



**EQUIPMENT KNOWLEDGE**

**PRODUCT KNOWLEDGE**

**UNLIMITED SPEED CLUB KNOWLEDGE**

**WASH BOOK KNOWLEDGE**

**DEVELOPMENT PROGRAM**

# **EQUIPMENT, PRODUCT, USC & WASH BOOK KNOWLEDGE DEVELOPMENT PROGRAM**

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# **EQUIPMENT, PRODUCT, USC & WASH BOOK KNOWLEDGE DEVELOPMENT PROGRAM**

## **OVERVIEW**

### **WHY**

The purpose of the equipment, product, unlimited speed club, and wash book knowledge development program is to give employees the information needed to attain a proficient understanding of each category.

### **WHAT**

The following are the items you will need to effectively deliver the information:

#### **Equipment Knowledge**

A list of all equipment, and their descriptions, used at the car wash in the tunnel and equipment room.

#### **Product Knowledge**

A list of all wash products, and their descriptions, used in the car wash as well as the wash packages and what products each package contains.

#### **Unlimited Speed Club Knowledge**

An overview of the Unlimited Speed Club, its purpose and the key points.

#### **Wash Book Knowledge**

An overview of a Wash Book, its purpose and the key points.

#### **Handouts**

For the equipment and product knowledge sections there are accompanying handouts that will be given to the team member for independent study and review after teaching.

## **EDUCATE**

In this program, you will find a section for each of these categories that will provide the terminology and language we will use when communicating with fellow team members and customers. By being knowledgeable and having consistent descriptions allows for more clear and effective communication. Additionally, if we all use the same terminology and language when referring to those items, we will achieve more consistency across all of our locations.

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## KNOWLEDGE DEVELOPMENT PROGRAM

### EQUIPMENT KNOWLEDGE

#### Tunnel

##### Why

We want everyone working in our stores to understand the equipment that they are working with every day. The purpose of being knowledgeable about the equipment used in the car wash tunnel is to ensure effective communication with your team about any observed issues as well as familiarity with how each piece should function. Having a solid knowledge of the equipment lays the groundwork for later when you are helping to maintain, troubleshoot and repair equipment.

##### What

The following are the items you will need in order to become knowledgeable about the equipment in the tunnel:

Knowledge of Tunnel Equipment

A list of all tunnel equipment we use will allow you to review and study the information.

#### Educate

In each of our car wash tunnels we use a number of different pieces of equipment, and each piece serves a specific and important purpose. The equipment package varies from wash-to-wash and your location may not have everything discussed in this module, but your manager will review the equipment at your location. Let's review each piece of tunnel equipment and their functions.

#### *Air Cylinders*

Air cylinders are one of the most commonly used pieces of equipment in the car wash tunnel with many pieces of equipment relying on them to function properly. Air cylinders function by using air to extend and retract the arm. As air enters the cylinder the arm extends, and as air is released the arm retracts. As we review each piece of tunnel equipment, we will point out the pieces that utilize air cylinders.

#### *Shocks*

Similar to air cylinders, shocks are commonly used and found on multiple pieces of equipment in the tunnel. Depending on the piece of equipment, shocks are used to hold tension on a pivot arm or to help equipment move smoothly back to its home position. As we review each piece of tunnel equipment, we will point out the pieces that utilize shocks.

#### *Bearings*

Rotation bearings attach to the equipment's shaft and rotate 360 degrees as the piece of equipment spins. On the other hand, pivotal bearings do not make full rotations and have varying degrees of movement. Rotational bearings are attached to a pivot arm and allow equipment to move toward, around and away from vehicles.

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### **Applicators**

#### Foam Generator

Foam generators are tubes that contain coarse, sponge-like material that chemicals move through once the chemical is dispensed from the equipment room. As a product goes through a foam generator tube, the material makes the product become foamy and then dispenses a foamy product onto the vehicle. In addition, when product is dispensed from the equipment room, air is also moved into the foam generator which further aids in foaming the solution. Depending on the application of the product, foam generators can be paired with a multitude of applicators such as a max foamer, K-nozzle or banana foamer.

#### K-nozzle

K-nozzles dispense a light foamy product onto the vehicles in a V-pattern. Depending on the product being dispensed, the angle of the nozzle will vary.

#### Max Foamer

The max foamer is used to dispense products that are applied to the vehicle from the top of the arch they are mounted on.

#### Banana Foamer

Banana foamers feature a curved tube that dispenses product through a series of holes in one side of the tube.

#### Chemical Tire Applicator

A chemical tire applicator, or CTA, applies cleaning products to the wheels and tires.

### **Motors**

Throughout the tunnel there are many pieces of equipment that are powered by motors that function to rotate the equipment. These motors can be either hydraulic or electric, but they both serve the same purpose.

#### Hydraulic

Hydraulic motors are powered by hydraulic oil flowing in and out. The hydraulic fluid is sent from a powerpack in the equipment room to the motor in the tunnel and back again. This cycling of fluid causes the motor to move and the attached piece of equipment to spin.

#### Electric

Electric motors are powered by electricity and individually power the piece of equipment they are mounted to.

### **Correlator**

The correlator is located at the entrance of the tunnel just before the conveyor, and functions to ensure that the rear wheels of the vehicle line up properly with the conveyor. Correlators are made up of multiple bars or rollers that rotate as they position the vehicle.

### **Conveyor**

The conveyor is the workhorse of the car wash and it the most critical piece of equipment in the tunnel. The conveyor is responsible for moving vehicles through the tunnel and is capable of moving several full-sized vehicles at one time. When referring to the conveyor, there are

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multiple components that make up the piece of equipment and each piece is important to the overall functionality of the conveyor. Additionally, the conveyor can be powered by either a hydraulic or electric motor. Let's review each section and component of the conveyor:

### Chain & Rollers

The chain is a series of interlocked links that travel the length of the conveyor in a loop, and the rollers are intertwined with the chain. The rollers sit behind the rear tire and move with the chain push vehicles through the tunnel. At our locations, we have various types of chains and rollers, but, regardless of type, they all serve the same purpose and function.

### Conveyor Decks

The conveyor decks refer to the surfaces that the rollers move along as they go through the tunnel. The deck that rollers travel on when they are moving a vehicle is the top deck. When the rollers are moving from the entrance to the exit of the tunnel, but they aren't behind the tire moving the vehicle, they are on the middle deck. When rollers on either the top or middle deck reach the exit of the tunnel, they change direction and move along the bottom deck.

### Take-up Section

The take-up section sits at the tunnel entrance right after the correlators. The take-up section consists of the take-up drum, roller up forks, shocks and an air cylinder.

### Take-up Drum

The take-up drum is a free spinning wheel that allows rollers to move from the bottom deck to the middle deck, and back towards the tunnel exit.

### Roller-up Forks

The roller-up forks sit just before the start of the conveyor decks and function to move rollers to the upper deck. When the back tire crosses the tire switch, a signal is sent to activate the air cylinder which then moves the forks into position. After the appropriate number of rollers have been moved to the top deck, the air cylinder disengages and the fork return to their home position. When not engaged, the forks will lay flat and allow rollers to freely move to the middle deck.

### Drive Section

The drive section is the last part of the conveyor and is located at the exit end. The drive section is made up of the sprocket, HEKO drive and, depending on your location, the pulse switch.

### HEKO Drive

The HEKO drive is a gear reducer that allows the hydraulic, or electric, motor to attach to the sprocket.

### Sprocket

The sprocket is similar to a gear, and has a series of teeth that grip chain links and as the motor turns. The sprocket style and configuration will differ based on chain style, but the function remains the same. The sprocket holds onto the chain and moves it from the top or middle deck to the bottom deck, and back toward the tunnel entrance.

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### **Pulse Switch**

The pulse switch is used to calculate the distance the conveyor has travelled. Attached to the sprocket, or located in the equipment room, the pulse switch measures the time that the photo eyes are broken as the vehicle enters the tunnel. From that data, the appropriate timing for device operation on that vehicle can be configured.

### **Tire Switch**

The tire switch is a pressure pad, or photo eyes, located on the passenger side of the tunnel just past the correlator. As the vehicle enters the tunnel the pressure pad counts two pressures, and after the second pressure, it activates the air cylinder that engages the roller up forks so the rollers can move to the top deck of the conveyor. Similarly, when the photo eyes detect a second break in the eyes, the air cylinder will activate the forks.

In addition to activating the roller-up forks, the tire switch measures the distance between wheels on the vehicle. This measurement then enables the CTAs to apply wheel cleaner at the proper times.

### **Photo Eyes**

The photo eyes are located just behind the entrance arch. They measure the length of the vehicle based on when the eyes are broken and when they come back together. Be sure not to cross between the eyes during operations as you could activate the car wash.

### **Vehicle Profile Detector (VPD)**

The vehicle profile detector, or VPD, is located just after the grand entry arch, and is uses sonar to measure the height of vehicles to aid in detecting truck beds and activating open bed retracts when needed.

### **Wraps**

The wraps utilize an all-friction cleaning process to clean the front, sides and back of the vehicle. Of all the tunnel equipment, the wraps have the most contact with the vehicle. Touching the entire grill, vehicle sides from top-to-bottom and the back of the vehicle. Wraps are powered by either a hydraulic or electric motor that is mounted to the brush shaft.

### **Tire Brush & Tire Shiner**

The tire brush and tire shiner are vertical brushes that focus on the wheels and tires. Both brushes rotate on a shaft that is connected to either a hydraulic or electric motor.

The tire brush is located towards the middle of the tunnel and is used to provide friction cleaning the wheels and tires. The tire shiner is used to apply tire shine to the tires at the end of the wash.

### **Rocker Brush**

The rocker brushes utilize an all-friction cleaning process and they focus on the rocker panels and the lower quarter of the vehicle. While not always the case, rocker brushes are commonly found affixed to the tire brushes.

### **Side Washers**

The side washers utilize an all-friction cleaning process and they focus on the sides of the vehicle. Side washers have many size variations but they will always only focus on the sides of

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the vehicle. Side washers are powered by either a hydraulic or electric motor that is mounted to the brush shaft.

### ***Mitters***

The mitter is made up of free-hanging cloth and is used to clean the top surfaces of the vehicle including the hood and roof. Mitters move either front-to-back or side-to-side, but the movement direction does not alter their function, only the pattern in which the material moves across the vehicle.

When the mitter is engaged, the motor begins to move the gearbox which is connected to the drive arm. As the gearbox turns, the drive arm moves the basket. This creates the motion of the mitter as the vehicle passes through it.

### ***Top Brush***

The top brush utilizes an all-friction cleaning process and focuses on the top of the vehicle including the hood, roof, trunk and rear of the vehicle. The top bush is powered by either a hydraulic or electric motor that is mounted to the brush shaft.

### ***High-Pressure Rinse & Wheel Blasters***

The high-pressure rinse utilizes high-pressure water to remove end-line soaps and waxes to prepare the vehicle for the final rinse and drying processes. Similarly, the wheel blasters provide a high-pressure rinse of the wheels, tires and the lower portion of the vehicle.

### ***Underbody***

The underbody is used to rinse and remove road grime, salts and other corrosive materials from the underside of the vehicle.

### ***Rain Bars***

Rain bars are utilized during our rinse process to provide a gentle rinse of the vehicle as well as to apply end line sealants and protectants. Rain bars come in various configurations including 1-hole, 2-hole and 3-hole. The configuration will depend on what they are being used to dispense and the volume required.

### ***Mirror Rinse***

Similar to a rain bar, the mirror rinse provides a gentle rinse of the vehicle. The mirror rinse focuses on side view mirrors and the sides and back of the vehicle.

### ***Blowers***

The blowers are located at the end of the tunnel after the rinse section and are used to dry the vehicle. Blowers are powered by individual motors that allow blowers to function independently of one another.

### ***Blower Gates***

When blowers turn on and off, the initial ramp up takes an incredible amount of electricity and can put unnecessary stress on the blower motors. To help reduce the electricity needed and stress on the motors, the blower gates allow the motors to start unloaded. In other words, air is not flowing through the blowers as they start which leads to less strain on the motor. Once the vehicle reaches the appropriate point in the tunnel, the blower gate will open and allow the full flow of air through the blower.

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### Mufflers

Mufflers are used to dampen the sound produced by the blowers. The blowers generate over 90 decibels of sound when activated, and at some locations, especially those located near residential areas, it is necessary to reduce the sound emitted by the blowers.

### **Anti-Collision**

The anti-collision is located at the end of the tunnel, and detects when a vehicle is stopped at the exit. The anti-collision may be in the form of a one- or two-stage floor mounted sensor pads or photo eyes mounted at the exit of the tunnel.

If a vehicle has activated the anti-collision, and the vehicle behind it gets within the distance threshold, the conveyor will stop until the vehicle moves from the tunnel exit. Once the anti-collision is clear of the vehicle, the tunnel will restart.

### **Wait/Go Light**

The Wait/Go light is located after the exit of the tunnel and is used to indicate to customers when it is time to shift their vehicle back into drive and exit the tunnel.

### **Trench**

The trench is the area that houses the conveyor as well as the open space underneath the grates in the tunnel. All the dirt, grime, water and everything else in the tunnel drains down into the trench.

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### Equipment Room

#### Why

Just like with the equipment in the tunnel, we want everyone to understand the equipment that they are working with every day. The purpose of being knowledgeable about the equipment used in the equipment room is to ensure effective communication with your team about any observed issues as well as familiarity with how each piece functions. Having a solid knowledge of the equipment lays the groundwork for later when you are helping to maintain, troubleshoot and repair equipment.

#### What

The following are the items you will need in order to become knowledgeable about the equipment in the tunnel:

Knowledge of Equipment Room Equipment

A list of all equipment we use in the equipment room will allow you to review and study the information.

#### Educate

We use several items in the equipment room, and each piece serves a specific and important purpose. For the most part, all the items in the equipment room are responsible for powering the equipment and chemical functions in the tunnel. Your location may not have everything discussed in this module; you may even have some items that aren't covered. Additionally, not all locations have their equipment in one room. Some locations have separate electrical rooms that house the electrical components found in the equipment room. Regardless of the equipment, and its location, your manager will review all the equipment and locations at your store. Now, let's review each piece of equipment and their functions.

#### ***Tunnel Controller (TC)***

The tunnel controller, or TC, is used to control the timing of equipment function. Within the TC there are multiple relay cards that each have individual relays. Each relay is programmed with specific timing parameters that dictate when equipment turns on or off based on the location of the vehicle in the tunnel. Relays can be in one of three positions; ON, OFF or AUTO. Under normal operations, relays are set to AUTO, which means the equipment functions based on the timing specifications. When the relay is set to ON, the equipment will activate. In the ON position, the equipment will not turn off until the relay is moved to either the AUTO or OFF position. Lastly, when the relay is in the OFF position, the equipment will not activate at any time.

#### ***Motor Control Center (MCC)***

The motor control center, MCC, controls the functionality of electrical equipment. There are many electric motors throughout the car wash and each one plays a critical function. The motors are all powered by electricity and the MCC is where the flow of that electricity is controlled. Within the MCC cabinet there are a series of motor starters, variable frequency drives or a combination of both that correspond with the electrical equipment in the tunnel and equipment room. Let's review each one and how they work.

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### Motor Starters

A motor starter turns a motor ON or OFF in an instant. When engaged, the motor starter activates the motor, and immediately stops the motor when disengaged.

### Variable Frequency Drive (VFD)

A variable frequency drive, or VFD, is used to help regulate the flow of electricity to a motor. By regulating the flow of electricity, the speed of the equipment can be maintained. VFD's also help in the ramp up of a motor. Unlike a motor starter, with a VFD you can control the rate at which a motor reaches maximum power which helps to prolonging the life of the motor.

### **Solenoid**

Solenoids are used to control the flow of water or air. Controlled by a relay in the TC, solenoids activate to engage water and air flow. Solenoids are used for chemical pumps, low-pressure water applications and some air functions.

### **Water Manifold**

The water manifold is used to control the flow of all low-pressure water in the tunnel. For example, all the rinse applications that are dispensed via rain bar use low-pressure water. Another example would be the water used to help lubricate the brushes and mitts. The water manifold uses a ball valve and solenoid to control the flow of the water. The ball valve dictates how much water flows. By adjusting the ball valve, the amount of water flowing increases or decreases. The solenoid dictates when the water flows. When the relay on the TC activates, the solenoid receives the signal and allows the water to flow.

### **High-Pressure Pump Station**

The high-pressure pump station is used to generate the high-pressure water used in the car wash. High-pressure is used in the tunnel for the prep guns, wheel blasters, Omnis and the high-pressure rinse. The pump station is made up of multiple components that all work together to produce the high-pressure water in the tunnel. Let's review each component.

### Holding Tank

The holding tank houses the water that the pump sends to the tunnel. Within the holding tank is a float valve that controls the flow of water into the tank. When the water level drops below a certain level, the float valve engages and water is added to the tank until the minimum threshold is reached.

### Motor & Pump

The motor and pump work in tandem to generate and send the high-pressure water to the tunnel. The motor and pump both have a wheel mounted to them; these wheels are then connected to each other using belts. When the motor activates, its wheel turns which consequentially turns the wheel on the pump. The pump generates the pressure and sends the high-pressure water to the appropriate equipment in the tunnel. To control the amount of pressure, the pump has a regulator valve that can be adjusted to increase or decrease the amount of pressure generated.

### **Powerpack**

Anytime a piece of equipment is powered by a hydraulic motor in the tunnel, you will find a powerpack in the equipment room. The powerpack is made up of two main components, the

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hydraulic tank and the motor. The hydraulic tank contains the hydraulic fluid that is used to turn the motor in the tunnel. The fluid is pumped from the powerpack to the tunnel equipment and back to the powerpack in a continuous loop. The motor on the powerpack generates all the power used to move the fluid through the lines and move the equipment.

### **Chemical Pumps**

Throughout the equipment room, you will find chemical pumps used to move chemicals from the equipment room to the tunnel. There are several configurations of chemical pumps used in the car wash depending on equipment room setup and the type of product being dispensed by the pump. Regardless of configuration, there are two types of chemical pumps, water-driven and air-driven. Additionally, both types of pumps utilize metering types to control the amount of chemical that is mixed with water. There are various tip sizes and the tip used will be determined based on tunnel need.

Air-driven pumps function by drawing water and chemical into a small, self-contained holding tank, then pumping the solution out to the tunnel.

For water-driven pumps, a solenoid will open and activate the flow of water to the pump. As the water flows, the chemical draws from its container and mixes. For water-driven chemical pumps, there are two types that we utilize. Let's review each type and its components.

#### Chemical Mixing Station

A chemical mixing station is made up of four main components, a hydrominder, float, holding tank and flojet pump.

The holding tank contains the solution produced when water and chemical are mixed and added to the tank. The hydrominder is used to control when the flow of water and chemical into the holding tank occurs. Attached to the hydrominder is a float that determines when the hydrominder engages. As the level of the solution in the tank drops, so does the float. When the solution level reaches the minimum threshold, the float causes the hydrominder to engage. When engaged, water flows, which draws the chemical, to produce the solution in the holding tank. The solution is then sent to the tunnel using a Flojet pump which functions by drawing the chemical solution into the pump and then out of the pump to the tunnel.

#### Chemical Injection Pump

The chemical injection panel is another water-driven pump and utilizes an air solenoid, water solenoid and a centralized water source to create and dispense chemical solutions. With a chemical injection panel, chemical is drawn, mixed with water and sent to tunnel simultaneously. The chemical injection panel is also used to send air to the foam generators in the tunnel to assist with foaming products before application.

When dictated by the relay, the air solenoid will engage and send air through a line to a T-connector. One airline will go through the air regulator and out to the foam generator. Adjusting the regulator adjusts the amount of air going to the foam generator which then adjusts the foamingness of a product. If a product doesn't utilize a foam generator in the tunnel, the regulator will be capped. The other air line on the T-connector goes to the water solenoid. Once the air reaches the water solenoid, it engages and allows water to flow. As the water flows, it passes through an injector where the chemical is combined with the water after being drawn through the metering tip.

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### ***Booster Pump***

Similar to the high-pressure pump, booster pumps are used to increase the pressure of the water coming into it. However, the purpose of booster pumps is not to generate high-pressure water, rather their purpose is to regulate water pressure and ensure the pressure stays constant.

For our chemical dispensers, the water that runs through them needs to be maintained at a specific pressure in order to properly dispense and apply products to vehicles. Throughout each day, the pressure of the water coming into the building will fluctuate. The booster pump takes that water and boosts the pressure to the appropriate level and ensures the pressure remains constant. Depending on location, the booster pumps may be fed from an above-ground tank, below-ground tank or directly from the city water source.

### ***Tire Shine Panel***

The tire shine panel controls all the functions of the tire shiner. This panel controls the pressure of the arm on tires as well as the air pressure and timing for dispensing tire shine onto the brushes. From this panel, we can control how much product is applied to the brushes as well as and how long the product should be dispensed and at what frequency.

### ***Water Softener***

The water softener is used to ensure that the water used in the car wash is free of hard minerals. The more minerals in the water, the harder the water is. These minerals inhibit the ability of the water to properly mix with the car wash chemicals. The softer water allows the chemicals to work better, and decreases the amount of chemical needed to create the proper mixture.

### **Salt Tank**

The water softener uses salt to soften the water that comes into the building. To do so, there must be a sufficient and consistent amount of salt for the unit to utilize. So, water softeners are accompanied by a salt tank that is used to hold the salt. The salt tank must be refilled periodically to ensure appropriate amounts of salt are available to the water softener.

### ***Air Compressor***

The air compressor generates all the pressurized air used at the car wash. Pressurized air is used by air cylinders as well as the air guns in the customer lot. The air compressor is made up of a pump and a motor. Just like on a high-pressure pump station, the motor turns which engages the pump via belts connecting the two. Air from the atmosphere is pulled into the pump, then pressurized and sent to the holding tank for use when needed. The holding tank only holds so much air, so the compressor only runs when it needs to generate air to return the holding tank to the minimum threshold.

### **Auto-Drain**

The auto drain releases air at a predetermined interval draining excess pressure and moisture from the air compressor tank.

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### **Air Dryer**

As compressed air is generated by the compressor, the air is at a higher temperature than the inside of the holding tank. As the compressed air enters the tank, the temperature difference creates condensation which then builds up in the tank. This condensation then gets into the air lines and can cause equipment issues. To prevent these issues, the air dryer is used to remove the moisture in compressed air.

### **Air Manifold**

The air manifold is used to control the air cylinders in the tunnel. The air manifold is made up of a series of valves that each go to a specific piece of equipment. The air manifold is also where the air pressure for each piece is regulated.

### **Reclaim**

In some of our tunnels, we utilize a reclaim unit. The reclaim unit recaptures water used in the wash process, filters it and the water is then reused in the tunnel. Once the water leaves the tunnel, it goes through a series of settling tanks that remove all large debris and materials from the water. The water then goes through a final filtration in the reclaim unit before being used in the tunnel. Typically, reclaim water is used for high-pressure rinse and wheel blasters among others.

### **Boiler**

A boiler is used to heat liquid. In the car wash, a boiler can be used to heat the water for the car wash as well as antifreeze for the floor heat systems we have in our colder markets.

### **Central Vacuum Unit**

The central vacuum unit is used to power the vacuums in the customer lot, and are located either in the equipment room, customer lot or a combination of both. The central vacuum unit is made up of three main components, the motor, the turbine and the filter separator. Let's review each component and its function.

#### **Motor & Turbine**

The vacuum suction is generated by the combination of the motor and turbine. The motor and turbine are connected by a shaft, and as the motor turns it rotates the turbine. As the turbine rotates, the suction for the vacuums is generated.

#### **Filter Separator**

The filter separator is used to remove dirt and debris from the air flowing through the vacuums to the turbine. Within the top section of the filter separator, there are filter bags that are used to filter out dirt, debris and other items. In the bottom section of the filter separator, there is a collection bin that captures what is filtered out by the bags.

#### **Individual Separators**

At each vacuum stall, there is an individual separator. This separator is the first stage of the filtering process for the central vacuum unit. The individual separators collect the majority of the large and heavy objects that are vacuumed from customer cars.

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## **KNOWLEDGE DEVELOPMENT PROGRAM**

### **PRODUCT KNOWLEDGE**

#### **Why**

The purpose of the Product Knowledge Development Module is to become knowledgeable about the products delivered through the car wash, our wash packages and the great amenities we provide so that you can effectively communicate with customers to answer their questions about the car wash.

#### **What**

The following are the items you will need to become proficient in your knowledge of our products and services:

##### **List of Wash Products, Wash Packages and Amenities**

A list of all wash products, wash packages and amenities that we offer will allow you to review and study the information.

#### **Educate**

Like with any cleaning process, there are a few products that are used to achieve the desired cleaning outcome. Similarly, depending on the level of cleaning desired, you may choose from varying packages. As a car wash that's exactly what we are, a cleaning process offered at multiple levels of service. Cars come in dirty and they leave clean, dry and shiny.

Having a solid understanding of the products and services we offer is one of the most vital parts of working at WhiteWater. We not only want you to be familiar and knowledgeable about the products you are working with day-to-day, but we also want to enable you to explain those products to our customers. In addition to understanding our products, we must also know which products are used in each wash package. Each wash package includes different levels of cleaning performed in the tunnel, and it is important that we understand the differences between them. This ensures that we are able to answer customer questions about services and provide proper service recommendations.

It is important that we all answer questions regarding wash products, packages or amenities in a similar manner in order to avoid causing confusion. We want our customers to have a clear understanding of what each product and service provides, and that all starts with having consistent answers and explanations of our products and services.

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### ***Wash Products***

We offer a number of different products in our washes, and each one plays an important role in the cleaning process. A clear understanding of each product, and its benefits, in the wash process is necessary to accurately explain the products to customers. Let's review each of our products, benefits of each one and the best way to explain the product to customers.

#### ***Wash***

##### ***Bug Spray & Prep***

A high pH product designed specifically to aid in dissolving organic soils and heavy bug residue on bumpers and windshields.

##### ***Presoak 1***

A high pH detergent designed to remove organic road film such as bugs and oils from the vehicle surface.

##### ***Presoak 2***

A low pH foam detergent designed to clean inorganic soils and to remove any alkalinity from the surface so the any applied waxes can adhere properly.

##### ***Rinse & Dry***

A three-stage rinse process that removes the remaining detergents or soaps to prepare the vehicle for the drying process which consists of multiple high-power blowers.

#### ***Wheel Clean***

A high-strength, high pH designed to clean the organic soils on tires as well as the wheels.

#### ***Foamy Polish***

A high-foaming detergent designed to aid in further conditioning the high pH detergents into the surface to prepare the vehicle for any endline waxes and sealants.

#### ***Carnauba Wax***

A carnauba-based wax that leaves a polymer coating on the surface and leaves a hand wax shine and feel.

#### ***Ceramic Smooth***

A high foaming ceramic infused wax that provides a ceramic coating and results in a smooth, shiny, glass-like surface.

#### ***Rain Repellant***

A rinse additive that helps repel the rain and adds surface protection from all weather conditions.

#### ***Ceramic Shine***

A ceramic-infused total body protectant that seals in the glass-like finish from the Ceramic Smooth and provides long lasting protection.

#### ***SuperShine***

A fast-acting drying agent designed to create large beads of water to assist the dryers in efficient water removal.

#### ***Tire Shine***

A water-based product that leaves a high shine on tires with minimal sling.

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### ***Wash Packages***

We offer multiple wash packages that provide varying levels of service. While all of our packages produce a clean car, the higher-level packages offer increased cleaning, better paint protection and a longer lasting clean. Let's review each of our wash packages and the products they include.

#### **Rapid Wash**

The Rapid Wash is our base package wash and provides a light cleaning of the vehicle. The Rapid Wash includes:

- Wash
- Rinse & Dry

#### **WhiteWater Wash**

The WhiteWater Wash adds wheel cleaning, polishing, protective waxes and increased drying effectiveness. The WhiteWater Wash includes:

- Rapid Wash
- Foamy Polish
- SuperShine
- Wheel Clean

#### **Class V Wash**

The Class V Rapids Wash adds an additional layer of protection from weather and other natural elements. The Class V Rapids Wash includes:

- WhiteWater Wash
- Rain Repellant
- Tire Shine

#### **Carnauba Gold Wash**

The Carnauba Gold Wash increases both the protection and shine of the vehicle's paint. This increased protection provides longer lasting results and a shine that won't fade. The Carnauba Gold Wash Includes:

- Class V Rapids Wash
- Carnauba Wax
- 3 Day Rain Check

#### **Ceramic Gold Wash**

The Ceramic Gold Wash is our top package and offers the maximum amount of cleaning and protection along with a showroom shine. The Ceramic Gold Wash includes:

- Carnauba Gold Wash
- Ceramic Smooth
- Ceramic Shine

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### ***Amenities***

At each of our locations, we offer a number of amenities that customers can use at no charge. We provide these items as a courtesy in an effort to ensure that customers are able to get their cars clean inside and out. Let's review each of our amenities.

### ***Vacuums***

Our free vacuums are WhiteWater's most popular amenity. The vacuums provide a quick and convenient option for customers to get the inside of their vehicle just as clean as the outside.

### ***Towels***

We provide towels for customers to use to remove excess water from their vehicles after the wash as well as clean the interior.

### ***Air Guns***

Air guns can be used for a variety of additional cleaning tasks. From blowing excess water from behind mirrors and out of door seams to blowing debris from underneath a seat.

### ***Mat Cleaners***

We offer both dry and wet mat cleaners. The dry mat cleaners shake out dirt that can become trapped deep inside of floor mats. The wet mat cleaner adds water and a shampooing solution to the equation to get floor mats their cleanest.

### ***All-Purpose Cleaner***

All-purpose cleaner is provided through our state-of-the-art spray stations. All-purpose cleaner can be dispensed from the spray stations onto a towel and used to clean the interior of the vehicle. The all-purpose cleaner can also be safely used on the exterior vehicle if a customer desires.

### ***Glass Cleaner***

Glass cleaner is also provided through our state-of-the-art spray stations. Glass cleaner can be dispensed from the spray stations onto a towel and used to clean the windows inside and out.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### UNLIMITED SPEED CLUB KNOWLEDGE

#### Why

The purpose of gaining knowledge of the Unlimited Speed Club is to enable you to effectively inform customers about the value and benefits of the Unlimited Speed Club.

#### What

##### Knowledge of Wash Packages

A complete knowledge of the products used in each package and the pricing is key to answering customer questions about our unlimited plans.

##### Unlimited Speed Club Brochure

The Unlimited Speed Club brochure is a tool used to deliver information to customers about the unlimited plans

#### Educate

The unlimited wash plan allows customers to pay a low, monthly fee and receive unlimited car washes at any location, every single day. Our unlimited plans provide many benefits to members, and offer the ultimate in speed and convenience when visiting any of our washes nationwide.

#### ***Purpose of the Unlimited Speed Club***

Not only are the unlimited plans a great benefit to customers, they are also of great benefit to WhiteWater. Because the unlimited plan is automatically billed each month, the revenue generated from plans is recurring. Recurring revenue is revenue earned by the store regardless of weather and other factors that might cause car volume volatility. This leads to our store revenue being more predictable and stable which increases our ability to reliably predict revenue and cover operating costs. This means we can invest more into the store to improve the customer experience, including refurbishing or upgrading equipment, replacing worn signage, and hiring more employees. So, the more members a store has, the more recurring revenue will be generated.

Additionally, unlimited plans create recurring wash volume because members are more likely to wash their vehicles despite inclement weather or other factors that might deter drive up customers. Consistent volume increases predictability of our operations and ensures our we are always fully equipped and ready to wash.

Unlimited plans also increase customer loyalty because members are much less likely to wash at another car wash. Members are also more likely to recommend WhiteWater to others. This also leads to increased volume, and, more so, increased opportunities to add members and further increase the recurring volume and revenue. All team members can impact customer loyalty by selling plans, providing good customer service and ensuring a quality wash product is delivered for every vehicle.

#### ***Membership Bonus***

The membership bonus program rewards stores for both the growth and retention of Unlimited Speed Club members. Each month, the store will receive a monetary bonus based on the number of active members at the store when the year began. The base bonus remains the

# **EQUIPMENT, PRODUCT, USC & WASH BOOK**

## **KNOWLEDGE DEVELOPMENT PROGRAM**

same throughout the year, but by retaining members throughout the current year, we are able to increase our membership base bonus for the next year.

The base bonus begins at \$500 once the store reaches 500 members. From there, the bonus increases at 1,000 members to \$750. After 1,000 members, the base bonus increases at 1,000 member intervals. So, for every thousand members added and retained each year the base bonus amount will increase in the following year.

In addition to the base bonus, stores also receive \$1.50 for every incremental member added during the calendar month. To calculate incremental membership growth, subtract the total number of members at the end of the previous month from the total number of members at the end of the current month.

### ***Customer Interactions-Unlimited Speed Club***

One of the most important things we do when it comes to selling plans is interacting with customers to let them know about the Unlimited Speed Club. While our ultimate goal is to end each conversation with a new plan signup it is important to remember that informing customers is always the first step. By simply informing customers of the offer, you can open up a dialogue to further explain the Unlimited Speed Club, how it works and the benefits. It may take several interactions before someone decides to join. In fact, more often than not, a customer will not sign up when they first learn about our plans. Again, the important thing to remember is that the goal isn't to make an immediate sale, but simply to plant the seed and get the customer thinking about joining. On subsequent visits, you or another team member will talk to the customer about memberships again and continue to grow that seed. The consistent communication of the information is what leads customers to ultimately decide to purchase a membership, and, once they have signed up, your seed is sprouted.

We believe that if we provide the exceptional customer service WhiteWater is known for, customers that have been informed of the Unlimited Speed Club will eventually sign up. So, if you end each interaction with a fully informed customer, you have achieved a successful interaction.

### **Key Points-Unlimited Speed Club**

When talking to customers about the unlimited speed club, there are some key points that you will want to touch on during the conversation. Let's review each of the key points.

#### **Questions to Ask**

When you are interacting with the customer, asking questions is a great way to either start the conversation or to further educate the customer on the plans we offer. When you are asking questions, you want to ask open-ended questions. Open-ended questions require more than a simple yes or no answer, and lead to other avenues of conversation. It is best to avoid questions that can be answered with a simple yes or no answer as these questions can quickly stall a conversation and make it difficult to continue to educate the customer. The following are some examples of open-ended questions:

- What wash are you looking to get today?
- How often do you wash your car?
- What wash do you normally purchase?
- What plan would you like to sign up for today?

# **EQUIPMENT, PRODUCT, USC & WASH BOOK**

## **KNOWLEDGE DEVELOPMENT PROGRAM**

### *Pricing*

Depending on your market and location, membership pricing may vary. However, all plans are priced at two times the cost of a single wash, or less, regardless of market or location. Meaning, after just two washes a month, the plan pays for itself.

### *Benefits of Membership*

When a member visits a wash, they will be able to pull into the lane and quickly be granted access to the wash. Added to that, members are able to use their membership at any of our convenient locations nationwide. Lastly, customers are able to manage and cancel their plan through our website making it hassle-free for members to make any changes.

### *Unlimited Speed Club Brochure*

Our Unlimited Speed Club brochure is one of the most useful tools we have when talking to customers about plans. The brochure includes a description of each wash package and the associated single wash and unlimited plan pricing. The brochure also serves as a future reminder about the Unlimited Speed Club. By giving the customer the brochure to take with them, they are able to look at, and consider, the information further. When it comes to planting the seed, delivery of a brochure is of utmost importance.

### *Frequently Asked Questions*

- When will my card be charged?
  - Your card will be charged each month on the anniversary date of your purchase.
- How often can I wash?
  - You can wash your car as often as you would like.
- Can I use it on more than one vehicle?
  - Member vehicles are identified by a sticker we place in the windshield or by license plate recognition. For this reason, the membership can only be used on one vehicle.
- Is there a discount for multiple plans?
  - There is no discount for multiple plans. Each vehicle will need its own plan.
- What if I need to update my credit card or change my plan?
  - You can manage your plan online by visiting our website.
- How do I cancel?
  - Just visit our website five days before your recharge date and all future charges will be cancelled.
- What if I get a new car?
  - You can bring your new car to any location and we will update your account and place a new sticker in the windshield.
  - You can bring your car to any location and we will update the license plate associated with your membership.
- Can I use cash for the unlimited plan?
  - Unfortunately, you can't use cash. The unlimited plan is a recurring monthly charge, so it has to be paid with a credit card.

# EQUIPMENT, PRODUCT, USC & WASH BOOK KNOWLEDGE DEVELOPMENT PROGRAM

## WASH BOOK KNOWLEDGE

### Why

The purpose gaining knowledge of Wash Books is to enable you to effectively inform customers about the value and benefits of the Wash Books.

### What

Knowledge of Wash Packages

A complete knowledge of the products used in each package and the pricing is key to answering customer questions about our unlimited plans.

### Educate

The unlimited wash plan allows customers to pay a low, monthly fee and receive unlimited car washes at any location, every single day. Our unlimited plans provide many benefits to members, and offer the ultimate in speed and convenience when visiting any of our washes nationwide.

Wash books allow customers to purchase a book of prepaid washes at a discounted price. Wash books make the perfect gift and are a great alternative for customers that don't want to purchase a membership.

### ***Purpose of Wash Books***

Just like our unlimited plans, wash books sales lead to the opportunity to grow the business further. A wash book is a great alternative for customers not interested in a plan. In fact, wash books are often the first step towards a customer joining the unlimited club. Selling one wash book equates to five opportunities to deliver an experience so great the customer will have no choice but to purchase an unlimited plan. So, whether purchased for themselves or as a gift, we have created additional opportunities to make a great impression.

Additionally, wash books can be a great tool when overcoming objections to a plan sign up. These objections could range from a customer not wanting their credit card automatically charged each month to a new customer that doesn't wash that often, but still wants to take advantage of a discount. No matter the objections, wash books provide a great alternative to a plan.

### ***Customer Interactions-Wash Books***

Whether at the XPT or in the lot, there are opportunities to sell wash books to any and all customers that visit WhiteWater. Whether they are a new customer or a long-time member, opportunities exist to inform both single wash customers and members about wash books.

Single wash customers provide the greatest opportunity to sell wash books. There are three main reasons for this. One, these customers purchase a single wash each visit because they have not purchased an unlimited plan for one reason or another. Two, since the customer is purchasing a single wash each visit, the wash book would provide some money saving benefits because of the discounted rate. Three, we have two guaranteed opportunities to interact with non-member customers, at the XPT and in the lot.

## **EQUIPMENT, PRODUCT, USC & WASH BOOK KNOWLEDGE DEVELOPMENT PROGRAM**

Wash books can also be a great option for members looking for the perfect gift from someone they know. Wash books make a great gift and selling a wash book to a member for this purpose creates five opportunities to impact a new customer. Some members also have additional vehicles that they don't wash often enough for a membership to be beneficial, again, this is a great opportunity to inform them of the wash book option.

### *Key Points-Wash Books*

When talking to customers about wash books, there are some key points that you will want to touch on during the conversation. Let's review each of the key points.

#### *Pricing*

We offer wash books for the WhiteWater and Carnauba Gold washes. Depending on your market and location, wash book pricing may vary. Regardless of location, all wash books are buy four, get one free. This equates to a 20% savings with every wash book purchase.

#### *Benefits of Wash Books*

Not only are wash books offered at a discounted rate, wash books can also be purchased with a credit card or cash, never expire and can be used at any of our locations. On top of that, the Carnauba Gold wash book has the added benefit of a three-day rain check on all five washes.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### HANDOUTS

#### Equipment Knowledge-Tunnel Handout

##### ***Air Cylinders***

Air cylinders are one of the most commonly used pieces of equipment in the car wash tunnel with many pieces of equipment relying on them to function properly. Air cylinders function by using air to extend and retract the arm. As air enters the cylinder the arm extends, and as air is released the arm retracts. As we review each piece of tunnel equipment, we will point out the pieces that utilize air cylinders.

##### ***Shocks***

Similar to air cylinders, shocks are commonly used and found on multiple pieces of equipment in the tunnel. Depending on the piece of equipment, shocks are used to hold tension on a pivot arm or to help equipment move smoothly back to its home position. As we review each piece of tunnel equipment, we will point out the pieces that utilize shocks.

##### ***Bearings***

Rotation bearings attach to the equipment's shaft and rotate 360 degrees as the piece of equipment spins. On the other hand, pivotal bearings do not make full rotations and have varying degrees of movement. Rotational bearings are attached to a pivot arm and allow equipment to move toward, around and away from vehicles.

##### ***Applicators***

###### Foam Generator

Foam generators are tubes that contain coarse, sponge-like material that chemicals move through once the chemical is dispensed from the equipment room. As a product goes through a foam generator tube, the material makes the product become foamy and then dispenses a foamy product onto the vehicle. In addition, when product is dispensed from the equipment room, air is also moved into the foam generator which further aids in foaming the solution. Depending on the application of the product, foam generators can be paired with a multitude of applicators such as a max foamer, K-nozzle or banana foamer.

###### K-nozzle

K-nozzles dispense a light foamy product onto the vehicles in a V-pattern. Depending on the product being dispensed, the angle of the nozzle will vary.

###### Max Foamer

The max foamer is used to dispense products that are applied to the vehicle from the top of the arch they are mounted on.

###### Banana Foamer

Banana foamers feature a curved tube that dispenses product through a series of holes in one side of the tube.

###### Chemical Tire Applicator

A chemical tire applicator, or CTA, applies cleaning products to the wheels and tires.

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## KNOWLEDGE DEVELOPMENT PROGRAM

### ***Motors***

Throughout the tunnel there are many pieces of equipment that are powered by motors that function to rotate the equipment. These motors can be either hydraulic or electric, but they both serve the same purpose.

#### **Hydraulic**

Hydraulic motors are powered by hydraulic oil flowing in and out. The hydraulic fluid is sent from a powerpack in the equipment room to the motor in the tunnel and back again. This cycling of fluid causes the motor to move and the attached piece of equipment to spin.

#### **Electric**

Electric motors are powered by electricity and individually power the piece of equipment they are mounted to.

### ***Correlator***

The correlator is located at the entrance of the tunnel just before the conveyor, and functions to ensure that the rear wheels of the vehicle line up properly with the conveyor. Correlators are made up of multiple bars or rollers that rotate as they position the vehicle.

### ***Conveyor***

The conveyor is the workhorse of the car wash and it the most critical piece of equipment in the tunnel. The conveyor is responsible for moving vehicles through the tunnel and is capable of moving several full-sized vehicles at one time. When referring to the conveyor, there are multiple components that make up the piece of equipment and each piece is important to the overall functionality of the conveyor. Additionally, the conveyor can be powered by either a hydraulic or electric motor. Let's review each section and component of the conveyor:

#### **Chain & Rollers**

The chain is a series of interlocked links that travel the length of the conveyor in a loop, and the rollers are intertwined with the chain. The rollers sit behind the rear tire and move with the chain push vehicles through the tunnel. At our locations, we have various types of chains and rollers, but, regardless of type, they all serve the same purpose and function.

#### **Conveyor Decks**

The conveyor decks refer to the surfaces that the rollers move along as they go through the tunnel. The deck that rollers travel on when they are moving a vehicle is the top deck. When the rollers are moving from the entrance to the exit of the tunnel, but they aren't behind the tire moving the vehicle, they are on the middle deck. When rollers on either the top or middle deck reach the exit of the tunnel, they change direction and move along the bottom deck.

#### **Take-up Section**

The take-up section sits at the tunnel entrance right after the correlators. The take-up section consists of the take-up drum, roller up forks, shocks and an air cylinder.

#### **Take-up Drum**

The take-up drum is a free spinning wheel that allows rollers to move from the bottom deck to the middle deck, and back towards the tunnel exit.

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## KNOWLEDGE DEVELOPMENT PROGRAM

### *Roller-up Forks*

The roller-up forks sit just before the start of the conveyor decks and function to move rollers to the upper deck. When the back tire crosses the tire switch, a signal is sent to activate the air cylinder which then moves the forks into position. After the appropriate number of rollers have been moved to the top deck, the air cylinder disengages and the fork return to their home position. When not engaged, the forks will lay flat and allow rollers to freely move to the middle deck.

### Drive Section

The drive section is the last part of the conveyor and is located at the exit end. The drive section is made up of the sprocket, HECO drive and, depending on your location, the pulse switch.

### *HECO Drive*

The HECO drive is a gear reducer that allows the hydraulic, or electric, motor to attach to the sprocket.

### *Sprocket*

The sprocket is similar to a gear, and has a series of teeth that grip chain links and as the motor turns. The sprocket style and configuration will differ based on chain style, but the function remains the same. The sprocket holds onto the chain and moves it from the top or middle deck to the bottom deck, and back toward the tunnel entrance.

### *Pulse Switch*

The pulse switch is used to calculate the distance the conveyor has travelled. Attached to the sprocket, or located in the equipment room, the pulse switch measures the time that the photo eyes are broken as the vehicle enters the tunnel. From that data, the appropriate timing for device operation on that vehicle can be configured.

### *Tire Switch*

The tire switch is a pressure pad, or photo eyes, located on the passenger side of the tunnel just past the correlator. As the vehicle enters the tunnel the pressure pad counts two pressures, and after the second pressure, it activates the air cylinder that engages the roller up forks so the rollers can move to the top deck of the conveyor. Similarly, when the photo eyes detect a second break in the eyes, the air cylinder will activate the forks.

In addition to activating the roller-up forks, the tire switch measures the distance between wheels on the vehicle. This measurement then enables the CTAs to apply wheel cleaner at the proper times.

### *Photo Eyes*

The photo eyes are located just behind the entrance arch. They measure the length of the vehicle based on when the eyes are broken and when they come back together. Be sure not to cross between the eyes during operations as you could activate the car wash.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### ***Vehicle Profile Detector (VPD)***

The vehicle profile detector, or VPD, is located just after the grand entry arch, and is uses sonar to measure the height of vehicles to aid in detecting truck beds and activating open bed retracts when needed.

### ***Wraps***

The wraps utilize an all-friction cleaning process to clean the front, sides and back of the vehicle. Of all the tunnel equipment, the wraps have the most contact with the vehicle. Touching the entire grill, vehicle sides from top-to-bottom and the back of the vehicle. Wraps are powered by either a hydraulic or electric motor that is mounted to the brush shaft.

### ***Tire Brush & Tire Shiner***

The tire brush and tire shiner are vertical brushes that focus on the wheels and tires. Both brushes rotate on a shaft that is connected to either a hydraulic or electric motor.

The tire brush is located towards the middle of the tunnel and is used to provide friction cleaning the wheels and tires. The tire shiner is used to apply tire shine to the tires at the end of the wash.

### ***Rocker Brush***

The rocker brushes utilize an all-friction cleaning process and they focus on the rocker panels and the lower quarter of the vehicle. While not always the case, rocker brushes are commonly found affixed to the tire brushes.

### ***Side Washers***

The side washers utilize an all-friction cleaning process and they focus on the sides of the vehicle. Side washers have many size variations but they will always only focus on the sides of the vehicle. Side washers are powered by either a hydraulic or electric motor that is mounted to the brush shaft.

### ***Mitters***

The mitter is made up of free-hanging cloth and is used to clean the top surfaces of the vehicle including the hood and roof. Mitters move either front-to-back or side-to-side, but the movement direction does not alter their function, only the pattern in which the material moves across the vehicle.

When the mitter is engaged, the motor begins to move the gearbox which is connected to the drive arm. As the gearbox turns, the drive arm moves the basket. This creates the motion of the mitter as the vehicle passes through it.

### ***High-Pressure Rinse & Wheel Blasters***

The high-pressure rinse utilizes high-pressure water to remove end-line soaps and waxes to prepare the vehicle for the final rinse and drying processes. Similarly, the wheel blasters provide a high-pressure rinse of the wheels, tires and the lower portion of the vehicle.

### ***Underbody***

The underbody is used to rinse and remove road grime, salts and other corrosive materials from the underside of the vehicle.

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### ***Rain Bars***

Rain bars are utilized during our rinse process to provide a gentle rinse of the vehicle as well as to apply end line sealants and protectants. Rain bars come in various configurations including 1-hole, 2-hole and 3-hole. The configuration will depend on what they are being used to dispense and the volume required.

### ***Mirror Rinse***

Similar to a rain bar, the mirror rinse provides a gentle rinse of the vehicle. The mirror rinse focuses on side view mirrors and the sides and back of the vehicle.

### ***Blowers***

The blowers are located at the end of the tunnel after the rinse section and are used to dry the vehicle. Blowers are powered by individual motors that allow blowers to function independently of one another.

### **Blower Gates**

When blowers turn on and off, the initial ramp up takes an incredible amount of electricity and can put unnecessary stress on the blower motors. To help reduce the electricity needed and stress on the motors, the blower gates allow the motors to start unloaded. In other words, air isn't flowing through the blowers as they start which leads to less strain on the motor. Once the vehicle reaches the appropriate point in the tunnel, the blower gate will open and allow the full flow of air through the blower.

### **Mufflers**

Mufflers are used to dampen the sound produced by the blowers. The blowers generate over 90 decibels of sound when activated, and at some locations, especially those located near residential areas, it is necessary to reduce the sound emitted by the blowers.

### ***Anti-Collision***

The anti-collision is located at the end of the tunnel, and detects when a vehicle is stopped at the exit. The anti-collision may be in the form of a one- or two-stage floor mounted sensor pads or photo eyes mounted at the exit of the tunnel.

If a vehicle has activated the anti-collision, and the vehicle behind it gets within the distance threshold, the conveyor will stop until the vehicle moves from the tunnel exit. Once the anti-collision is clear of the vehicle, the tunnel will restart.

### ***Wait/Go Light***

The Wait/Go light is located after the exit of the tunnel and is used to indicate to customers when it is time to shift their vehicle back into drive and exit the tunnel.

### ***Trench***

The trench is the area that houses the conveyor as well as the open space underneath the grates in the tunnel. All the dirt, grime, water and everything else in the tunnel drains down into the trench.

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## KNOWLEDGE DEVELOPMENT PROGRAM

### Equipment Knowledge-Equipment Room Handout

#### ***Tunnel Controller (TC)***

The tunnel controller, or TC, is used to control the timing of equipment function. Within the TC there are multiple relay cards that each have individual relays. Each relay is programmed with specific timing parameters that dictate when equipment turns on or off based on the location of the vehicle in the tunnel. Relays can be in one of three positions; ON, OFF or AUTO. Under normal operations, relays are set to AUTO, which means the equipment functions based on the timing specifications. When the relay is set to ON, the equipment will activate. In the ON position, the equipment will not turn off until the relay is moved to either the AUTO or OFF position. Lastly, when the relay is in the OFF position, the equipment will not activate at any time.

#### ***Motor Control Center (MCC)***

The motor control center, MCC, controls the functionality of electrical equipment. There are many electric motors throughout the car wash and each one plays a critical function. The motors are all powered by electricity and the MCC is where the flow of that electricity is controlled. Within the MCC cabinet there are a series of motor starters, variable frequency drives or a combination of both that correspond with the electrical equipment in the tunnel and equipment room. Let's review each one and how they work.

#### **Motor Starters**

A motor starter turns a motor ON or OFF in an instant. When engaged, the motor starter activates the motor, and immediately stops the motor when disengaged.

#### **Variable Frequency Drive (VFD)**

A variable frequency drive, or VFD, is used to help regulate the flow of electricity to a motor. By regulating the flow of electricity, the speed of the equipment can be maintained. VFD's also help in the ramp up of a motor. Unlike a motor starter, with a VFD you can control the rate at which a motor reaches maximum power which helps to prolonging the life of the motor.

#### ***Solenoid***

Solenoids are used to control the flow of water or air. Controlled by a relay in the TC, solenoids activate to engage water and air flow. Solenoids are used for chemical pumps, low-pressure water applications and some air functions.

#### ***Water Manifold***

The water manifold is used to control the flow of all low-pressure water in the tunnel. For example, all of the rinse applications that are dispensed via rain bar use low-pressure water. Another example would be the water used to help lubricate the brushes and mitts. The water manifold uses a ball valve and solenoid to control the flow of the water. The ball valve dictates how much water flows. By adjusting the ball valve, the amount of water flowing increases or decreases. The solenoid dictates when the water flows. When the relay on the TC activates, the solenoid receives the signal and allows the water to flow.

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### ***High-Pressure Pump Station***

The high-pressure pump station is used to generate the high-pressure water used in the car wash. High-pressure is used in the tunnel for the prep guns, wheel blasters, Omnis and the high-pressure rinse. The pump station is made up of multiple components that all work together to produce the high-pressure water in the tunnel. Let's review each component.

#### **Holding Tank**

The holding tank houses the water that the pump sends to the tunnel. Within the holding tank is a float valve that controls the flow of water into the tank. When the water level drops below a certain level, the float valve engages and water is added to the tank until the minimum threshold is reached.

#### **Motor & Pump**

The motor and pump work in tandem to generate and send the high-pressure water to the tunnel. The motor and pump both have a wheel mounted to them; these wheels are then connected to each other using belts. When the motor activates, its wheel turns which consequentially turns the wheel on the pump. The pump generates the pressure and then sends the high-pressure water to the appropriate equipment in the tunnel. To control the amount of pressure, the pump has a regulator valve that can be adjusted to increase or decrease the amount of pressure generated.

#### **Powerpack**

Anytime a piece of equipment is powered by a hydraulic motor in the tunnel, you will find a powerpack in the equipment room. The powerpack is made up of two main components, the hydraulic tank and the motor. The hydraulic tank contains the hydraulic fluid that is used to turn the motor in the tunnel. The fluid is pumped from the powerpack to the tunnel equipment and back to the powerpack in a continuous loop. The motor on the powerpack generates all of the power used to move the fluid through the lines and move the equipment.

#### **Chemical Pumps**

Throughout the equipment room, you will find chemical pumps used to move chemicals from the equipment room to the tunnel. There are several configurations of chemical pumps used in the car wash depending on equipment room setup and the type of product being dispensed by the pump. Regardless of configuration, there are two types of chemical pumps, water-driven and air-driven. Additionally, both types of pumps utilize metering types to control the amount of chemical that is mixed with water. There are various tip sizes and the tip used will be determined based on tunnel need.

Air-driven pumps function by drawing water and chemical into a small, self-contained holding tank, then pumping the solution out to the tunnel.

For water-driven pumps, a solenoid will open and activate the flow of water to the pump. As the water flows, the chemical draws from its container and mixes. For water-driven chemical pumps, there are two types that we utilize. Let's review each type and its components.

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## KNOWLEDGE DEVELOPMENT PROGRAM

### Chemical Mixing Station

A chemical mixing station is made up of four main components, a hydrominder, float, holding tank and flojet pump.

The holding tank contains the solution produced when water and chemical are mixed and added to the tank. The hydrominder is used to control when the flow of water and chemical into the holding tank occurs. Attached to the hydrominder is a float that determines when the hydrominder engages. As the level of the solution in the tank drops, so does the float. When the solution level reaches the minimum threshold, the float causes the hydrominder to engage. When engaged, water flows, which draws the chemical, to produce the solution in the holding tank. The solution is then sent to the tunnel using a Flojet pump which functions by drawing the chemical solution into the pump and then out of the pump to the tunnel.

### Chemical Injection Pump

The chemical injection panel is another water-driven pump and utilizes an air solenoid, water solenoid and a centralized water source to create and dispense chemical solutions. With a chemical injection panel, chemical is drawn, mixed with water and sent to tunnel simultaneously. The chemical injection panel is also used to send air to the foam generators in the tunnel to assist with foaming products before application.

When dictated by the relay, the air solenoid will engage and send air through a line to a T-connector. One airline will go through the air regulator and out to the foam generator. Adjusting the regulator adjusts the amount of air going to the foam generator which then adjusts the foaminess of a product. If a product doesn't utilize a foam generator in the tunnel, the regulator will be capped. The other air line on the T-connector goes to the water solenoid. Once the air reaches the water solenoid, it engages and allows water to flow. As the water flows, it passes through an injector where the chemical is combined with the water after being drawn through the metering tip.

### **Booster Pump**

Similar to the high-pressure pump, booster pumps are used to increase the pressure of the water coming into it. However, the purpose of booster pumps is not to generate high-pressure water, rather their purpose is to regulate water pressure and ensure the pressure stays constant.

For our chemical dispensers, the water that runs through them needs to be maintained at a specific pressure in order to properly dispense and apply products to vehicles. Throughout each day, the pressure of the water coming into the building will fluctuate. The booster pump takes that water and boosts the pressure to the appropriate level and ensures the pressure remains constant. Depending on location, the booster pumps may be fed from an above-ground tank, below-ground tank or directly from the city water source.

### **Tire Shine Panel**

The tire shine panel controls all of the functions of the tire shiner. This panel controls the pressure of the arm on tires as well as the air pressure and timing for dispensing tire shine onto the brushes. From this panel, we are able to control how much product is applied to the brushes as well as and how long the product should be dispensed and at what frequency.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### **Water Softener**

The water softener is used to ensure that the water used in the car wash is free of hard minerals. The more minerals in the water, the harder the water is considered to be. These minerals inhibit the ability of the water to properly mix with the car wash chemicals. The softer water allows the chemicals to work better, and decreases the amount of chemical needed to create the proper mixture.

### **Salt Tank**

The water softener uses salt to soften the water that comes into the building. To do so, there must be a sufficient and consistent amount of salt for the unit to utilize. So, water softeners are accompanied by a salt tank that is used to hold the salt. The salt tank must be refilled periodically to ensure appropriate amounts of salt are available to the water softener.

### **Air Compressor**

The air compressor generates all of the pressurized air used at the car wash. Pressurized air is used by air cylinders as well as the air guns in the customer lot. The air compressor is made up of a pump and a motor. Just like on a high-pressure pump station, the motor turns which engages the pump via belts connecting the two. Air from the atmosphere is pulled into the pump, then pressurized and sent to the holding tank for use when needed. The holding tank only holds so much air, so the compressor only runs when it needs to generate air to return the holding tank to the minimum threshold.

### **Auto-Drain**

The auto drain releases air at a predetermined interval draining excess pressure and moisture from the air compressor tank.

### **Air Dryer**

As compressed air is generated by the compressor, the air is at a higher temperature than the inside of the holding tank. As the compressed air enters the tank, the temperature difference creates condensation which then builds up in the tank. This condensation then gets into the air lines and can cause equipment issues. To prevent these issues, the air dryer is used to remove the moisture in compressed air.

### **Air Manifold**

The air manifold is used to control the air cylinders in the tunnel. The air manifold is made up of a series of valves that each go to a specific piece of equipment. The air manifold is also where the air pressure for each piece is regulated.

### **Reclaim**

In some of our tunnels, we utilize a reclaim unit. The reclaim unit recaptures water used in the wash process, filters it and the water is then reused in the tunnel. Once the water leaves the tunnel, it goes through a series of settling tanks that remove all of large debris and materials from the water. The water then goes through a final filtration in the reclaim unit before being used in the tunnel. Typically, reclaim water is used for high-pressure rinse and wheel blasters among others.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### **Boiler**

A boiler is used to heat liquid. In the car wash, a boiler can be used to heat the water for the car wash as well as antifreeze for the floor heat systems we have in our colder markets.

### **Central Vacuum Unit**

The central vacuum unit is used to power the vacuums in the customer lot, and are located either in the equipment room, customer lot or a combination of both. The central vacuum unit is made up of three main components, the motor, the turbine and the filter separator. Let's review each component and its function.

#### **Motor & Turbine**

The vacuum suction is generated by the combination of the motor and turbine. The motor and turbine are connected by a shaft, and as the motor turns it rotates the turbine. As the turbine rotates, the suction for the vacuums is generated.

#### **Filter Separator**

The filter separator is used to remove dirt and debris from the air flowing through the vacuums to the turbine. Within the top section of the filter separator, there are filter bags that are used to filter out dirt, debris and other items. In the bottom section of the filter separator, there is a collection bin that captures what is filtered out by the bags.

#### **Individual Separators**

At each vacuum stall, there is an individual separator. This separator is the first stage of the filtering process for the central vacuum unit. The individual separators collect the majority of the large and heavy objects that are vacuumed from customer cars.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### Product Knowledge Handout

#### ***Wash Products***

We offer a number of different products in our washes, and each one plays an important role in the cleaning process. A clear understanding of each product, and its benefits, in the wash process is necessary to accurately explain the products to customers. Let's review each of our products, benefits of each one and the best way to explain the product to customers.

#### **Wash**

##### ***Bug Spray & Prep***

A high pH product designed specifically to aid in dissolving organic soils and heavy bug residue on bumpers and windshields.

##### ***Presoak 1***

A high pH detergent designed to remove organic road film such as bugs and oils from the vehicle surface.

##### ***Presoak 2***

A low pH foam detergent designed to clean inorganic soils and to remove any alkalinity from the surface so the any applied waxes can adhere properly.

##### ***Rinse & Dry***

A three-stage rinse process that removes the remaining detergents or soaps to prepare the vehicle for the drying process which consists of multiple high-power blowers.

#### **Wheel Clean**

A high-strength, high pH designed to clean the organic soils on tires as well as the wheels.

#### **Foamy Polish**

A high-foaming detergent designed to aid in further conditioning the high pH detergents into the surface to prepare the vehicle for any endline waxes and sealants.

#### **Carnauba Wax**

A carnauba-based wax that leaves a polymer coating on the surface and leaves a hand wax shine and feel.

#### **Ceramic Smooth**

A high foaming ceramic infused wax that provides a ceramic coating and results in a smooth, shiny, glass-like surface.

#### **Rain Repellant**

A rinse additive that helps repel the rain and adds surface protection from all weather conditions.

#### **Ceramic Shine**

A ceramic-infused total body protectant that seals in the glass-like finish from the Ceramic Smooth and provides long lasting protection.

#### **SuperShine**

A fast-acting drying agent designed to create large beads of water to assist the dryers in efficient water removal.

#### **Tire Shine**

A water-based product that leaves a high shine on tires with minimal sling.

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### ***Wash Packages***

We offer multiple wash packages that provide varying levels of service. While all of our packages produce a clean car, the higher-level packages offer increased cleaning, better paint protection and a longer lasting clean. Let's review each of our wash packages and the products they include.

#### **Rapid Wash**

The Rapid Wash is our base package wash and provides a light cleaning of the vehicle. The Rapid Wash includes:

- Wash
- Rinse & Dry

#### **WhiteWater Wash**

The WhiteWater Wash adds wheel cleaning, polishing, protective waxes and increased drying effectiveness. The WhiteWater Wash includes:

- Rapid Wash
- Foamy Polish
- SuperShine
- Wheel Clean

#### **Class V Wash**

The Class V Rapids Wash adds an additional layer of protection from weather and other natural elements. The Class V Rapids Wash includes:

- WhiteWater Wash
- Rain Repellant
- Tire Shine

#### **Carnauba Gold Wash**

The Carnauba Gold Wash increases both the protection and shine of the vehicle's paint. This increased protection provides longer lasting results and a shine that won't fade. The Carnauba Gold Wash Includes:

- Class V Rapids Wash
- Carnauba Wax
- 3 Day Rain Check

#### **Ceramic Gold Wash**

The Ceramic Gold Wash is our top package and offers the maximum amount of cleaning and protection along with a showroom shine. The Ceramic Gold Wash includes:

- Carnauba Gold Wash
- Ceramic Smooth
- Ceramic Shine

# EQUIPMENT, PRODUCT, USC & WASH BOOK

## KNOWLEDGE DEVELOPMENT PROGRAM

### ***Amenities***

At each of our locations, we offer a number of amenities that customers can use at no charge. We provide these items as a courtesy in an effort to ensure that customers are able to get their cars clean inside and out. Let's review each of our amenities.

### **Vacuums**

Our free vacuums are WhiteWater's most popular amenity. The vacuums provide a quick and convenient option for customers to get the inside of their vehicle just as clean as the outside.

### **Towels**

We provide towels for customers to use to remove excess water from their vehicles after the wash as well as clean the interior.

### **Air Guns**

Air guns can be used for a variety of additional cleaning tasks. From blowing excess water from behind mirrors and out of door seams to blowing debris from underneath a seat.

### **Mat Cleaners**

We offer both dry and wet mat cleaners. The dry mat cleaners shake out dirt that can become trapped deep inside of floor mats. The wet mat cleaner adds water and a shampooing solution to the equation to get floor mats their cleanest.

### **All-Purpose Cleaner**

All-purpose cleaner is provided through our state-of-the-art spray stations. All-purpose cleaner can be dispensed from the spray stations onto a towel and used to clean the interior of the vehicle. The all-purpose cleaner can also be safely used on the exterior vehicle if a customer desires.

### **Glass Cleaner**

Glass cleaner is also provided through our state-of-the-art spray stations. Glass cleaner can be dispensed from the spray stations onto a towel and used to clean the windows inside and out.