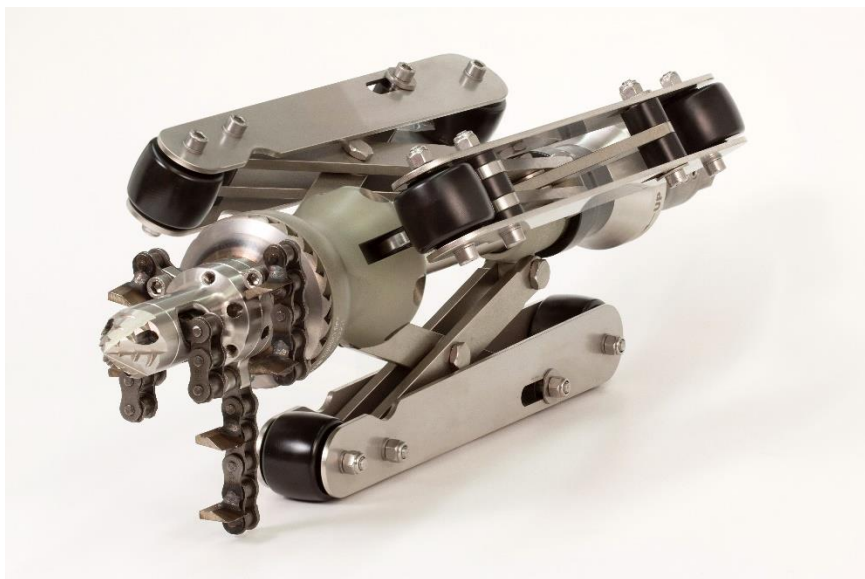




OPERATION MANUAL TURBO II FLEXIBLE CHAIN CUTTER 2200



*****SAVE THIS MANUAL FOR REFERENCE IN THE FUTURE*****

WARRANTY

The Turbo II Flexible chain cutter is warranted for one year from purchase against manufacturers defect.

GENERAL SAFETY RULES

!!Failure to read and follow these instructions may result in serious injury!!

- Dress properly – Do not wear loose clothing
- Always wear the proper eye protection
- Maintain the cutter with care. Keep the cutter clean or better and safe performance.
- Never use any grease, oil, gasoline, brake fluids, or any other solvent to clean or lubricate the cutter.
- Never operate a tool under the influence of alcohol, drugs or any other medication
- Use only recommended parts and accessories listed. The use of parts and accessories not listed may result in damage or personal injury

SPECIFIC SAFETY RULES

- ALWAYS remember to thoroughly clean the pipe prior to using the chain cutter. Remove all rocks, sand, dirt, and other debris as best as possible.
- ALWAYS make sure to check the cutter for any loose or missing parts prior to use.
- ALWAYS check the size of the pipe
- ALWAYS check the size for which the chain cutter is set up for, this includes the chain and skid.
- It is recommended that while operating the cutter, it be observed by sewer inspection cameras
- NEVER test the operation of the cutter outside of a properly closed pipe.
- ALWAYS make sure the cutter is fully inside of the pipe before turning on.

SPECIFIC SAFETY RULES

- ALWAYS reel the cutter back to the manhole while it is still spinning to avoid the chain getting hung up on an offset
- NEVER pull the cutter out of the pipe with the hose reel.

ADJUSTING THE SIZE OF THE SKID

1. Place the chain cutter on its tip so that it is vertical with the hose connection pointing towards the sky.
2. Insert the included punch into one of the predetermined holes towards the rear in the adjusting spindle
3. Hold the chain cutter with one hand and use the other to turn the punch either clockwise or counter-clockwise to expand or shrink the skids.

SIZING THE FLEXIBLE GUIDE SKID

1. Obtain the exact measurement but setting the chain cutter with one skid on a flat surface and measuring from the ground to the tip.
2. Double the measurement obtained in step 1 and that is the overall measurement the skid is set at. (Ex. 3.5" would mean the skid is set up for 7").
3. In most cases Turbo Chain Cutters should be set up for $\frac{1}{2}$ " – $\frac{3}{4}$ " less than the overall dimension of the pipe.
4. The guide skids can be as close to the size of the pipe as possible although offsets in the pipe usually limit this.
5. After reaching the desired size for the skid, tighten the green bolt on the skid.

OPERATION

Applications include: Roots, grease and scale

1. Very important to double check the size of the pipe to make sure the cutter is set up appropriately.
2. Connect HP hose to the rear of the chain cutter at the swivel and tighten thoroughly.
3. Carefully lower the cutter into the **DOWNSTREAM** manhole so that the cutter moves against the flow of water
4. Use a hook rod to insert the cutter into the pipe
5. Turn the water pump on once the cutter is completely inside of the sewer pipe.
6. Increase the RPM's enough to enable the cutter to move up the line to the obstruction.
7. Listen carefully as the cutter will make a high pitch squeal, this indicates the cutter is spinning
8. Once the cutter has reached the obstruction increase the pressure up to 2000.
9. As the high pitch squeal bogs down to a hissing sound the cutter will need to be brought back towards the manhole enough for it to regain its momentum and continue to cut.
10. Never ram the cutter into an obstruction
11. If necessary to pass an offset retrieve and adjust the flexible skid keeping in mind if it is more than a ½" the chains will also need to be adjusted
12. Only continue upstream once the cutter easily passes thru the last cut area to avoid any hang-ups.
13. Be sure to bring the Turbo Chain Cutter back to the manhole while the cutter is in operation to avoid a stationary piece of chain getting caught on something
14. Stop the water pump when the cutter is about 5 – 8 feet away from the manhole.
15. Pull the remaining hose and cutter completely out of the pipe by hand. Using the hydraulics from the truck will damage the skid.

CHAIN REPLACEMENT

Replacement chain comes in two different forms. Chain w/ bits cut to length ready to be attached to the quick-change chain retainer and 6ft bulk chain for the slide thru retainer.

CHAIN REPLACEMENT FOR QUICK CHANGE CHAIN RETAINER

1. The quick-change chain retainer has three tabs that allow chain to be attached.
2. Attached one piece of chain to each tab, if the chain has a bit make sure the sharp edge is pointed counter-clockwise.
3. Use **Blue Loctite** on the bolt and tighten nut as tight as possible by hand.

CHAIN REPLACEMENT FOR SLIDE THRU RETAINER

The slide thru chain retainer can be used with chain cut to the exact pipe size or it can be used with a slightly smaller piece of chain to give the cutter a tapered effect.

1. Determine the type of setup, tapered or exact size
2. Use bolt cutters to cut the chain
3. Take the cut piece of chain and slide it thru the retainer.
4. Center the piece of chain within the retainer so that the cutter is balanced and there is equal links on both sides
5. Use **Blue Loctite** on both set screws and tighten them as tight as possible by hand.

CHAIN CUTTER MAINTANENCE

Turbo Chain Cutters are designed to be a low maintenance and require no lubrication. Never use any oil, gasoline, brake fluids, or any other solvent to clean or lubricate the cutter.

1. Rinse cutter completely off when done using, paying special attention to the center pipe making sure there is no debris on it.

REMOVING FRONT INSERTS

- 1.** Depending on the cutter setup loosen either two set screws at the base of the slide thru retainer or five in the cross-cutter head.
- 2.** Use one punch provided and insert into the base of the slide thru chain retainer or side of cross cutter head.
- 3.** Use the second punch provided and Insert into the hole on the side of the quick-change chain retainer.
- 4.** Hold the punch in the quick-change chain retainer stationary while turning the punch in the cutting head counter-clockwise. Once loose remove completely.
- 5.** Remove the remaining items (quick change chain retainer, spacer and turbine) off of the shaft.
- 6.** After all items have been removed the front inserts will be exposed.
- 7.** Remove the inserts with the allen wrench provided by turning counter-clockwise. Slight heat may need to be applied if they don't unscrew easily but be careful not to overheat
- 8.** Use Blue Loctite and repeat the steps in reverse to install the inserts

REMOVING THE REAR INSERTS

- 1.** Locate the rear inserts in the body
- 2.** Using the punch provided, turn the inserts counter-clockwise. Slight heat may need to be applied if they don't unscrew easily but be careful not to overhead.
- 3.** Use Blue Loctite and repeat the steps in reverse to install the inserts.

Maintenance (continued)

HP SWIVEL

The HP Swivel should be regularly checked for connectivity and proper function. It should swivel smoothly with little to no friction. The HP Swivel is the only item on the chain cutter that may require grease lubrication.

1. Locate the set screws on the swivel
2. Remove both set screws by turning counter-clockwise
3. Insert zerk fitting and fill with grease
4. Use ***Blue Loctite*** when installing set screws back into the swivel.