PROCESS:

The most important factor in the operation of an Automatic Trash Chute Cleaning System process is consistent Process factors. If a system is operated under constant conditions the bacteria grow to match the food load and produce natural polymers to aid in reproduction which provides constant changes in the type and quality of bacteria which results in the most effective cleaning properties.

Proper operation involves maintaining the correct amount of bacteria in the trash chute to absorb, or break down the organic material, and a sufficient oxygen supply. The microorganisms will perform best when they are fed the right amount of food.

How the food is used and how the bacteria grow is in direct response to the food build-up on the trash chute walls. If there is a large amount of food available to the bacteria, they will use the food in two ways. They need it for energy to support life, as movement, production of heat and maintenance of internal and external make up. More food allows production of more energy used for reproduction or cell growth. When excess food is available, both processes occur at the same time until the bacteria reach a certain size. The bacteria will reproduce by dividing themselves, and the divided bacteria will grow rapidly, if enough food is still available. The rapid growth and rapid decrease in the amount of food is called the “log-growth” phase.

As the food is used, and there is still too much bacteria for the amount of food, the bacteria work harder for their food and use more of the food to produce the excess energy needed for basic life functions. As less food is available for cell growth and reproduction, it will take a longer time to complete the reproduction. This slower growth rate is called “declining growth” phase.

When the trash chute reaches a stage where the food is limited, and the growth rate and death rate reaches an equilibrium, the “starvation” phase has started. To gain enough energy to stay alive, the bacteria begin to break down the cellular material they have built when there was plenty of food available. The growth phase, when the bacteria feed on their internal reserves and own body structure is called “endogenous respiration” and it provides the most effective cleaning properties.

During this phase, a sludge like substance is produced at a minimum rate because of self destruction. The **NuReTec® 8000 Automatic Trash Chute Cleaning System** has been designed to allow for the bacteria to reach the endogenous stage.

The **NuReTec® 8000 Automatic Trash Chute Cleaning System** has the ability to adjust to changing conditions, for the concentration of microbes will naturally increase to meet an increased food supply. If more bacteria are produced than there is food available, they will begin to feed upon themselves and decrease in number.

PROCESS CONTROL:

Four basic requirements must be met in order to maintain a successful Automatic Trash Chute Cleaning System. They are:

1. The Trash Chute must contain appropriate concentrations of solution to handle the existing food supply.

2. Oxygen must be present in sufficient quantity throughout the Trash Chute to support the reaction.

3. The contents of the Solution holding tank MUST be mixed properly.

4. The Injection Pump Control MUST be set to give the Trash Chute wall the proper amount of solution to cover the full length of the Trash Chute wall.

CONTROL OVER THE PROCESS IS ACHIEVED BY THE FOLLOWING:

1. Protecting the Trash Chute from excessive concentrations of toxicants and oil, and the proper operation of the primary treatment unit.

2. Maintaining a reasonable flow of organic loading by limiting the rate of flow from the holding tank.

3. Adding additional types of bacteria and solution to achieve process aims.

4. Adding ECOLO Odor Control “airSolution” to achieve odor control from the top of the Trash Chute.