Light Touch & High-Pressure Wash Equipment Overview

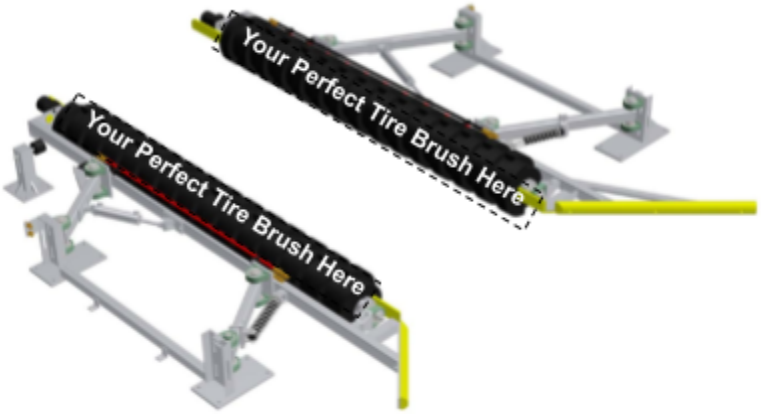
Session Length – 150 Minutes

Objectives

To review the Light Touch and High-Pressure wash equipment that is used at a typical tunnel car wash.

Content

1. **Light Touch Friction Wash**
   a) **Rotating Tire Brush**



1) Description

a) Used in conjunction with the **CTA (tire applicator system)** produces a tire free of road grime, cleans black walls, and brightens white walls and white lettering.

b) These brushes are mounted in a frame parallel to the floor that allows a 96” brush to scrub any size tire.

c) These brushes come with a retract cylinder to keep brushes in home position until activated.

1) Adjustments

a) Washing Pressure

b) Air cylinders allow for proper cleaning pressure, and slotted bearing mounts allow for proper height adjustment.

(1) Should apply enough pressure to remain in contact with the wheel and tire and not bounce.

c) Rotation Speed

(1) The rotation speed of the brush can be adjusted at the flow control valve on the hydraulic power pack for the tire brush or the VFD if electric drive.

(2) RPM should be adjusted depending on wash material and will rotate down and into the tire on both sides of the vehicle. This prevents dirt and sand from spraying onto the vehicle.

d) Retract Stop Position

(1) The stop position of the driver's side tire brush must be set so that the tire brush stops ¼" before the guide rail of the conveyor so as not to create a pinch point.

(2) The large floor mounted bumper stop will be used to accomplish this adjustment.

e) Torque Plate

(1) Normally requires adjustment only when maintenance is performed on the tire brush.

2) Preventive Maintenance Requirements

a) DAILY

(1) Check all lines and fittings for leaks. Repair, or replace, as needed.

(2) Check the brushes for grease, oil, or foreign objects and clean if necessary.

(3) Check both tire brushes for proper operation, listen for any unusual noises and check for vibrating, bouncing and trueness.

(4) Manually check the retract operation to ensure proper travel and smoothness of operation.

b) WEEKLY

(1) Grease the rotational bearings on the tire brush shaft.

(2) Clean the tire brush thoroughly.

FOR THE FIRST MONTH OF OPERATION CHECK ALL HYDRAULIC FITTINGS FOR TIGHTNESS EACH WEEK. PERFORM THIS INSPECTION TO THE SCHEDULE SHOWN BELOW AFTER THE FIRST MONTH OF OPERATION.

c) MONTHLY

(1) Grease all pivotal bearings on the hanger framework.

(2) Inspect all hardware and fittings for tightness.

(3) Inspect each tire brush for wear.

d) ANNUALLY (only applies if electrically driven)

(1) Have a licensed electrician measure and record, full load current readings from each of the three legs of each of the three phase electric motors.

(a) If the differential of current load exceeds 10% between the legs, or the balanced load current of all three legs has increased over 10% since the most recent measurements, order a replacement motor.

(b) Record readings in the annual log.

(c) Grease all electric motors per manufacturers specifications.

b) Hush Brush (TOP series)

With Exit DoubleJog Wraps, Tire Brush and SFTBG 18in Rocker Brush

1) Description

a) Thoroughly cleans the top of the vehicles, especially the hood grooves, windshield eyebrow, and around roof racks.

b) The light touch is achieved by the custom-designed counterweight assembly. This allows consistent wash media penetration over the entire vehicle.

c) Uses Hush NeoGlide cleaning material and has a 72” brush mounted to an aluminum brush core that does not absorb water.

d) Solid four leg frame construction, three shaft support bearings, externally mounted bearing and hydraulic or electric motors for easy maintenance, and two Ultra High Molecular Weight (UHMW) pivot bearings (these bearing require lubrication) for long life and low maintenance.

e) The light touch top brush operates strictly on a **counterweight** and has air cylinders for retracting only.

f) The brush spins opposite the direction of travel of the vehicle to increase cleaning force and penetration.

g) May utilize either electric or hydraulic drive motors.

2) Adjustments

a) Cleaning Pressure Adjustment

(1) The cleaning pressure applied against the vehicle is adjusted by moving the counterweight on the arm on the Top Brush.

(2) Should be adjusted to obtain 3” to 4” brush penetration during normal operation.

(3) Final adjustments should be made after observing the pressure applied during several car washes.

b) Rotation Speed Adjustment

(1) If a hydraulic motor is used, the rotation speed of the brush can be adjusted at the flow control on the hydraulic power pack.

(2) If an electric motor is used, a Variable Frequency Drive (VFD) would be needed to adjust the speed.

(3) A hydraulic motor should be plumbed properly to rotate down and against the travel of the vehicle.

(4) Speed should be set to

(a) 75-85 Revolutions per Minute (RPM) for a conveyor speed of 60-99 Cars per Hour (CPH).

(b) 86-95 RPM for a conveyor speed of 100-150 CPH.

c) Retract Adjustment

(1) The brush is held retracted by approximately 30-40PSI until a vehicle is about five feet away.

(2) When the air pressure is released the counterweight is all that is needed to bring the brush into cleaning position.

3) Preventive Maintenance Requirements

a) DAILY

(1) Opening Checks

(a) Check for leaks around gear reducer (only applies if electrically driven).

(b) Check for leaks around hoses and fittings. Repair any hydraulic leaks immediately (only applies if hydraulically driven).

(c) Observe the brush while spinning. It should run straight and smooth.

(2) Operational Checks

(a) Check for leaks around hoses and fittings. Repair any serious water or air leaks immediately.

(b) General examination of operation, listening for any unusual noises.

(c) Observe retract operation. It should be smooth and retract completely.

(3) Closing Checks

(a) Check condition of cloth. If dirty, clean with prep gun.

(b) Open condensation drain valve and drain all liquid.

b) WEEKLY

(1) Grease all rotational shaft bearings with 1-2 pumps per bearing.

(2) Check all nozzles for wear and replace if necessary.

(3) Perform a close inspection of operating mechanisms and hoses for problems.

(4) Spray lubricant on the air cylinder rod end and clevis.

(5) Check lubricant level in gear reducer and refill if necessary (only applies if electrically driven).

(6) Check position of bumper stop to ensure top brush does not overextend its reach.

c) MONTHLY

(1) Inspect all hardware and fittings for tightness and clean the entire assembly thoroughly.

(2) Grease the bearings on the pivotal plate on the counterweight with 1-2 pumps per bearing.

(3) Inspect all UHMW bearings for wear. Replace if necessary.

d) SEMI-ANNUALLY

(1) Check cloth for wear or damage and replace as needed.

e) ANNUALLY (only applies if electrically driven)

(1) Have a licensed electrician measure and record, full load current readings from each of the three legs of each of the three phase electric motors.

(2) If the differential of current load exceeds 10% between the legs, or the balanced load current of all three legs has increased over 10% since the most recent measurements, order a replacement motor.

(3) Record readings in the annual log.

(a) Grease all electric motors per manufacturers specifications.