TECH TIPS FROM NASSCO

Tech Tips by NASSCO is a bi-monthly article on trends, best practices and industry advice from NASSCO's trenchless technology membership professionals.

THE IMPORTANCE OF PROPER NOZZLE SELECTION

By NASSCO Member Jerry Weimer, Jerry Weimer Consulting

Choosing a set of sewer nozzles for a jetting/vacuuming crew or truck, or selecting the right sewer nozzle for a particular sewer cleaning task, can seem like an afterthought—after all, the real power in sewer cleaning lies in the expensive trucks, right? Wrong! An average truck with the proper nozzle will out-perform a better truck with the wrong nozzle.

Choose the right nozzle design for particular tasks. Factors to consider include the number, direction, and angle of jet streams, the type and material of jets (and whether they're replaceable), and the construction and material quality of nozzles.

The main reason to choose the proper nozzle for cleaning a section of sewer is to enable the operator to efficiently clean and remove the material that is in the sewer. Choosing a good set of quality nozzles for your equipment and deploying the right nozzle when actually cleaning sewers is the best way to take full advantage of big investments in jetting equipment and to clean sewers efficiently while reducing labor costs, wear and tear on equipment, and fuel use. Proper nozzle selection will increase the efficiency of the cleaning operation. The wrong nozzle may not remove the material completely.

The sewer should be inspected before cleaning to determine the type and amount of material to be removed. This will help determine the correct nozzle. Factors to consider include: type of material (loose, attached, large, small), size of pipe, pipe material, length of section, slope of pipe. The decision to use nozzles, chain knockers, and other mechanical means must consider structural defects in the pipe. Nozzles are designed for particular types of material removal and selecting the wrong nozzle can either prolong the job or not remove the material.

Choose the right nozzle design for particular tasks. Factors to consider include the number, direction, and angle of jet streams, the type and material of jets (and whether they're replaceable), and the construction and material quality of nozzles. Low degree jets (jetting angles more in line with pipes) on a nozzle will move loose material quickly, and thrust it longer and farther up the line (this is also good for breaking blockages). Depending on the size of the line, lower angle jets may remove debris differently depending on how the nozzle sits in the pipe. Wide-angle jets (more perpendicular to pipes) will clean the walls of a pipe but do not do an excellent job of moving loose material, and have less thrusting power.

Choosing the right nozzle, and investing in higher quality nozzles pays off with dramatically increased productivity (up to 100%), and better nozzles also tend to last longer, feature internal parts that can be replaced, require less maintenance, and generally provide significant return on investment over long lifespans.

With any nozzle, it is important that the nozzle is properly set up for the flusher with which the nozzle will be used. The jets on the nozzle need to be sized for the amount of actual flow at the end of the hose for the particular vehicle. This can be done by the nozzle supplier or in house. The wrong jets will decrease the efficiency of any nozzle.

Cutters are another option for cleaning sewers. The sewer should be free of all loose debris prior to using a cutter. The loose debris will slow down the cutter, make it less efficient and increase the time and effort necessary to complete the cleaning process.

The choice of a nozzle should not be taken lightly and the days of "my favorite nozzle" are in the past. A good operator is properly trained in the use of different nozzles and uses the correct nozzle at all times.