Depress the foot switch to start the machine. The person controlling the cable must also control the foot switch. Do not operate the drain cleaner with one person controlling the cable and another person controlling the foot switch. This can lead to twisting, kinking and breaking of the cable.
- With the cable rotating in the FOR (FORWARD) direction, move the AUTOFEED control handle toward the drain, to the ADVANCE position (*Figure 14 & 15*). This will cause the cable to feed out of the machine. The rotating cable will work into the drain as you control the cable with your gloved hand. Do not allow the cable to build up outside the drain, bow or curve. This can allow the cable to twist, kink or break.

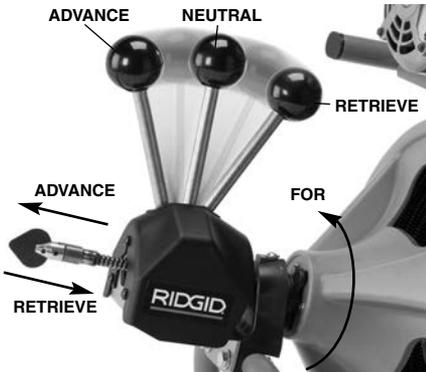


Figure 14 – AUTOFEED Directions (with Machine in FOR) When in Reverse, Feed Direction Will Be Opposite.



Figure 15 – Operating K-400 with AUTOFEED

Passing Through Traps or Other Transitions

If it is difficult to get the cable through a trap or other fitting, the following methods or combinations of methods can be used.

- Sharp thrusts of the cable, both with and without the cable rotating, can help the cable through a trap.
- In some cases with the switch in the OFF position, rotating the drum by hand can change the orientation of the cutter to allow it to more easily negotiate the fitting.
- Run the drain cleaner in REV rotation for several seconds while pushing on the cable. Only do this long enough to get the cable started through the trap. Running the cable in reverse can damage the cable.
- Attach a single section (only one section) of C-9 cable as a flexible leader between the end of the cable and the tool.

If these options do not work, consider using a smaller diameter or more flexible cable, or a different drain cleaner.

Cleaning the Drain

As you feed the cable into the drain, you may see the cable slow down or build up outside the drain. Always keep your hands on the cable. You may feel the cable start to wind or load up (this may feel like the cable is starting to twist or squirm). This may be a transition in the drain (trap, elbow, etc.), build up in the drain (grease, etc.) or the actual blockage. Feed the cable slowly and carefully. Do not let cable build up outside the drain. This can cause the cable to twist, kink or break.

Pay attention to the amount of cable that has been fed into the drain. Feeding cable into a larger drain, septic tank or similar transition may cause the cable to kink or knot and prevent removal from the drain. Minimize the amount of cable fed into the transition to prevent problems. Each wrap of the cable in the drum is approximately 3.5' (1.1 m).

Working the Blockage

If the end of the cable stops turning, it is no longer cleaning the drain. If the end of the cable becomes lodged in the blockage and power is maintained to the drain cleaner, the cable will start to wind up (this may feel like the cable is starting to twist or squirm). Having a hand on the cable allows you to feel this wind up and control the cable.

If the cable end stops turning or if the cable starts to wind up, immediately pull the cable back from the obstruction.

- Manual Operation – Pull back on the cable to free the cable end from the blockage.

- AUTOFEED operation – Move the AUTOFEED handle towards the machine to the retrieve position to free the cable end from the blockage.

Do not keep the cable rotating if the cable is stuck in a blockage. If the cable end stops turning and the drum keeps rotating, the cable can twist, kink or break.

Once the cable end is free of the blockage and turning again, you can slowly feed the cable end back into the blockage. Do not try to force the cable end through the blockage. Let the spinning end “dwell” in the blockage to completely break it up. Manual operation may give the best control in these instances. Work the tool in this manner until you have moved completely past the blockage (or blockages) and the drain is flowing.

While working the blockage, the tool and cable may become clogged with debris and cuttings from the blockage. This can prevent further progress. The cable and tool need to be retrieved from the drain and the debris removed. See section on “Retrieving the Cable.”

Handling a Stuck Tool

If the tool stops turning and the cable cannot be pulled back from the blockage, release the foot switch while firmly holding the cable. If installed, release the AUTOFEED lever to come back to the neutral (straight up) position. Do not remove hands from cable or cable may kink, twist and break. The motor will stop and the cable and drum may turn backwards until the energy stored in the cable is relieved. Do not remove hands from cable until the tension is released. Place FOR/OFF/REV switch in OFF position.

The torque limiter helps to prevent cable damage from cable flip over in the drum by stopping drum and cable rotation when the torque exceeds the setting. The motor will continue to rotate as long as the foot switch is pressed, but the drum and cable will stop rotating when the torque limiter setting is exceeded. The torque limiter cannot prevent all cable damage in the drum, and cannot prevent cable flip over outside the drum. If the drum stops turning, the cable and tool also are not turning.

Freeing a Stuck Tool

If the tool is stuck in the blockage, with the FOR/OFF/REV switch in the OFF position and the foot switch released, try pulling the cable loose from the blockage. If the tool will not come free from the blockage, place the

FOR/OFF/REV switch in the REV position. Grasp the cable with both gloved hands, press the foot switch for several seconds and pull on the cable until it is free of the blockage. Do not operate the machine in the REV position any longer than required to free the cutting tool from the blockage or cable damage can occur. Place the FOR/OFF/REV switch in the FOR position and continue cleaning the drain.

Retrieving the Cable

1. Once the drain is open, if possible start a flow of water down the drain to flush the debris out of the line and help clean the cable as it is retrieved. This can be done by running a hose down the drain opening, turning on a faucet in the system or other methods. Pay attention to the water level, as the drain could plug again.
2. The FOR/OFF/REV switch should be in the FOR position – do not retrieve the cable with the switch in the REV position, this can damage the cable. As with feeding the cable into the drain, cables can be caught while being retrieved.
 - Manual Operation – With both gloved hands equally spaced on the exposed cable for control, pull 6"-12" (0.15 - 0.3m) lengths of cable from the drain at a time and feed it into the drum. Continue retrieving cable until the cable end is just inside the drain opening.
 - AUTOFEED Operation – With one hand near the center of the exposed length of cable, move the feed lever towards the machine to retrieve the cable. The rotating cable will work its way out of the drain and back into the drum. Continue retrieving cable until the cable end is just inside the drain opening. Release the AUTOFEED lever to come back to the neutral position.
3. Release the foot switch, allowing the drum to come to a complete stop. Do not pull the end of the cable from the drain while the cable is rotating. The cable can whip around and cause serious injury. Pay attention to the cable during retrieval as the cable end can still become stuck.
4. Place the FOR/OFF/REV in the OFF position. Pull the remaining cable from the drain with gloved hands and feed into the drain cleaner. If needed, change the tool and continue cleaning following the above process. Several passes through a line are recommended for complete cleaning.

Using Machine with a Front Guide Hose

The front guide hose is an optional accessory to help protect fixtures and contain the liquid and debris thrown off of the cable. It can only be used with an AUTOFEED. Using the Front Guide hose can decrease feedback from the cable, making it harder to tell what conditions the cable is encountering. This may increase the possibility of damage to the cable. Using the front guide hose makes it more difficult to switch back and forth between manual and AUTOFEED operation.

Using a machine with the front guide hose is similar to using a machine with the AUTOFEED. Follow instructions with the following exceptions:

- When setting up the machine, insert the guide hose at least 6" into the drain.
- Instead of holding the cable, hold the guide hose. See *Figure 16*. Always control the guide hose and properly support the cable to prevent the cable from twisting, kinking or breaking.



Figure 16 – Using Machine with Guide Hose

When using a front guide hose, pay attention how the guide hose feels in your hand and watch the drum rotation. Because the guide hose is over the cable, there is less sensitivity to the loading of the cable, and it is harder to tell if the tool is rotating or not. If the tool is not rotating, the drain is not being cleaned.

If the tool continues to get hung up in the blockage, stop using the AUTOFEED (leave the feed lever in the neutral position) and work the cable manually. To do this, the cable must be retrieved from the drain and the guide hose removed to allow proper positioning of the machine to the drain and access to the

cable. Do not try to work the cable by hand with the front guide hose in place.

When retrieving the cable, be sure to stop the cable before the tool is pulled into the end of the guide hose to prevent damage.

Maintenance Instructions

⚠ WARNING

FOR/OFF/REV switch should be OFF and machine unplugged before performing any maintenance.

Always wear safety glasses and other appropriate protective equipment when performing any maintenance.

Cables

Cables should be thoroughly flushed with water after every use to prevent damaging effects of sediment and drain cleaning compounds. Flush cable with water and drain debris from drum by tipping machine forward after every use to remove sediment, etc. which can corrode cable.

Cable connector plunger pin can be lubricated with light machine oil.