Maximizing Conveyor Throughput

Many factors precipitate what will determine whether or not your conveyor wash system is successful. One of the major factors in determining success for the operator is the speed at which the conveyor is able to effectively deliver a satisfactory wash. It's reasonable to assume that the higher the speed of the wash process, the more vehicles that can be washed in a set amount of time. However, an increase in the speed of the wash process can sometimes lead to a decrease in the quality of the wash. These two factors; speed and satisfaction, must be carefully balanced in order to achieve warranted success.

Achieving the Best Throughput

In order to maximize throughput, the entire wash process needs to be evaluated from the time a customer starts a transaction to the time the wash is completed. Through observation of the wash process, you can determine where the operation bottlenecks, slowing down the wash procedure and decreasing throughput. Are customers having trouble with your transaction process? Do customers have trouble realizing what the next step is that they have to take in order to move on in the process? The majority of problems will be found before the actual wash even begins.

High-Speed Conveyor Improvements – Before the Wash Begins

In order to speed the wash operation and achieve a desired vehicle throughput of a true 100 vehicles per hour speed, Ryko Manufacturing Company studied the habits of customers at conveyor wash locations to determine what needed to be done in order to maximize customer throughput. Many of the problems that slowed the wash process were discovered to occur before customers even reached the entrance to the conveyor. High-speed conveyor systems are designed to combat the bottlenecks that occur prior to the wash.

Multi-Stage Loading – A Key to Maximum Throughput

A new concept for high-speed conveyor systems is to increase customer throughput by incorporating a Multi-Stage Loading system. This system allows a car to enter the "car wash pipeline" in an allotted period of time by creating an orderly flow of traffic from the initial transaction stage of the process to the actual beginning of the wash itself. This orderly flow of traffic is created through three staging areas:

Transaction Stage: During this stage, customers must complete the payment transaction for their wash. The transaction stage is vital to the throughput of the location. If the instructions and choices are unclear, unneeded time is wasted trying to complete a transaction. A high-speed conveyor system should offer a

clear, easy to follow transaction stage that allows the customer to make his choice and move on within the optimum time frame.

Staging Area: The Staging area allows for a constant flow of traffic toward the entrance to the actual wash. This area is designed to be a continuous move forward for customers as they approach the wash. This area removes bottlenecks commonly found when there are "stacking" problems at a site. The staging area provides an orderly stacking area where customers can move forward constantly toward the wash without effecting slowing the rate of traffic at the transaction area.

Launch Stage: The Launch Stage is where the actual wash begins. Simple to follow loading and positioning aids are vital at this area in order to reduce delays as customers begin the wash process. High-speed conveyors should be designed for self, flexible or full time loading, thereby giving the owner/operator the option of choosing the best way to achieve his target throughput with a minimum of delays.

High-Speed Conveyor Improvements - The Wash Process Itself

As mentioned before, there is a fine line to be balanced when speeding up the actual wash process while still achieving the highest customer satisfaction. Speeding up the wash to a point where the operation can wash a certain number of cars every hour means nothing if the equipment inside the wash is not designed to effectively wash the increased number of vehicles running through the tunnel. In order to take advantage of all a high-speed conveyor systems has to offer, the wash equipment itself must be converted to provide the highest level of customer satisfaction.

Equipment Enhancements

In addition to increasing wash throughput through the Multi-Stage Loading process, key advancements to the wash process itself need to be made in order to maintain maximum throughput while maximizing customer satisfaction

Shortened Loading Intervals: By shortening the interval needed between cars in the wash, more washes can be issued and given during a set period of time. High-speed conveyors decreased the length of wasted space needed between cars, thereby increasing the number of cars an owner is able to load during a set period of time

Increased Equipment Speed: With the shorter amount of time the equipment is allowed to wash a vehicle, the cleaning ability of the equipment

must be maximized. By increasing the rotations per minute of the front, side and top wraps, cleaning power is synchronized to the wash process. The increased speed of the washers allows more cleaning power in a shorter amount of time. By increasing the rotation of the washers, dwell time – the amount of time that the cleaning material actually touches the vehicle – is incrementally increased, leading to better cleaning results and increased customer satisfaction.

Effective Chemical Coverage: Again, with the increased throughput and speed of the wash process, the chemical dispensing system must be synchronized to the increased speed in order to achieve maximum coverage and satisfactory results. High-speed conveyor systems feature chemical coverage that works in tandem with the wash speed increase

Wash Enhancing Components In order to keep customer satisfaction at a peak and also accommodate all types of vehicles, new components should be introduced to the wash process. An effective high-speed conveyor system adds new components to the process, such as side washers that add to the cleaning effectiveness of the system while providing better cleaning results for all sized vehicles. More wash enhancing components do not necessarily speed the wash process up but they do not slow it down either. The benefit of adding wash enhancing components to a high-speed conveyor system rest in the increase of customer satisfaction resulting from the wash results and in the value of the upgrades customers make to take advantage of the components.

Increased Throughput – A Summary

Many factors can affect customer throughout during the wash process. The best way to maximize throughput can be summarized as follows

Before the wash

- Create an orderly, customer friendly transaction, stacking and loading area. By doing this, a constant flow of traffic can be achieved at the entrance of the tunnel
- Reduce bottlenecks and delays in the process before the wash begins. By adding customer loading and positioning aids, easy to follow instructions and visual support the flow of traffic to the tunnel entrance will be smooth and orderly

- Simplify the car wash transaction time by taking all convenient forms of payment that a customer could use including cash, credit cards or codes.

During the wash

- Upgrade equipment before speeding up the wash process. Speed is meant to enhance customer satisfaction…not replace it.
- Reduce the amount of time needed to clean each vehicle be increasing the speed and cleaning power of each component involved in the cleaning process.
- Use customer loading and positioning aids to reduce delays that might take place during the initial customer loading at the entrance of the tunnel.
- Add enhanced cleaning components to maximize wash satisfaction and wash quality. These components will not slow the wash process but will increase customer satisfaction

Many factors will determine whether or not your conveyor wash system is successful. Throughput can be a major benchmark of your success. However, the most important factor is and will always remain customer satisfaction. Maintaining the optimum balance between speed and customer satisfaction will help to achieve the goal of a true 100 cars per hour high-speed conveyor location.

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