TOMMY'S EXPRESS CAR WASH

Detergents Handbook

2025

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Detergent product overview

This section is an overview of the primary cleaning detergents that are used in a Tommy's Express tunnel to provide a clean, dry, and shiny finished product. Detergents work in conjunction with the rest of the tunnel equipment, rinses, and applicators to provide the best possible quality.

Detergent product overview

TOMMY'S EXPRESS #1 (PRESOAK)	TOMMY'S EXPRESS #2 (LEMON SCENT)
TOMMY'S EXPRESS #3 (BRITE)	TOMMY'S EXPRESS #4 (VACATION SCENT)
TOMMY'S EXPRESS #5 (CERAMIC BODY WAX)	TOMMY'S EXPRESS #6 (GUARD)
TOMMY'S EXPRESS #7 (DRYING AGENT)	TOMMY'S EXPRESS #8 (TIRE GLOSS)
TOMMY'S EXPRESS #9 (CLOTH & WINDOW CLEANER)	TOMMY'S EXPRESS #10 (EWF CLEANER, EQUIPMENT, WALLS, FLOORS)
TOMMY LINE CLEANER	

Tommy’s Express #1 (Presoak)

C-1-30-A

Tommy’s Express #1 is a concentrated, versatile, caustic, and alkaline (high pH) detergent that breaks down and loosens organic material such as insects, bird droppings etc. This detergent is applied out of our first Tommy’s arch as a full body Presoak and is also used as a wheel and tire cleaner. The product produces a moderate-high foam with fantastic coverage that is easily broken down, can penetrate cracks and crevices of vehicles, contains no phosphates, and is readily biodegradable. This detergent is dispensed at the first arch in the tunnel through these functions:

- Bug Spray
- Front Presoak
- Front Bumper Blaster
- Presoak
- Rear Presoak
- Rear Bumper Blaster
- CTA (Chemical Tire Applicator) 1
- CTA 2

Tommy’s Express #2 (Lemon Scent)

30 Gallons : C-2-30-LS | EasyChem: C-2-EZ-LS

Tommy’s Express #2 is a premium product that is meant to improve the guest experience by providing a pleasant, lemon scented, long lasting aroma directly into guests’ vehicles. This detergent is dual injected through the front Presoak application with Tommy’s Express Presoak #1, targeting the cowl/wiper area of the vehicle where the climate control intake is located.

Tommy’s Express #3 (Brite)

Formula A: C-3-30-A | Formula B: C-3-30-B

Tommy’s Express #3 is a high foaming, concentrated, acidic, (low pH) cleaning lubricant that saturates the tommy cloth and provides the sheeting effect seen in the red-hot cleanser arch. Tommy’s Express Brite creates a lather-friendly, deep cleaning foam to cut through dirt, salt, and road grime. Being a low pH detergent, Tommy’s Express Brite #3 is designed to neutralize the high pH Presoak, allowing the vehicle to rinse clean and dry quickly. There is an A and B formulation currently available for this product, giving our guests’ the opportunity to choose which version they prefer. This detergent is dispensed at the following applications:

- Rainbow Coat®
- Combo 1 Leg 1
- Combo 1 Leg 2
- Red Hot Cleanser
- Combo 2 Leg 1
- Combo 2 Leg 2

Tommy's Express #4 (Vacation Scent)

30 Gallons: C-4-30-A | EasyChem: C-4-EZ-A

Tommy's Express #4 is another premium scented product that produces a long lasting, tropical, coconut like, suntan lotion aroma directly into air intakes of guests' vehicles. This scent lingers in the vehicle, allowing guests to relive their wash experience, creating a lasting, positive impression. This detergent is dual injected through the drying agent application towards the end of the tunnel.

Tommy's Express #5 (Ceramic Body Wax®)

C-5-EZ-A

Tommy's Express #5 is a deluxe, silicone infused, concentrated product blended uniquely with carnauba wax and ceramic technology producing a foamy, rain-sheet effect when applied. This detergent penetrates the bodies of vehicles and produces a post-wash, sparkly, high-gloss, showroom shine helping fill in microscopic irregularities on vehicle paint for improved rainwater repellency. This detergent is dispensed through the Ceramic Body Wax® rain bar after the second set of combo legs.

Tommy's Express #6 (Guard)

Formula A: C-6-EZ-A | Formula B: C-6-EZ-B

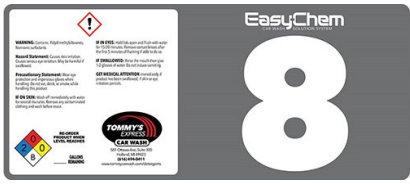
Tommy's Express #6 is a premium, concentrated, silicone infused product that produces a white, milky, foamy show when applied to vehicles. It bonds to surfaces, creating a protective barrier over vehicles while providing a fantastic water beading and repellency effect that deflects water and road grime. Previously treated guests' vehicles will clean more effectively as inorganic and organic materials will not stick to the surface and foam will rinse more effectively, causing vehicles to dry more effectively. This product enhances the vehicle body's gloss and shine and creates a smooth surface. There is an A and B formulation currently available for this product, giving our guests the opportunity to choose which version they prefer. This detergent is dispensed through k-nozzles at the Tommy Guard® arch.

Tommy's Express #7 (Drying Agent)

30 gallons: C-7-30-A | EasyChem: C-7-EZ-A

Tommy's Express #7 is a concentrated product that acts as a "defoamer," breaking down and removing soap and foam from vehicles' surfaces before the final rinse. The built-in hydrophobic technology allows for water to easily break and bead up, blowing right off the vehicle in the blower room, eliminating flat water issues. This detergent is dispensed through the Drying Agent hanging manifold directly before the Spot Free Rinse arch.

Tommy's Express #8 (Tire Gloss)



Formula A: C-8-30-A | Formula B: C-8-30-B

Tommy's Express #8 is an impressive water-based tire dressing that bonds more effectively to rubber, reducing sling. This product is lower in viscosity compared to other Tire Gloss products, reducing clogging in nozzles and manifolds. When applied, this product polishes and restores the circumference of vehicles' tires, providing a glossy and wet finish making rubber appear new. There is an A and B formulation currently available for this product, giving our guests the opportunity to choose which version they prefer. This detergent is applied through the Tire Gloss manifold in the blower room, sprayed directly onto the rotating brush.

Tommy's Express #9 (Cloth & Window Cleaner)

C-T-WINDOWS-30-A

Tommy's Express #9 is a tunnel maintenance cleaning product used to remove soap scum, mineral build up, grime, etc. off the Tommy dry huggers, interior windows and glass of the car wash bay. This product is an ammonia-free solution that easily rinses off and dries streak free. This detergent is applied through the maintenance pod's bay wand and through nozzles pointed at the dry huggers in the blower room.

Tommy's Express #10 (EWF Cleaner, Equipment, Walls, Floors)

C-T-Walls-EZ-B

Tommy's Express #10 is a tunnel maintenance cleaning product that removes inorganic materials such as rust, soap scum, hard water minerals, heavy soils, etc. while refurbishing your floors, walls, and Stainless-Steel equipment. This product is a safe alternative compared to other corrosive cleaners as it does not contain harmful ingredients such as muriatic or hydrofluoric acids. This product should be thoroughly rinsed with water after each application.

Tommy Line Cleaner

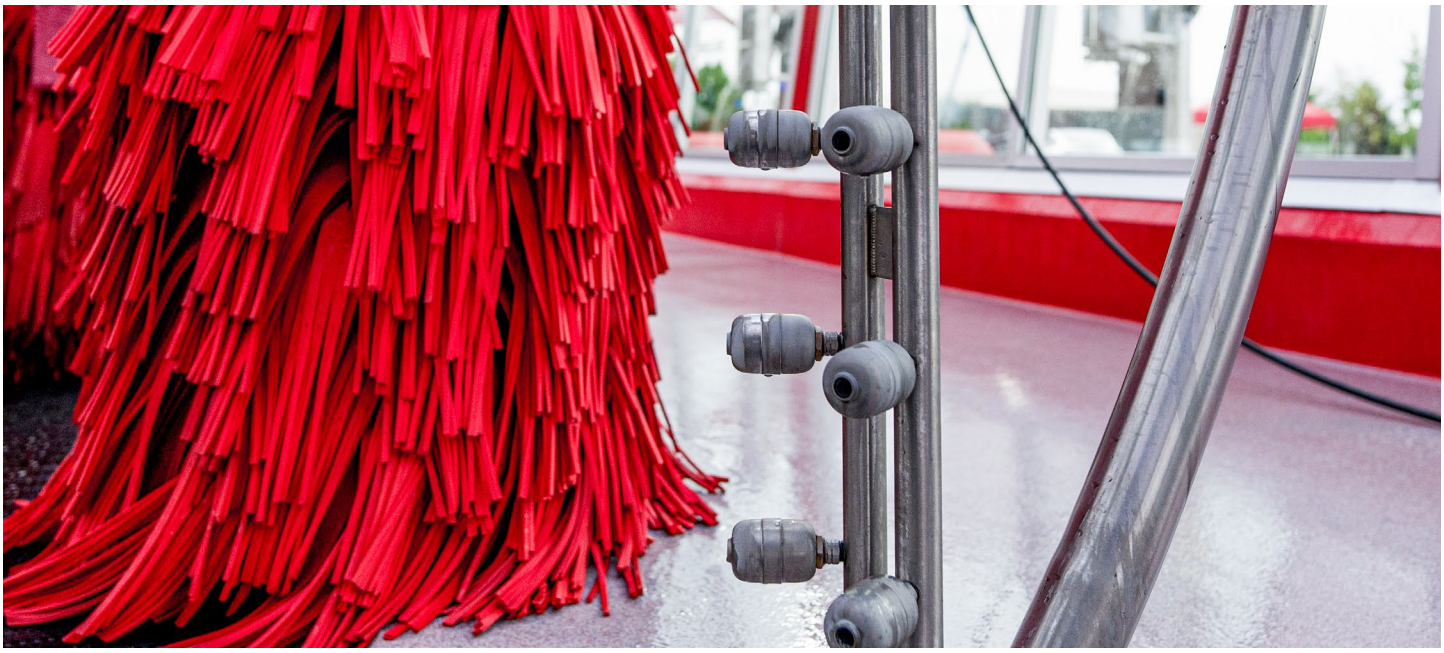
C-T-LINECLEANER-5

Tommy Line Cleaner contains 5-10% hydrochloric acid and is used to flush out the detergent lines, ladder rack, and tunnel applications helping break up detergent buildup and other minerals that caused loss of detergent suction and back pressure. This product should not be used to clean tunnel stainless-steel equipment or to wash cars due to its corrosive nature.

Nozzle standard

This section covers the various Nozzles that are used within each application of a Tommy's Express Car Wash. It is important to follow this standard as using incorrect Nozzles can cause back pressure and wash quality issues.

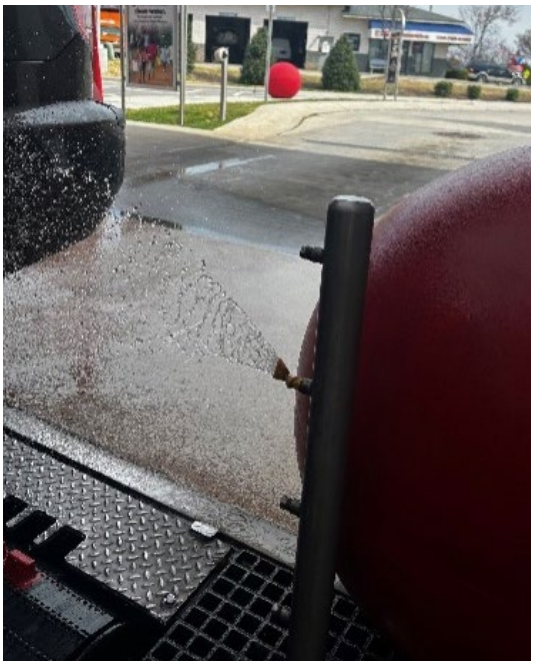
NOTE: It is important that the total sum of Nozzle flow rates (Gallons Per Minute) exceeds the injector size in one function in the wash. If the injector GPM is larger than the sum of Nozzle flow rates on a particular function, you may experience back pressure and/or loss of suction of detergent in your draw lines. For example, if you have a 3.25 injector on your front Presoak and only (4) 5e80 Nozzles (5 = .5 GPM, 80 = 80-degree angle) then the total flow rate sum of your Nozzles will equal 2.0 GPM, thus potentially causing the issues stated above.



Nozzle standard

PRE BLASTER	BUG SPRAY
TRIPLE PRESOAK ARCH	BUMPER BLASTERS
CTAS	DOUBLE THREAT BLASTERS
COMBOS 1 & 2	HIGH-PRESSURE RINSE ARCH
TOMMY GUARD	DRYING AGENT
SPOT FREE RINSE ARCH	TIRE SHINE MANIFOLD
DRY HUGGER CLEANER	NOZZLE STANDARD OVERVIEW

Pre Blaster



The Pre Blaster applies reclaim water to the sides of vehicles which helps loosen up dirt and grime as it enters onto the belt. The Pre Blaster contains a Flare Nozzle installed at the top on each side of the applicator connected to ¼" Ball Connector:

1" Diameter Flare Nozzle (P-WAT-2489)

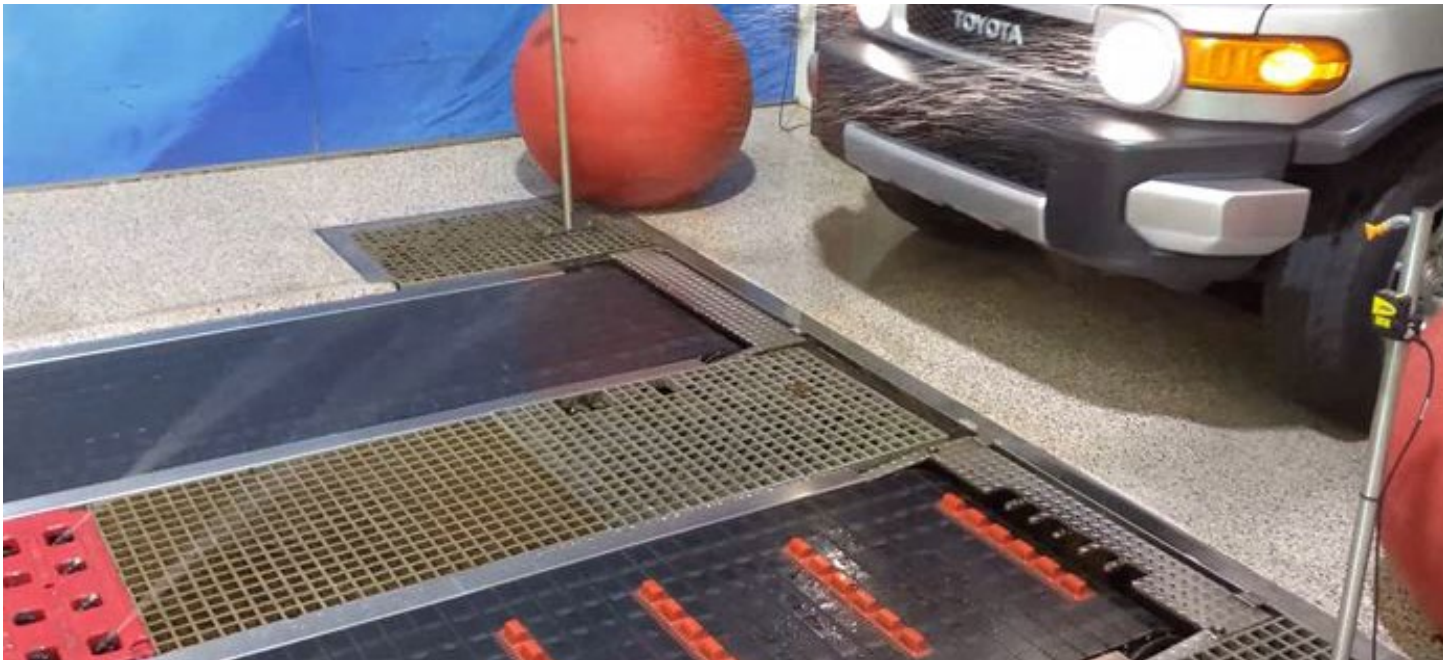
¼" Ball Connector for 1" Flare Nozzle (P-WAT-2490)

The remaining ports on each side of the manifold are plugged with three Stainless-Steel Plugs:

Figure 12: *¼" Stainless-Steel Plug (P-WAT-2132)*

Bug Spray

The Bug Spray applicator is positioned at the beginning of the tunnel before the Triple Presoak arch and applies Tommy's Express Presoak #1 on the front bumpers of vehicles to remove bugs and other acidic materials. The Bug Spray applicator contains two 10e80 Nozzles (figure 2) on the sides of the Blaster and two Stainless-Steel Plugs (figure 12) in the middle.



Triple Presoak Arch

The Triple Presoak Arch (figure 1) contains two different types of Nozzles for the center, front, and rear Presoak applications.

Figure 1: *Triple Presoak Arch*

Front Presoak

The Front Presoak portion of the triple Presoak arch contains two different types of Nozzles. 10e80 Nozzles (Figure 2) hang from the top (Figure 3), while 03e80 Nozzles (Figure 4) are on the sides (Figure 5). The top Nozzles and side Nozzles are screwed into 4 lb. Check Valves (Figure 6).

NOTE: The first number for each Nozzle represents Nozzle capacity (GPM), thus 10 = 1.0 GPM. The second number represents the spray angle, thus 40 = 40-degree angle. This holds true for each Nozzle in your wash.

***Figure 2**: 10e80 Nozzle (P-CHE-2108)*

***Figure 4**: 03e80 Nozzle (P-WAT-2135)*

***Figure 6**: 4 lb. Check Valve (P-CHE-2150)*

***Figure 3**: Front Presoak (top)*

***Figure 5**: Front Presoak (side)*

Center Presoak

The Center Presoak Arch (figure 7) contains only 10e80 Nozzles (figure 2).

Figure 7: *Center Presoak Arch*

Rear Presoak

The Rear Presoak portion of the Triple Presoak Arch contains the same setup as the Front Presoak. 10e80 Nozzles (figure 2) hang from the top (figure 8), while 03e80 Nozzles (figure 4) are on the sides (figure 9).

Figure 8: *Rear Presoak (top)*

Figure 9: *Rear Presoak (side)*

Bumper Blasters

The Front Bumper Blaster (figure 10) contains two 10e80 Nozzles (figure 2) in the middle and two 10e40 (figure 11) Nozzles on the outsides. This is to limit the amount of Presoak being sprayed outside the vehicle width.

The Rear Bumper Blaster contains two 10e40 (figure 11) Nozzles in the middle and two ¼" Stainless-Steel Plugs (figure 12) on the outsides.

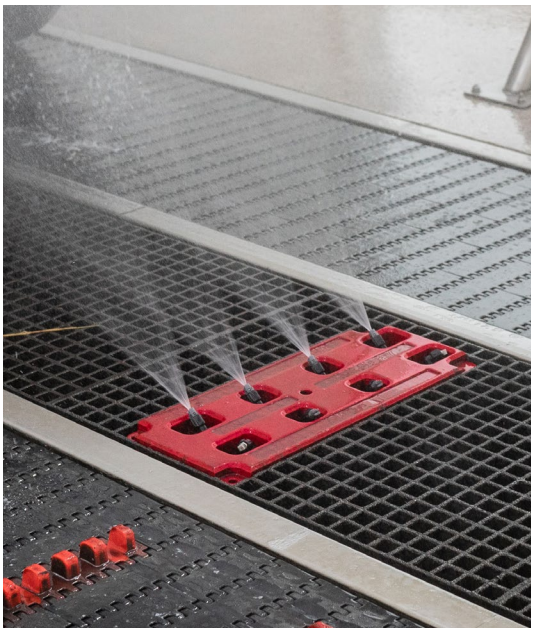


Figure 10: *Front & Rear Bumper Blasters*

Figure 11: *10e40 Nozzle (P-CHE-2107)*

Figure 12: *¼" Stainless-Steel Plug (P-WAT-2132)*

CTA 1

CTA 1 (figure 13) contains a 10e80 Nozzle (figure 2).

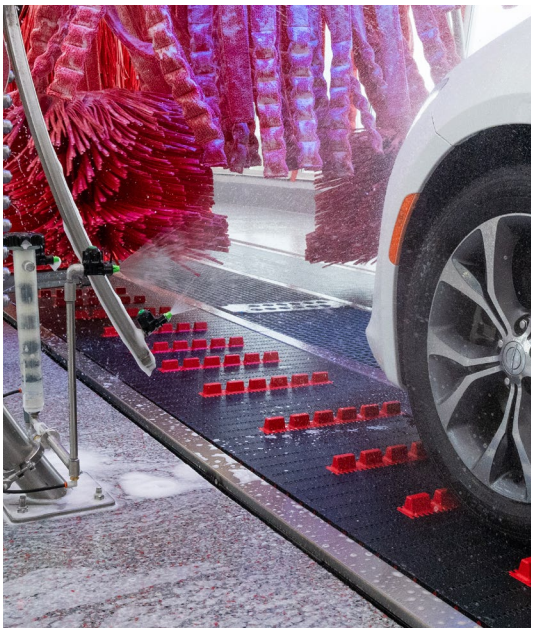


Figure 13: *CTA 1*

CTA 2

CTA 2 (figure 14) is set up in a vertical manner, containing a 10e80 Nozzle (figure 2) screwed into a 4 lb. Check Valve (figure 6).

Figure 14: *CTA 2*

Double Threat Blasters

The Double Threat Blasters apply high-pressure water onto the sides and wheel wells of vehicles to rinse off excessive mud. They have (10) Rotating Turbo Nozzles installed on each side.

(P-CHE-2138)

Combos 1 & 2 (legs 1 & 2)

Both combo legs for 1 and 2 contain 10e40 Nozzles (figure 11) for both side Nozzles (figure 16) that spray directly on the Rocker Brushes, and 05e80 Nozzles (figure 15) at 1, 3, and 5, with ¼" Stainless-Steel Plugs (figure 12) on 2 and 4 at the top (figure 17) that spray on the Mitters.

Each combo leg has four foaming head Nozzles installed to lubricate the cloths.

Figure 15: *5e80 Nozzle (P-WAT-2133)*

Figure 15.5: *(P-M2086)*

Figure 16: *Combos 1 & 2 sides for Rockers*

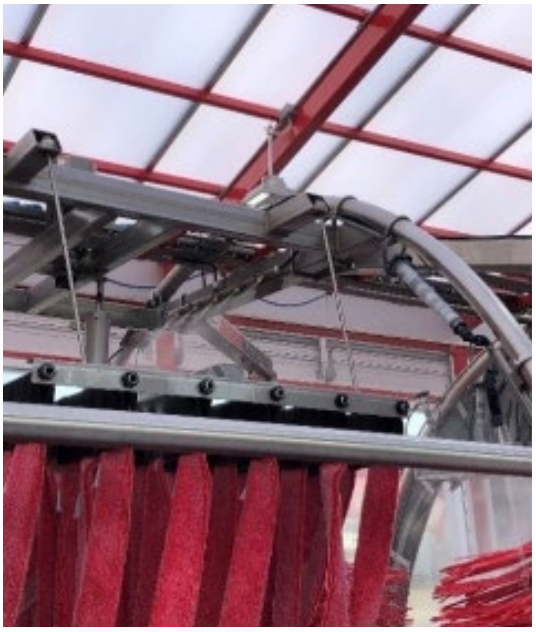


Figure 17: *Combos 1 & 2 top for Mitters*

High-Pressure Rinse Arch

The High-Pressure Rinse Arch (figure 18) contains only steel ¼" 4010 MEG Nozzles (figure 19). Angle the second and third lowest Nozzles with a Stainless-Steel tee and 90-degree elbow to hit the side mirrors.

Figure 19: *¼" MEG 4010 Nozzle (P-WAT-2192)*

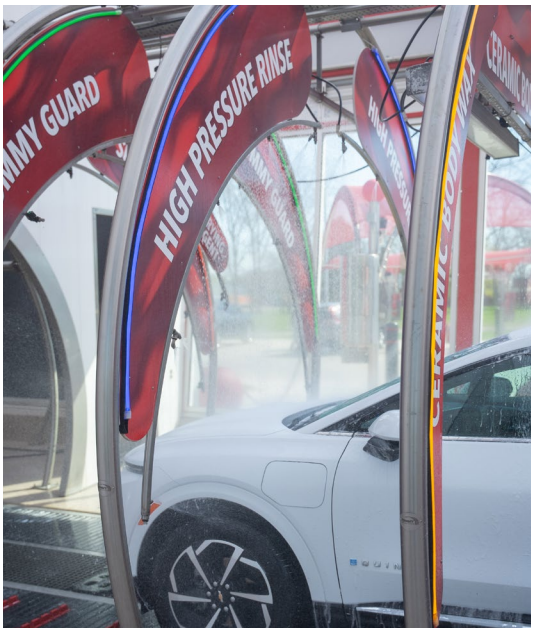


Figure 18: *High-Pressure Rinse Arch*

Tommy Guard® Arch

The Tommy Guard Arch (figure 20) contains K-Nozzles (figure 21) attached with elbows and a 4 lb. diaphragm Check Valve (figure 6) with every other space containing a ¼" Stainless-Steel Plug (figure 12).

Figure 21: *K-Nozzle (P-CHE-2049)*

Figure 20: *Tommy Guard Arch*

Drying Agent

Drying Agent contains two separate Nozzles on the manifold. 10e40 Nozzles (figure 11) are on the two elbows on the sides of the manifold (figure 23) to concentrate the spray underneath the mirrors. 05e80 Nozzles (figure 15) are on the rest of the manifold. All Nozzles are screwed into 4 lb. Check Valves (figure 6).

Figure 22: *Drying Agent Manifold*

Figure 23: *10e40 Nozzles on Manifold side elbows*

Spot Free Rinse Arch

Only 10e80 Nozzles (figure 2) screwed into 4 lb. Check Valves (figure 6) are on the Spot Free Rinse Arch (figure 25).

Figure 25: *Spot Free Rinse Arch*

Tire Shine Manifold

The Tire Shine Manifold (figure 26) contains steel 1/4" 110-Degree 0.2 GPM Nozzles (figure 27) screwed into 4 lb. Check Valves (figure 6). There are 16 total Nozzles on the Tire Shine Manifold.

Figure 27: *¼" 110-Degree 0.2GPM (P-WAT-2243)*

Figure 26: *Tire Shine Manifold*

Dry Hugger Cleaner

The Dry Hugger Cleaning Manifold has three 05e80 Nozzles installed on each site of the manifold, pointed directly at the cloth to clean and rinse the Dry Huggers.

Nozzle standard overview

Presoak

Pre-Blaster
(2) Flare Nozzles, (2) Ball Connectors, (6) ¼" Stainless-Steel Plugs

Bug Spray
(2) 10e80

Front Presoak
(2) 10e80, (2) 03e80, (4) 4 lb. Check Valve

Front Bumper Blaster
(2) 10e80, (2) 10e40

Center Presoak
(10) 10e80, (10) 4 lb. Check Valve

Rear Presoak
(2) 10e80, (2) 03e80, (4) 4 lb. Check Valve

Rear Bumper Blaster
(2) 10e40, (2) SS Plug

CTA 1
(2) 10e80

CTA 2
(2) 10e80

Double Threat Blasters

(20)

Brite

C1L1
(3) 05e80, (2) SS Plug, (2) 10e40, (4) Foaming Head Nozzles

C1L2
(3) 05e80, (2) SS Plug, (2) 10e40, (4) Foaming Head Nozzles

C2L1
(3) 05e80, (2) SS Plug, (2) 10e40, (4) Foaming Head Nozzles

C2L2
(3) 05e80, (2) SS Plug, (2) 10e40, (4) Foaming Head Nozzles

High-Pressure Rinse

High-Pressure Rinse Arch
(14) MEG 4010 SS

Tommy Guard

Tommy Guard
(6) K-Nozzle, (6) 4 lb. Check Valve, (4) SS Plug

Bumper Wax
(2) 10e80, (2) 10e40

Drying Agent

(6) 05e80, (2) 10e40, (8) 4 lb. Check Valve

Rear Window Rinse

(2) 10e40, (2) SS Plug

Spot Free Rinse

(12) 10e80, (10) 4 lb. Check Valve

Tire Gloss

(16) 110 deg 0.2 GPM SS, (16) 4 lb. Check Valve

Dry Hugger Cleaner

(6) 05e80 Nozzles

Pod standards

Detergent pod Metering Tip standard

Tommy Brite	Tommy Brite	Tommy Brite	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak Lemon Scent
Combo 1 Leg 2	Combo 1 Leg 1	Rainbow Coat	CTA 2	CTA 1	Rear Bumper Blaster	Rear Presoak	Presoak	Front Bumper Blaster	Front Presoak
5.50	5.50	5.50	0.75	1.50	2.00	2.00	2.25	2.00	Dual 2.00
Lime	Burgundy	Pumpkin	Red	L. Blue	Warm - Lime Cold - Turq.	Warm - Burg. Cold - Lime	Pink	Warm - L. Blue Cold - Orange	Presoak: Warm - Pink Cold - Lime Lemon: Lime
1:446	1:556	1:624	1:35	1:53	Warm - 1:162 Cold - 1:128	Warm - 1:202 Cold - 1:162	1:92	Warm - 71:1 Cold - 137:1	Presoak: Warm - 82:1 Cold - 162:1 Lemon: 162:1
15	15	15-25	15-25	---	---	---	25	---	---
		Tommy's Express #4 (Vacation Scent) 1 Draw Line		**Tommy's Express #3 (Tommy Brite) 6 Draw Lines**		**Tommy's Express #2 (Lemon Scent) 1 Draw Line**		**Tommy's Express #1 (Tommy Presoak) 8 Draw Lines**	

Detergent	Presoak	Tire Gloss	Drying Agent Vacation Scent	Tommy Guard	Ceramic Wax	Water	Tommy Brite	Tommy Brite	Tommy Brite	Water
Detergent Function/Label	Bug Spray	Tire Gloss	Drying Agent	Guard	Ceramic Wax	Ceramic Wax Pre-Rinse	Combo 2 Leg 2	Combo 2 Leg 1	Red Hot Cleanser	Red Hot Cleanser Pre-Rinse
Injector (GPM)	1.50	1.50	Dual 2.25	3.25	5.50	8.00	5.50	5.50	5.50	8.00
Metering Tip (+/- 1 = within std)	Warm - L. Blue Cold - Tan	Black	D/A : Burg. Vacation: Lime	Lime	Copper	---	Burgundy	Burgundy	Orange	---
Dilution Ratio	Warm - 1:53 Cold - 1:117	1:12	D/A - 1:228 Vacation - 1:182	1:182	1:630	---	1:556	1:556	1:377	---
Air Pressure (psi)	---	---	---	20	10	---	10	10	25-35	---
Tote Location	**Tommy's Express #8 (Tire Gloss) 1 Draw Lines**		**Tommy's Express #7 (Drying Agent) 1 Draw Line**		**Tommy's Express #6 (Tommy Guard) 2 Draw Lines**		**Tommy's Express #5 (Ceramic Wax) 1 Draw Line**			

Maintenance pod standard (Metering)

Detergent	Spare	Spare	Spare	Water	Cloth & Window Cleaner	Water	Tommy Guard	Tommy Bay Cleaner	Cloth & Window Cleaner	Water
Detergent Function/Label	Spare	Spare	Spare	Dry Hugger Rinse	Dry Hugger Cleaner	Rear Window Rinse	Bumper Wax	Walls	Windows	Underbody
Injector	---	---	---	2.25	2.25	3.25	2.00	5.50	5.50	8.00
Metering Tip (+/- 1 = within std)	---	---	---	---	Yellow	---	Burgundy	Black	Black	---
Dilution Ratio	---	---	---	---	1:22	---	1:202	1:43	1:43	---
Air Pressure (psi)	---	---	---	---	---	---	---	---	---	---
Tote Location							**Tommy's Express #10 (Tommy Bay Cleaner) 1 Draw Line**		**Tommy's Express #9 (Cloth & Window Cleaner) 2 Draw Lines**	

Detergent pod air functions (Metering)

Detergent Pod Air Functions										
Air Function/Label	Spare	Spare	Tire Gloss Retract	Tire Gloss Extend	Dry Hugger Extend	Spare	Wrap 2 PS Assist	Wrap 2 DS Assist	Wrap 1 PS Assist	Wrap 2 DS Assist
Air Pressure (psi)	---	---	45-55	20-30	40-55	---	30-35	25-30	30-35	25-30

Franchise VersaDial detergent pod standard

Tommy Brite	Tommy Brite	Tommy Brite	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak	Tommy Presoak Lemon Scent
Combo 1 Leg 2	Combo 1 Leg 1	Rainbow Coat	CTA 2	CTA 1	Rear Bumper Blaster	Rear Presoak	Presoak	Front Bumper Blaster	Front Presoak
5.50	5.50	5.50	0.75	1.50	2.00	2.00	2.25	2.00	Dual 2.00
17 - 21	15 - 19	14 - 17	29 - 32	27 - 30	Warm - 18 Cold - 25	18 - 24 (Seasonal)	23 - 27	21 - 29 (Seasonal)	Presoak: 19 - 29 (Seasonal) Lemon: 17-21
1:489 - 1:374	1:605 - 1:424	1:669 - 1:489	1:24 - 1:9.1	1:61 - 1:40	1:163 - 1:98	1:163 - 1:107	1:132 - 1:92	1:136 - 1:64	1:154 - 1:64 1:178 - 1:136
15	15	15-25	15-25	---	---	---	25	---	---
		Tommy's Express #4 (Vacation Scent) 1 Draw Line		**Tommy's Express #3 (Tommy Brite) 6 Draw Lines**		**Tommy's Express #2 (Lemon Scent) 1 Draw Line**		**Tommy's Express #1 (Tommy Presoak) 8 Draw Lines**	

Detergent	Presoak	Tire Gloss	Drying Agent Vacation Scent	Tommy Guard	Ceramic Wax	Water	Tommy Brite	Tommy Brite	Tommy Brite	Water
Detergent Function/Label	Bug Spray	Tire Gloss	Drying Agent	Guard	Ceramic Wax	Ceramic Wax Pre-Rinse	Combo 2 Leg 2	Combo 2 Leg 1	Red Hot Cleanser	Red Hot Cleanser Pre-Rinse
Injector (GPM)	1.50	1.50	Dual 2.25	3.25	5.50	8.00	5.50	5.50	5.50	8.00
Versadial Setting Range	18 - 28 (Seasonal)	Black Metering Tip	Drying Agt: 15 - 18 Vacation: 16 - 20	18 - 20	11 - 13	---	15 - 19	15 - 19	20 - 24	---
Dilution Ratio	1:123 - 1:55	1:12	1:247 - 1:184 1:224 - 1:163	1:266 - 1:236	1:965 - 1:750	---	1:699 - 1:424	1:605 - 1:424	1:399 - 1:295	---
Air Pressure (psi)	---	---	---	20	10	---	10	10	25-35	---
Tote Location	**Tommy's Express #8 (Tire Gloss) 1 Draw Lines**		**Tommy's Express #7 (Drying Agent) 1 Draw Line**		**Tommy's Express #6 (Tommy Guard) 2 Draw Lines**		**Tommy's Express #5 (Ceramic Wax) 1 Draw Line**			

Maintenance pod standard (VersaDial)

Detergent	Spare	Spare	Spare	Water	Cloth & Window Cleaner	Water	Tommy Guard	Tommy Bay Cleaner	Cloth & Window Cleaner	Water
Detergent Function/Label	Spare	Spare	Spare	Dry Hugger Rinse	Dry Hugger Cleaner	Rear Window Rinse	Bumper Wax	Walls	Windows	Underbody
Injector	---	---	---	2.25	2.25	3.25	2.00	5.50	5.50	8.00
Versadial Setting Range	---	---	---	---	32	---	14 - 16	32	32	---
Dilution Ratio	---	---	---	---	1:27	---	1:243 - 1:199	1:66	1:66	---
Air Pressure (psi)	---	---	---	---	---	---	---	---	---	---
Tote Location							**Tommy's Express #10 (Tommy Bay Cleaner) 1 Draw Line**		**Tommy's Express #9 (Cloth & Window Cleaner) 2 Draw Lines**	

Detergent pod air functions (VersaDial)

Detergent Pod Air Functions										
Air Function/Label	Spare	Spare	Tire Gloss Retract	Tire Gloss Extend	Dry Hugger Extend	Spare	Wrap 2 PS Assist	Wrap 2 DS Assist	Wrap 1 PS Assist	Wrap 2 DS Assist
Air Pressure (psi)	---	---	45-55	20-30	40-55	---	30-35	25-30	30-35	25-30

How water effects wash quality

Water hardness

Water hardness is the amount of mineral concentration found in water. Hard water contains a higher-than-average mineral content (think calcium, limestone, chalk, etc.) and is measured by grains per gallon (GPG). High amounts, which are typically above 2-3 GPG, are responsible for causing loss of cleaning power and overall effectiveness of detergency. In terms of how harmful this is for a car wash, harder water will have a negative effect on wash quality such as leaving “hard water spots” on vehicles, clogging foamers and applicators, and causing white spots to appear on equipment. At Tommy’s Express, we utilize water softeners to help remove the harmful effects of hard city water. True soft water is typically at or below 1 GPG. If you are concerned that your site may be having hard water issues, you can find a water hardness test kit that includes written instructions for performing the test on the Tommy store - Part #P-SE-2178.

(P-SE-2178)

An extreme example of “Hard Water Spots”

Reverse Osmosis

Reverse Osmosis (or R.O.) is a process where you demineralize or deionize water by pushing it under pressure through a semipermeable reverse osmosis membrane. Through this filtration/purification process, we create what is called “spot-free” or purified water. We apply this spot-free water as a final rinse through the “Spot Free Rinse Arch” on vehicles to eliminate any additional foam, soap, or foreign material off vehicles, which aids in the drying process allowing water on vehicles to break and bead up so they can dry spot free in the blower room. Spot free water that has been treated with R.O. should have a low Total Dissolved Solids (TDS) count. TDS is a measure of the combined total of organic and inorganic substances contained in a liquid. This includes anything present in water other than the pure H2O molecules. These solids are primarily minerals, salts, and organic matter that can be a general indicator of water quality. TDS is measured in parts per million (ppm), and high amounts of TDS, typically seen at 20ppm or higher, can lead to spotting on vehicles. We have a handheld TDS meter available on our webstore that you can use to check the outgoing PPM of your spot free rinse arch. Part #P-WAT-2836.

Figure 28: *TDS meter (P-WAT-2836)*

Chlorine

Chlorine is a chemical agent commonly added by city water plants to disinfect water, making it safe for drinking. However, too much chlorine content can have negative effects on your car wash equipment causing damage to copper piping and RO membranes, which can cause your RO to not be able to generate spot free water. The carbon filter unit built into your RO is designed to remove chlorine before it gets out to the wash

but overtime, will need to replaced. You should regularly check chlorine content on your RO and can find a chlorine checker on the Tommy store - Part #P-WAT-2686. For an instructional video, click below:

HOW TO PERFORM A CHLORINE TEST

(P-WAT-2686)

Reject water

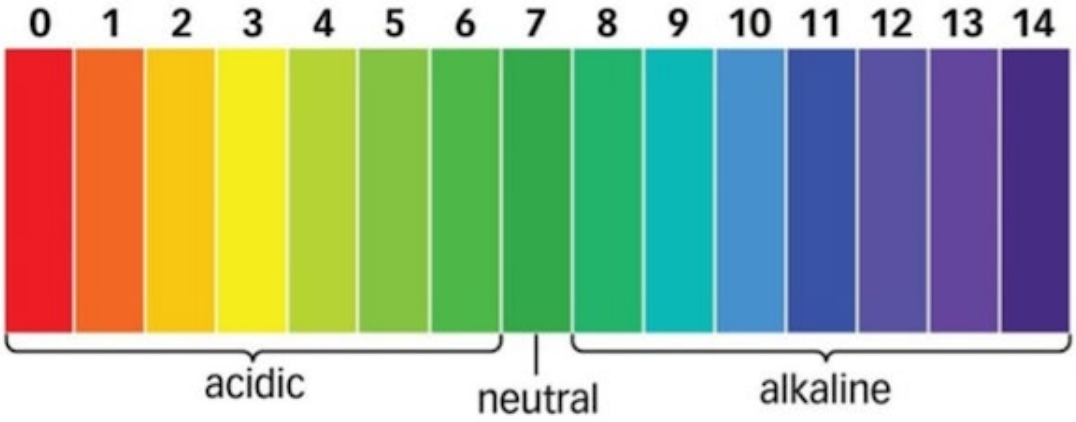
Reject water is water that contains high amounts of TDS that was rejected by the RO unit, making it unable to pass through the membranes during the purification process. To help you save on water consumption, we install a reject tank on your mezzanine that holds this reject water, that is then used at our high-pressure rinse arch. We apply reject water through the high-pressure rinse arch before the RO, drying agent, and tommy guard applications in an effort to rinse the reject water off with the RO water so that vehicle's dry spot free when exiting the tunnel.

Reclaim water

Reclaim water is recycled, reusable wash water that is treated and stored in tanks underground that we reuse for specific wash functions in subsequent washes. We utilize reclaim water at the pre-blaster, dual-blaster, and belt flush applications to help our sites save on city water consumption. Reclaim water should not be used for final rinses or detergent functions as the water can cause the products to lose efficacy, and can also cause spotting issues as it has a high amount of TDS.

How pH effects wash quality

The pH scale measures how alkaline or acidic a substance is. The pH scale ranges from 0-14, starting at 0 pH and ending with 14 pH. 0-6 on the scale is considered acidic, 7 is considered neutral, and 8-14 is considered alkaline.



High alkaline cleaners such as our Tommy's Express #1 (Presoak) target cleaning organic materials (bugs, oils, bird droppings tree sap, etc.), whereas acidic cleaners such as our Tommy's Express #3 (Brite), are used best to eliminate inorganic materials (clay, sand, dirt, road salt etc.). We use pH test strips that can be found on the Tommy's store (P-CHE-2143) to measure pH levels on three different applications of the wash. The first application we test in the tommy's tunnel is center Presoak, targeting an alkaline reading typically between 10-13 on the pH scale. Secondly, we test pH at combo 1 leg 2, targeting an acidic reading typically between 5-6 on the pH scale. Finally, we swipe the body of the vehicle with a pH strip as it is going through the spot free rinse application, targeting a neutral reading of 7 on the scale.

(P-CHE-2143)

5 factors of cleaning

There are five factors that contribute to the production of a “Clean, Shiny, Dry” vehicle:

1. Temperature

We utilize water heaters in the Tommy’s system to heat city water for our wash applications. Hot water of 100 degrees Fahrenheit or higher improves the efficacy and cleaning power of our detergents, especially with removing oils and road film.

2. Friction

Friction is the amount of contact our brush materials have on the vehicle. It is important to make sure the rotation, cloth speed, air pressure, and mechanics of the wraps, huggers, mitters, and rockers are properly dialed in so that the sides, rears, fronts, and tops of vehicles are scrubbed and cleaned effectively. Not enough wrap friction on the back ends of wraps for example can leave dirt around the license plate area and too much wrap friction on the front for example and fold mirros and bend front license plates.

3. Detergent concentration

This is the strength at which the detergents are being applied to vehicles. We have recommended dilution ratios for all detergents and applications (see detergent pod standard above). Detergents are applied in specific order to clean vehicles effectively. For example, if too much Tommy’s Express #1 (Presoak) is applied on vehicles’ surfaces, it may have issues beading up and breaking causing dry quality issues. On the flipside, if too much Tommy’s Express #3 (Brite) is applied, you may encounter spotting issues on vehicles. We make seasonal adjustments to dilution ratios to help combat the elements. For example: Stronger dilution ratio during the winter months

on the rear Presoak will aid in the removal of salt and dirt. A stronger dilution ratio during the summer months on the front Presoak will aid in the removal of bugs.

4. Dwell time

This is the amount of time the detergent has to work into the surfaces of vehicles before being rinsed off. Increasing or decreasing the belt speed and rinsing detergents off too quickly are key factors that will effect dwell time which can then effect wash quality and cleaning capabilities.

5. Water quality

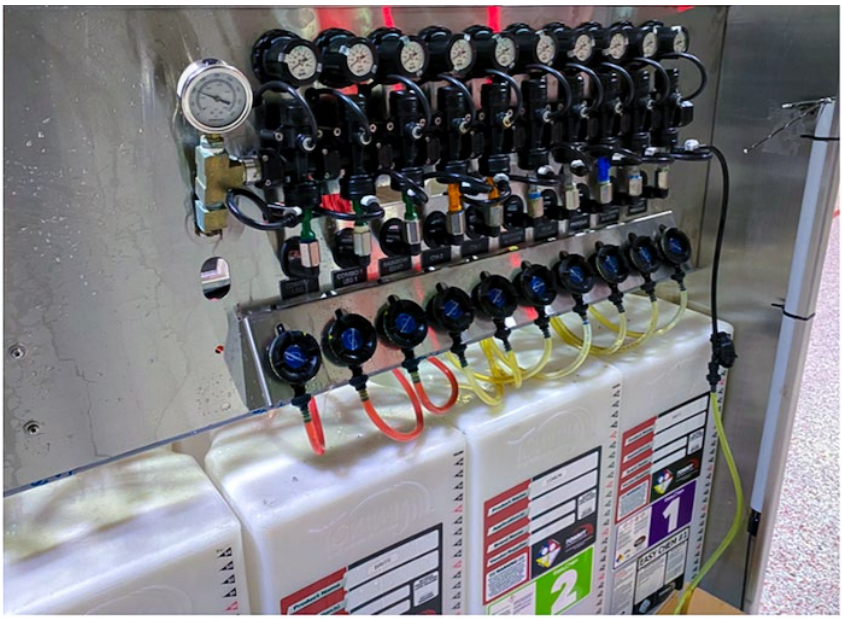
Water quality is effected by GPG found in city water, PPM found in RO TDS, etc. See the “How Water Effects Wash Quality” section above for more detailed information.

VersaDial & Metering Tips

VersaDial and Metering Tips are both ways to precisely measure the amount of detergent-to-water ratio for each application throughout the tunnel using the Hydraflex system. VersaDial is a newer model designed to get a wider range of detergent ratios with 32 settings, whereas Metering Tips is the older model with only 20 available settings. The lower the VersaDial setting and smaller the tip size, the less detergent you will apply through the function. The higher the VersaDial setting and larger the tip size, the more detergent you will apply through the function.

VersaDial

- Contains more precise dilution settings compared to Metering Tips.
- The device is reliable and consistent when applying target detergent usage per function, less prone to clogging.
- 32 total unique dilution settings, easily managed by the simple turn of a dial.
- Safer and easier operationally, as team members do not need to disconnect detergent draw lines and expose themselves to change Metering Tips with chemical residue.
- Sites should check each VersaDial barb monthly (or when wash quality declines) to confirm proper suction.
- Typically, the VersaDial pre-filter should be replaced every 6 months when applying more harsh products like Tommy's Express #1 (Presoak), and annually when applying all other detergents.
- The VersaDial device typically should be replaced every 250,000 – 300,000 vehicles.



Metering Tips

- Metering Tips are threaded into the injector, color coordinated and vary in size.
- Each tip color correlates to a different size (dilution ratio).
- Water to detergent ratios vary from 4.9:1 (4.9 parts water to 1 part detergent) to 1074:1 (1074 parts water to 1 part detergent).
- There are two separate categories: ultra-lean tips (Copper, Pumpkin, Burgundy, and Lime) and standard (Tan, Orange, Turquoise, Pink, Light Blue, Brown, Red, White, Green, Blue, Yellow, Black, Purple, and Gray).
- It is highly recommended to label these Metering Tips for storage so as to not mix up the different colors, for example, the Copper and Brown Metering Tips look similar but have vastly different hole sizes.
- Due to its thick viscosity, Tommy's Express #8 (Tire Gloss) should only be applied through a Metering Tip compatible injector.
- You should check for clogs and discoloration of each Metering Tip on a weekly basis (or when wash quality diminishes) and replace as needed.

Metering Tip & VersaDial dilution chart

Flow Rate (GPM) at 200 PSI ➡	0.25	0.50	0.75	1.00	1.50	2.00	2.25	3.00	3.25	3.75	4.50	5.50	8.0	10.0	12.0	15.0
Injector Color ➡	White	Yellow	Tan	Red	Orange	Gray	Blue	Light Blue	Light Green	Pink	Purple	Dark Green	Black	Black	Black	Black
Dial Setting: 1	1:223	1:445	1:668	1:891	1:1336	1:1781	1:2004	1:2672	1:2895	1:3340	1:4008	1:4899	1:7125	1:8907	1:10688	1:13360
Dial Setting: 2	1:185	1:369	1:554	1:738	1:1107	1:1476	1:1661	1:2215	1:2399	1:2768	1:3322	1:4060	1:5906	1:7382	1:8859	1:11073
Dial Setting: 3	1:162	1:325	1:487	1:650	1:974	1:1299	1:1461	1:1949	1:2111	1:2436	1:2923	1:3573	1:5196	1:6495	1:7795	1:9743
Dial Setting: 4	1:141	1:282	1:423	1:565	1:847	1:1129	1:1270	1:1694	1:1835	1:2117	1:2540	1:3105	1:4516	1:5645	1:6774	1:8468
Dial Setting: 5	1:121	1:242	1:363	1:484	1:726	1:968	1:1089	1:1452	1:1573	1:1815	1:2178	1:2663	1:3873	1:4841	1:5809	1:7262
Dial Setting: 6	1:102	1:204	1:306	1:408	1:612	1:816	1:917	1:1223	1:1325	1:1529	1:1835	1:2243	1:3262	1:4078	1:4893	1:6116
Dial Setting: 7	1:85	1:169	1:254	1:339	1:508	1:678	1:762	1:1016	1:1101	1:1271	1:1525	1:1864	1:2711	1:3388	1:4066	1:5082
Dial Setting: 8	1:70	1:140	1:210	1:281	1:421	1:561	1:631	1:842	1:912	1:1052	1:1263	1:1543	1:2245	1:2806	1:3367	1:4209
Dial Setting: 9	1:58	1:115	1:173	1:231	1:346	1:461	1:519	1:692	1:750	1:865	1:1038	1:1268	1:1845	1:2306	1:2767	1:3459
Dial Setting: 10	1: 50	1:100	1:151	1:201	1:301	1:402	1:452	1:603	1:653	1:753	1:904	1:1105	1:1607	1:2009	1:2411	1:3013
Dial Setting: 11	1:44	1:88	1:132	1:175	1:263	1:351	1:395	1:526	1:570	1:658	1:790	1:965	1:1404	1:1755	1:2105	1:2632
Dial Setting: 12	1:38	1:77	1:115	1:154	1:231	1:308	1:346	1:461	1:500	1:577	1:692	1:846	1:1231	1:1538	1:1846	1:2307
Dial Setting: 13	1:34	1:68	1:102	1:136	1:204	1:273	1:307	1:409	1:443	1:511	1:613	1:750	1:1091	1:1363	1:1636	1:2045
Dial Setting: 14	1:30	1:61	1:91	1:122	1:182	1:243	1:274	1:365	1:395	1:456	1:547	1:669	1:973	1:1216	1:1459	1:1824
Copper	1:29	1:57	1:86	1:114	1:172	1:229	1:258	1:343	1:372	1:429	1:515	1:630	1:916	1:1145	1:1374	1:1717
Pumpkin	1:28	1:57	1:85	1:113	1:170	1:227	1:255	1:340	1:369	1:425	1:510	1:624	1:908	1:1134	1:1361	1:1702
Dial Setting: 15	1:27	1:55	1:82	1:110	1:165	1:220	1:247	1:330	1:357	1:412	1:495	1:605	1:880	1:1100	1:1320	1:1649
Burgundy	1:25	1:51	1:76	1:101	1:152	1:202	1:228	1:304	1:329	1:379	1:455	1:556	1:809	1:1012	1:1214	1:1518
Dial Setting: 16	1:25	1:50	1:75	1:100	1:149	1:199	1:224	1:299	1:324	1:374	1:448	1:548	1:797	1:996	1:1195	1:1494
Dial Setting: 17	1:22	1:44	1:67	1:89	1:133	1:178	1:200	1:267	1:289	1:334	1:400	1:489	1:711	1:889	1:1067	1:1334
Dial Setting: 18	1:20	1:41	1:61	1:82	1:123	1:163	1:184	1:245	1:266	1:306	1:368	1:449	1:654	1:817	1:980	1:1225
Lime	1:20	1:41	1:61	1:81	1:122	1:162	1:182	1:243	1:263	1:304	1:365	1:446	1:648	1:810	1:972	1:1215
Tan	1:20	1:39	1:59	1:78	1:117	1:157	1:176	1:235	1:254	1:294	1:352	1:431	1:626	1:783	1:940	1:1175
Dial Setting: 19	1:19	1:39	1:58	1:77	1:116	1:154	1:173	1:231	1:251	1:289	1:347	1:424	1:617	1:771	1:925	1:1156
Dial Setting: 20	1:18	1:36	1:54	1:72	1:109	1:145	1:163	1:217	1:236	1:272	1:326	1:399	1:580	1:725	1:870	1:1087
Orange	1:17	1:34	1:51	1:69	1:103	1:137	1:154	1:206	1:223	1:257	1:308	1:377	1:548	1:685	1:822	1:1028
Dial Setting: 21	1:17	1:34	1:51	1:68	1:102	1:136	1:153	1:204	1:221	1:255	1:306	1:374	1:543	1:679	1:815	1:1019
Turquoise	1:16	1:32	1:48	1:64	1:96	1:128	1:144	1:192	1:208	1:240	1:289	1:353	1:513	1:641	1:770	1:962
Dial Setting: 22	1:16	1:32	1:47	1:63	1:95	1:127	1:142	1:190	1:206	1:237	1:285	1:348	1:506	1:633	1:760	1:950
Dial Setting: 23	1:15	1:29	1:44	1:59	1:88	1:117	1:132	1:176	1:190	1:220	1:264	1:322	1:469	1:586	1:703	1:878
Dial Setting: 24	1:13	1:27	1:40	1:54	1:81	1:107	1:121	1:161	1:175	1:201	1:242	1:295	1:430	1:537	1:645	1:806
Dial Setting: 25	1:12	1:24	1:37	1:49	1:73	1:98	1:110	1:147	1:159	1:183	1:220	1:269	1:391	1:489	1:587	1:733
Dial Setting: 26	1:11	1:23	1:34	1:45	1:68	1:90	1:101	1:135	1:146	1:169	1:203	1:248	1:361	1:451	1:541	1:676
Pink	1:10	1:20	1:31	1:41	1:61	1:82	1:92	1:123	1:133	1:154	1:184	1:225	1:361	1:410	1:492	1:615
Dial Setting: 27	1:10	1:20	1:31	1:41	1:61	1:82	1:92	1:123	1:133	1:154	1:184	1:225	1:328	1:409	1:491	1:614
Dial Setting: 28	1:9.1	1:18	1:27	1:36	1:55	1:73	1:82	1:109	1:118	1:137	1:164	1:200	1:292	1:365	1:437	1:547
Light Blue	1:8.9	1:18	1:27	1:36	1:53	1:71	1:80	1:107	1:115	1:133	1:160	1:195	1:284	1:355	1:426	1:533
Dial Setting: 29	1:7.9	1:16	1:24	1:32	1:48	1:64	1:71	1:95	1:103	1:119	1:143	1:175	1:254	1:318	1:381	1:477
Brown	1:7.7	1:15	1:23	1:31	1:46	1:62	1:70	1:93	1:101	1:116	1:139	1:170	1:248	1:310	1:372	1:465
Dial Setting: 30		1:13	1:20	1:27	1:40	1:53	1:60	1:80	1:86	1:99	1:119	1:146	1:212	1:265	1:318	1:398
Red		1:12	1:18	1:24	1:35	1:47	1:53	1:71	1:77	1:88	1:106	1:130	1:188	1:236	1:283	1:353
White		1:11	1:16	1:21	1:32	1:43	1:48	1:64	1:70	1:80	1:96	1:118	1:171	1:214	1:257	1:321
Dial Setting: 31		1:9.9	1:15	1:20	1:30	1:40	1:45	1:60	1:65	1:75	1:89	1:109	1:159	1:199	1:239	1:298
Green		1:9.9	1:15	1:20	1:30	1:39	1:44	1:59	1:64	1:74	1:89	1:109	1:158	1:197	1:237	1:296
Blue		1:7.8	1:12	1:16	1:23	1:31	1:35	1:47	1:51	1:59	1:70	1:86	1:125	1:156	1:188	1:234
Dial Setting: 32			1:9.1	1:12	1:18	1:24	1:27	1:36	1:39	1:45	1:54	1:66	1:97	1:121	1:145	1:181
Yellow			1:7.5	1:10	1:15	1:20	1:22	1:30	1:32	1:37	1:45	1:55	1:80	1:100	1:120	1:150
Black				1:7.9	1:12	1:16	1:18	1:24	1:26	1:29	1:35	1:43	1:63	1:79	1:94	1:118
Purple				1:3.9	1:5.9	1:7.9	1:8.8	1:12	1:13	1:15	1:18	1:22	1:31	1:39	1:47	1:59
Gray				1:3	1:4.5	1:6.1	1:6.8	1:9.1	1:9.8	1:11	1:14	1:17	1:24	1:30	1:36	1:45

Volumetrics & cost analysis

Volumetrics

This guide provides instructions and tips on how to properly take volumetrics at the wash. Volumetrics is a measurement of detergent usage per car. They are performed on each function in the wash and each detergent used in the pod. The goal of performing volumetrics is to utilize it for "troubleshooting issues in the pod" and measuring usage per function which gives you a cost analysis and car count per drum. For an instructional video, click below.

HOW TO TAKE VOLUMETRICS

Safety materials

- Safety glasses
- Chemically resistant gloves

Essential volumetric materials

- Graduated cylinder (250 or 500 mL)
- Notepad to record data
- Dipstick (wire hanger, string, old draw line) used to dip cylinder into detergent tote
- Rags or paper towels to clean the detergent pod

Volumetric instructions

Step 1: Put on safety glasses and gloves.

Step 2: Record all pod information on a notepad. This includes tips, pressures, injectors, and dilution ratios for each function in both the maintenance and detergent pods.

Step 3: Insert dipstick through the graduated cylinder and lower the cylinder into the pod until it is full. Fill to roughly 210 mLs on a 250 mL cylinder and 430 mLs on a 500 mL cylinder.

NOTE: It may be necessary to drill a small hole in your graduated cylinder.

Step 4: Place graduated cylinder on the pod and take out the draw line for the first function you are recording volumetrics. Insert draw line into your graduated cylinder. Ensure that you have ONE weight and your foot valve installed on the draw line for accurate readings.

Step 5: Come up with a sample size of cars that you are going to count going through the specific function you are taking volumetrics. We recommend counting five cars to get an accurate reading due to vehicles having differences in length. You can also count three or four cars if you are short on time or volume is low at your wash.

Step 6: Write down the initial reading for the function from the graduated cylinder you are running volumetrics, before you count cars on your notepad.

Step 7: Count each car going through the function until you reach your sample size and keep an eye on the graduated cylinder to ensure a proper amount of detergent is drawn from the line. If it appears that little to no detergent is drawing from the cylinder, check for clogging in the metering tip, foot valve, or draw line.

Step 8: Record data on your notepad. Subtract your sample size reading from your initial reading and divide it by the number of cars you watched for that particular function. For example, if your initial reading was 230 mLs, and after watching five cars go through the function, your reading went down to 200 mLs, you would subtract 230-200 = 30. Then divide 30 by the number of cars in the sample size 30/5 cars = 6. This would give you 6 mLs for that function.

Step 9: Place draw line back into the detergent tote when complete.

Step 10: Continue recording volumetrics for each function in the same detergent tote. Once you are finished, pour the rest of the detergent back in the pod, use a rag to clean up any spilled product, and wash your graduated cylinder out with water before moving onto the next detergent in the wash.

Volumetric tips & best practices

- Always wear your protective gear while performing volumetrics.
- Ensure that vehicles do not drive through the gate eyes to ensure accurate measurements of vehicle length. If this occurs, you must restart your volumetrics for that particular function as usage has been effected.
- If a team member pauses or stops the belt while you are recording volumetrics during your function, you must restart your volumetrics for that function as your usage has been effected.
- Many of the detergents will change the color of the tip. Check the color of the tip thread to ensure you are recording the correct tip. If the tip has faded in color, replace it with a new one and throw the old tip away. Refer to your pod setup if you are unsure.
- If you notice that the detergent is continuing to draw from the graduated cylinder once the vehicle has already passed through the function, place the cylinder on the ground. Gravity can sometimes cause the product to continue to draw even if a vehicle is not passing through.
- If you notice that the detergent is not drawing at all or is drawing very little, check for clogged metering tips, foot valves, or lines.
- Make sure to wash out the graduated cylinder each time you start recording volumetrics with a new detergent. Not doing so can lead to potential cross-contamination between the products.
- Keep a mental note of each car that passes through the function you are recording until you have reached your sample size. We recommend writing down each car you watch so that you do not lose track of your count.

- Keep an eye out for discolored and hardened draw lines. Presoak can cause draw lines to become discolored and turn brown. Drying Agent can harden draw lines, leading to kinking that can cause loss of suction. If you notice either of these things, replace the draw lines.
- Make sure that your injector capacity does not exceed your total sum of flow rates of your nozzle capacity on the function you are recording. If the injector capacity is larger, you can potentially lose suction from the draw lines.

Cost analysis

Once you get the average volumetric usage for each detergent application, you can start formulating cost per car for each for each wash function, cost per car for each wash package, and the exact car count per container. Some important factors in the equations will be unit cost (exactly how much it costs per drum/container of each detergent), container size, and the cost per gallon (unit cost divided by container size in gallons).

NOTE: Formulating in an Excel sheet makes it easy to see all your numbers in an organized manner and use equations for all functions. Use the attached template to plug in your numbers:

POD SET UP & VOLUMETRIC TEMPLATE

Volumetric estimate of cost per car

To get the cost per car for each function, take the cost per gallon divided by 3785.41 x volumetric usage.

For this example, the equation will look like this:

1 Gallon = 3,785.41 mL

Volumetric Usage (mL/car)	Unit Cost	Container Size (gal)	Cost Per Gallon	Volumetric Est. of Cost Per Car
2	$684.00	30	$22.80	2

((Cost/Gallon)/3,785.41 mL) x Volumetric Usage (mL)

($22.80/3,785.41mL) x 2mL = $0.01

Cost per wash package

To find the total cost per wash package, simply add together all the cost per car amounts that are provided in that wash package. For example, The WORKS wash will be a sum of all the numbers, since it includes every detergent option. With the QUALITY wash package, only add the sum of scent, front Presoak, front Bumper Blaster, Presoak, rear Presoak, rear Bumper Blaster, CTA 1, Combo 1 legs 1+2, Combo 2 legs 1+2, and Drying Agent. Here is an example of something close you may end up with:

Wash	Est. Cost Per Wash
QUALITY	$0.42
SUPER	$0.49
ULTIMATE	$0.55
WORKS	$0.80

Car count per drum/container

To find the car count per drum/container, you will need to use the gallons in the drum/container multiplied by 3785.41, then divide that by the total amount of detergent used per vehicle (in mL).

Product	Total Amount Used Per Car (mL)	Est. Car Count Per Drum
Tommy's Express #1 (Presoak)	47	2416
Tommy's Express #2 (Lemon Scent)	5	22712
Tommy's Express #3 (Brite)	27	4206
Tommy's Express #4 (Vacation Scent)	10	11356
Tommy's Express #5 (Ceramic Body Wax®)	8	14195
Tommy's Express #6 (Guard)	7	16223
Tommy's Express #7 (Drying Agent)	8	14195
Tommy's Express #8 (Tire Gloss)	24	4732

In this example, to find the car count per drum of Presoak, take (30 gallons per drum x 3785.41)/55.9 mL to get 2,032 cars. The number is rounded to the nearest car. This gives you a very close estimate on how many cars it will take before you run out of detergent.

Titration

Titration is a method or process of determining the concentration of a dissolved substance in terms of the smallest amount of reagent of known concentration required to bring about a given effect in reaction with a known volume of the test solution. The titration test kit is used to verify the concentration of detergent-to-water mixture that is being dispensed out of the various arches and applied to the vehicle. The titration test kit can be found on the Tommy store, Part #P-DET-210. Instructions on how to perform a titration test are explained below.

Titration kit standard operating procedures for Presoak applications

Collect and Prepare Sample

1. Rinse out the vial provided in the Kit with the application site three times.
    a. "Application Site" is the arch or spray nozzles, where detergent is applied to the vehicle
2. Collect a sample from the application site after completing the rinses and set aside for 1 min to allow bubbles to break down.
3. Using the syringe provided, bring the water line of the sample to the **10 mL line**
    a. Remove as many bubbles as you can during this time. Too many bubbles can lead to inaccurate results.
    b. If the water line is not at the **10 mL line**, gather a new sample by repeating steps 2-3
4. Add 3 drops of phenolphthalein indicator (pink capped bottle), swirl the sample and indicator together.
    a. The sample should turn pink at this time.
5. Add 1 drop of Sulfuric Acid (yellow capped bottle) at a time.
    a. Between each drop, swirl the sample and solution to make sure it is mixing.
6. Counting the number of drops, continue to add the Sulfuric Acid (yellow capped bottle) until the solution turns clear. Make sure to continue swirling between each drop.
    a. The solution should technically be completely clear, no pinkish tinge should be seen
7. Use the below table to identify what should be your ideal drop count*. You can also calculate your ratio using the formula located below the table.

Detergent Used	Application Site	Number of Drops (for 10 mL sample**)	Desired Ratio
Tommy's Express Presoak #1	Front Presoak	6-9	1: 300-500
Tommy's Express Presoak #1	Front Bumper Blaster	12-20	1: 120-300
Tommy's Express Presoak #1	Presoak Arch	6-9	1: 300-500
Tommy's Express Presoak #1	Rear Presoak	6-9	1: 300-500
Tommy's Express Presoak #1	Rear Bumper Blaster	12-20	1: 120-300
Tommy's Express Presoak #1	CTA 1	25-40	1: 60-120
Tommy's Express Presoak #1	CTA 2	40+	1: 60 or below

**If you are running any presoak detergent that is not the "Tommy's Express Presoak #1" (Part No. C-T-PRESOAK-30), there is a table in the appendix with more ratio ranges.*

***Please note that you can do smaller or larger samples instead of 10 mL, but the table is designed to be read for 10 mL samples of presoak application.*

The formula to calculate the "exact" dilution ratio for Tommy's Express Presoak #1 is:

$$1 : \frac{[Sample\ size\ collected\ in\ mL\ (10\ mL\ suggested)]}{[Total\ number\ of\ drops\ used\ to\ change\ color]} * 288.43$$

Titration kit standard operating procedures for Brite applications

Collect and Prepare Sample

1. Rinse out the vial provided in the Kit with the application site three times.
    a. "Application Site" is the arch or spray nozzles, where detergent is applied to the vehicle
2. Collect a sample from the application site after completing the rinses and set aside for 1 min to allow bubbles to break down.
3. Using the syringe provided, bring the water line of the sample to the **20 mL line.**
    a. Remove as many bubbles as you can during this time. Too many bubbles can lead to inaccurate results.
    b. If the water line is not at the **20 mL line**, gather a new sample by repeating steps 2-3
4. Add 3 drops of phenolphthalein indicator (pink capped bottle), swirl the sample and indicator together.
    a. The sample should remain clear at this time.
5. Add 1 drop of Sodium Hydroxide (red capped bottle) at a time.
    a. Between each drop, swirl the sample and solution to make sure it is mixing.
6. Counting the number of drops, continue to add the Sodium Hydroxide (red capped bottle) until the solution turns solid pink. Make sure to continue swirling between each drop.
    a. The solution should technically be pink for more than 1 second after swirling the solution.
    b. It should also be a solid pink color. If you add one extra drop after completing your test, the solution should remain the same pink color.
7. Use the below table to identify what should be your ideal drop count*. You can also calculate your ratio using the formula located below the table.

Detergent Used	Application Site	Number of Drops (for 20 mL** sample)	Desired Ratio
Tommy's Express Brite #3	Rainbow	7-13	1: 650-1200
Tommy's Express Brite #3	Combo 1 Leg 1	9-13	1: 650-1000
Tommy's Express Brite #3	Combo 1 Leg 2	9-13	1: 650-1000
Tommy's Express Brite #3	Red Hot	7-13	1: 650-1200
Tommy's Express Brite #3	Combo 2 Leg 1	8-12	1: 700-1100
Tommy's Express Brite #3	Combo 2 Leg 2	8-12	1: 700-1100

**If you are running any brite detergent that is not the "Tommy's Express Brite #3" (Part No. C-T-Brite-30), there is a table in the appendix with more ratio ranges.*

***Please note that you can do smaller or larger samples instead of 10 mL, but the table is designed to be read for 10 mL samples of presoak application.*

The formula to calculate the "exact" dilution ratio for Tommy's Express Brite #3 is:

$$1 : \frac{[Sample\ size\ collected\ in\ mL\ (20\ mL\ suggested)]}{[Total\ number\ of\ drops\ used\ to\ change\ color]} * 414.15$$

Appendix: other constants and ratios

$$1 : \frac{[Sample\ size\ collected\ in\ mL\ (20\ mL\ suggested)]}{[Total\ number\ of\ drops\ used\ to\ change\ color]} * [Factor\ (found\ in\ table\ below)]$$

Detergent Name	Part Number	Factor (used in formula above)
Tommy Presoak (360-C)	C-T-360C-30	101.0
Tommy Brite	C-T-Bodysoap-30	173.4
Tommy's Express Presoak #1	C-T-Presoak-30	288.4
Tommy's Express Brite #3	C-T-Brite-30	414.1

Appendix: Presoak Application Ratios

Detergent Used	Application Site	Number of Drops (for 10 mL sample**)	Desired Ratio
Tommy Presoak (C-T-360C-30)	Front/Rear Presoak	7-10	1: 90-150
	Front/Rear Bumper Blaster	10-15	1: 60-90
	Presoak Arch	7-10	1: 90-150
	CTA 1	40-60	1: 17-25
	CTA 2	60+	1: 17 or below

Appendix: Brite Application Ratios

Detergent Used	Application Site	Number of Drops (for 20 mL** sample)	Desired Ratio
Tommy Brite (C-T-Bodysoap-30)	Rainbow	15-28	1: 120-240
	Combo 1 Leg 1&2	9-15	1: 240-400
	Red Hot	15-28	1: 120-240
	Combo 2 Leg 1&2	7-12	1: 300-500

Detergent maintenance

It is very important to perform regular maintenance and preventative maintenance on your detergent systems. Doing so will ensure wash quality remains consistent and optimal, your cost per car remains accurate, and prevents future failures of miscellaneous parts and equipment. Here is a list of common maintenance items you should perform on your detergent functions:

- Replace detergent draw lines on a routine basis. When you notice draw lines begin to get discolored from prolonged detergent exposure (typically turning brown or black), begin to swell or get enlarged, become stiff, or begin to break down, you need to replace them immediately with new lines as pieces of the old line will begin to flake off into the detergent totes, preventing them from drawing consistently. We sell replacement draw line on the Tommy store under part number: P-CHE-2163.

(P-CHE-2163)

HOW TO REPLACE FOOT VALVES, WEIGHTS, AND DRAW LINES

- Check Metering Tips and twice per week (or when you notice a diminishment in wash quality for one or more applications) for clogs, tip discoloration, and loss of suction. Clogged Metering Tips can reduce detergent cleaning power, dry quality, etc. If you notice these problems, please replace or clean out the Metering Tip immediately. If you still are having drawing issues, you may need to consider cleaning out your foam inserts, decreasing the air for the detergent function experiencing the issue,

or unclogging the stainless-steel tubing and lines by running an ear plug through the lines and out of the other side. Spare Metering Tips can be found on the Tommy webstore under part number: P-HFI-261.

HOW TO CHECK AND REPLACE METERING TIPS

(P-CHE-2003)

(P-CHE-2106)

- If you disconnect a drawline from its injector and the product immediately falls from the draw line back into the tote, this means your foot valve has gone bad and should be replaced. Foot valves and Stainless-Steel weights should be inspected regularly, as foot valve screens can go bad which will allow debris that has settled at the bottom of the tote to be sucked up by the injector. Stainless-Steel lines can also corrode over time which will get into your products. Spare foot valves can be found under part number: P-CHE-2003 and spare Stainless-Steel weights can be found under part number: P-WAT-2106.
- Check VersaDials once per week (or when you notice a diminishment in wash quality for one or more applications) for clogs and loss of suction. Clogged VersaDials can reduce detergent cleaning power, dry quality, etc. As a rule of thumb, VersaDial pre-filters that are exposed to harsher products like Tommy's Express #1 (Presoak) should be swapped out once every 6 months and should be swapped out for all other products on an annual basis. Typically, the VersaDial device itself can last for roughly

250,000 – 300,000 vehicles. Spare VersaDial pre filters can be found on the tommy store under part number: P-HFI-267 and spare VersaDial devices can be found under part number: P-CHE-2172.

(P-HFI-267)

(P-HFI-2172)

- Flush Tommy's Express #8 (Tire Gloss), Tommy's Express #5 (Ceramic Body Wax), and Tommy's Express #6 (Tommy Guard) arches with hot water every night before closing. It is important to do this as these formulations can sometimes harden in lines overnight when the wash is closed, causing loss of suction issues. To do this, simply disconnect the draw line from its corresponding injector and turn the function to "manual" on the iPad. Run this for about two-three minutes to clear the lines and nozzles. When finished, turn the function back to "auto" on the iPad and reconnect the detergent draw lines.
- If a pod function is staying on after the output "shuts off" on the iPad, your Hydra Cannon has most likely gone bad and will need to be replaced. Above the injector is the black Hydra Cannon containing the Hydraflex Valve. Inside the valve is a plunger and large spring. Sometimes the large spring may be broken, or the plunger is too dry and sticking inside the valve. If that is the case, a replacement part will need to be ordered under part number: P-HFI-265, and the plunger will need to be lubricated with grease.
- If a detergent tote becomes contaminated and wash quality has been negatively effected, the tote needs to be fully drained and rinsed out before filling with the correct detergent.
- Routinely check nozzles and spray applicators for clogs or damage. If clogged, simply use air or a tip cleaner to remove the blockage. If damaged, replace it immediately with the same tip.

HOW TO INSPECT AND CLEAN NOZZLES IN THE WASH

- Foam inserts should be routinely checked and cleaned out on a monthly, or as needed basis. Detergent build up in foam inserts overtime can cause suction loss and wash quality issues. Once a foam insert has excessive build up and has lost some of its material, it should be replaced. Foam inserts can be found on the Tommy's store under part number: P-CHE-2140. Below, is a video tutorial on how to properly clean and replace foam inserts

HOW TO CLEAN AND REPLACE FOAM INSERTS

- Diaphragm Check Valves should be replaced if products excessively weep after the application shuts off. You can replace the rubber grommet if it is damaged which can be found on the Tommy store under part number: P-AIR-2265. You can also replace the entire Check Valve which can be found on the Tommy store under part number: P-CHE-2150.

(P-AIR-2265)

(P-CHE-2150)

HOW TO REPLACE CHECK VALVES

- It is important to have your chemistry dialed in so that water is beading up on the surfaces of vehicles as it enters into the spot-free rinse application before the blower room. Beaded water greatly assists in the drying process as the Tommy blowers can easily blow the beaded water off the surface of the vehicle. If you notice that the water on vehicles appear flat (pictured below), then you most likely have an issue with your chemistry, and your overall drying will be greatly reduced. Typically, you will need to re-dial in or unclog your drying agent Metering Tip to improve water beading. For flat water, you can also take a pH test to ensure your vehicles are coming out neutral at the end of the tunnel, as over application of high pH can sometimes cause vehicle's to

be unable to properly bead up and break. You should also check for proper suction at your injectors and VersaDial devices, as detergents not sucking into the lines can cause wash quality issues like flat water.

Safety

This section outlines critical safety protocols to ensure the well-being of team members while working in the Tommy Tunnel. Following these guidelines helps maintain a safe working environment and prevents accidents during operations and maintenance.

Safety with detergents – PPE to wear while in tunnel:

When handling detergents or working inside the tunnel, proper personal protective equipment (PPE) must be worn to minimize exposure to detergents and ensure safety. The SDS for detergents indicates hazards such as skin corrosion and serious eye damage, requiring specific protective measures.

Wear chemical-resistant gloves (e.g., nitrile or neoprene) to protect hands from skin corrosion caused by detergents.

- Use safety goggles or a face shield to prevent serious eye damage from splashes, especially during functions like bug spray or tire/wheel cleaning where overspray is common (see page 5).
- Wear waterproof clothing, such as a chemical-resistant apron or suit, to protect against splashes from detergents and water.
- Use non-slip, detergent-resistant footwear to prevent slipping on wet surfaces and protect feet from detergent exposure.
- If working in areas with potential inhalation risks (e.g., during prolonged exposure in enclosed spaces), consider a respirator with appropriate filters, as alkaline mists may cause respiratory irritation. Consult the SDS and a safety professional to determine if respiratory protection is necessary for your specific tasks.

PPE for detergent spill cleanup:

Detergent spills require additional PPE to protect against the identified hazards of skin corrosion and eye damage.

- Wear detergent-resistant gloves (e.g., nitrile or neoprene) to handle spilled material safely.
- Use safety goggles and a face shield to protect against splashes during cleanup, as the product can cause serious eye damage.
- Wear a full-body detergent-resistant suit to prevent skin contact with the detergent, which can cause severe burns.
- If there is a risk of inhaling detergent mists or vapors during cleanup, use a respirator with an appropriate filter. Ensure proper fit and training for respirator use.
- Use detergent-resistant footwear to protect feet from standing in spilled material.

What to do if detergent spills (cleaning up):

Detergent spills can occur during detergent handling or equipment maintenance. Prompt and safe cleanup is essential to prevent hazards.

- Immediately contain the spill using absorbent materials (e.g., spill kits available in the detergent storage room).
- Wear the PPE outlined above, including chemical-resistant gloves, goggles, face shield, and a full-body suit, to avoid skin or eye contact.
- Ventilate the area if the spill occurs in an enclosed space to reduce inhalation risks.
- Dispose of contaminated materials according to the Safety Data Sheets (SDS) guidelines (refer to page 55 for SDS details).
- Report the spill to a supervisor and document the incident for safety records.

How to use eye wash station:

Eye wash stations are critical for emergency response in case of detergent exposure to the eyes, which can cause serious eye damage.

- Locate the nearest eye wash station in the tunnel or detergent storage room before beginning work.
- If a detergent contacts the eyes, immediately proceed to the eye wash station.
- Hold eyelids open and rinse eyes with a steady stream of water for at least 15 minutes.
- Seek medical attention immediately after rinsing, even if irritation subsides.
- Ensure the eye wash station is tested weekly to confirm it is operational (refer to maintenance tasks in the Manager App, page 80).

Be mindful in the tunnel – be aware of what is going on:

The tunnel environment can be busy and hazardous due to moving equipment, water, and detergents. Staying alert is crucial.

- Always be aware of your surroundings, including moving belts, brushes, and vehicles.
- Listen for alarms or signals indicating equipment activation or malfunctions.
- Communicate with team members to coordinate tasks and avoid accidents.

Do not enter blower room without a wash stop pushed in:

The blower room contains high-powered equipment that poses a risk if entered during operation. The blower room contains high-powered equipment that poses a risk if entered during operation. It is imperative that the blowers be powered down before entering. The safety chain should always remain in place to indicate that the area is not safe to enter until blowers power down.

- Ensure a wash stop is activated to halt all tunnel operations before entering the blower room.
- Verify that blowers and other equipment are fully powered down before proceeding.
- Use lockout/tagout procedures if performing maintenance to prevent accidental startup.

Wear proper clothing:

PPE recommendations

- **Detergent-Resistant Gloves:** The SDS lists skin corrosion as a hazard. Nitrile or neoprene gloves are standard for handling alkaline detergents, as they provide a barrier against corrosive substances.
- **Safety Goggles/Face Shield:** The serious eye damage hazard necessitates eye protection. Goggles or a face shield are recommended to protect against splashes
- **Full-Body Detergent-Resistant Suit:** For spill cleanup, a full-body suit is necessary to protect against large-scale exposure to the corrosive detergent, which could occur during containment and cleanup.
- **Detergent-Resistant Shoes:** These protect against chemical exposure to the feet, especially during spill cleanup or when working in wet areas with detergent runoff.

Detergent ordering

Ordering detergents is a super simple process through the shop at tommycarwash.com. During your site start-up, a detergent specialist will walk you through placing your first detergent order. Here is the simplified process:

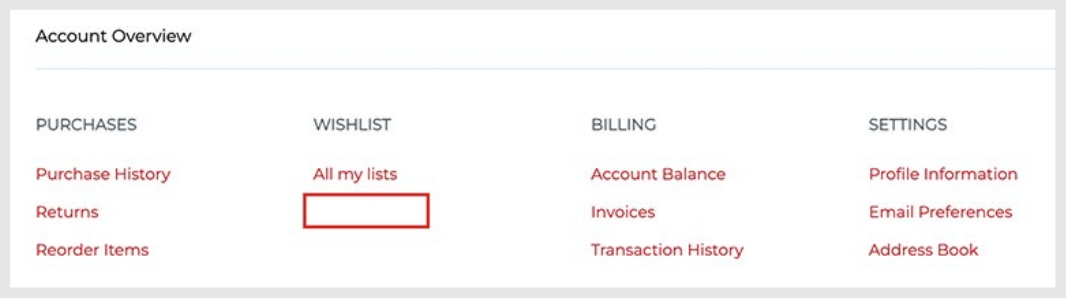
Step 1: Login to your store account on tommycarwash.com

Step 2: Click the "Shop" button at the top of the page

Step 3: Click on the dropdown tab at the top right of the screen, next to the red shopping cart

Step 4: This will pull up your account overview and a "My Detergents" link will be under Wishlist (it will be where the red rectangle is in the image below:)

Step 5: Click on the "My Detergents" link, then select how many of each detergent you would like to order - only your specific detergents will show up on the "My Detergents" tab.



Step 6: Once you are happy with the detergents in your cart, simply go through the shipping and payment options and place the order.

NOTE: Shipping cost for detergents is free when placing orders in increments of five 30-gallon drums, or four 30-gallon drums with 2-6 Easy Chem boxes.

Part ordering

Part ordering is as simple as being logged in to the Tommy store and using the search bar to find what you need. Here is a list of recommended spare parts to keep on hand at your wash.

Detergent Spare Parts List

Part #	Part Description	Retail Price
Detergent/Hydraflex Parts		
P-HFI-268-ST14	14 pack of standard metering tips	$15.50
P-HFI-268-UL4	4 pack of ultra lean metering tips	$15.50
P-HFI-268-SP10	10 pack of spiral plug tips	$81.70
P-CHE-2162	Remote Metering Tip Device	$59.00
P-CHE-2003	Blue Foot Valve	$13.35
P-WAT-2106	Stainless Steel Detergent Line Weight	$5.95
P-HFI-202-1	Single Metering Tip Injectors	$149.00
P-HFI-202-2	Dual Metering Tip Injectors	$249.00
P-CHE-2165	Single Versadial Injectors	$129.00
P-CHE-2175	Dual Versadial Injectors	$179.00
E-HFI-222	Vinyl Hose Barb Cap	$2.70
P-HFI-258	1/2" Quick Connect Check Valve	$13.99
P-WAT-3121	1/2" Poly Tubing 100'	$132.99
P-WAT-3122	1/4" Poly Tubing 100'	$13.99
P-AIR-2207	1/4" Muffler	$4.50
P-HFI-203	10 Port Pod Hydraflex Manifold	$5,040.10
P-HFI-267	1/4" Versadial Hose Barb Fitting	$37.34
P-CHE-2171	5 Pack of Versadial Filters	$249.00
P-CHE-2172	Versadial Device	$249.00
E-HFI-232	24V 5 Port Solenoid Bank	$686.99
P-HFI-265	Hydraflex Repair Kit for MAM Manifold	$114.90
P-HFI-243	Hydra Cannon O-Ring Replacement Kit	$99.00
P-AIR-2142	0-60 PSI Pressure Gauge	$13.10
P-WAT-2723	3/8" x 1/2" Male Tube Fitting for injector	$7.60
P-WAT-2724	3/8" Female Elbow for injector	$5.62
P-HFI-239	Air Actuated Hydra-Flex Cannon Valve	$299.00
P-CHE-2163	100' of Chemical Draw Line	$55.50
P-HFI-263	Hydra-flex ManifMAM old Replacement	$345.50

E-SE-2057	1/3HP Detergent Transfer Pump	$638.99
E-BCT-201-A	50 Gallon Bulk Detergent Tank	$324.25
Wash Quality Troubleshooting Parts		
P-HFI-264	Injector Optimization Tool	$177.60
P-WAT-2836	Digital TDS Meter	$31.99
P-SE-2178	Water Hardness Test Kit	$59.99
P-WAT-2686	Hand Held Chlorine Checker	$75.00
P-CHE-2143	pH Test Strips	$19.99
P-SE-POD-111	250mL Graduated Cylinder	$12.99
P-AIR-2298-A	Atlas Copco Oil Analysis Kit	$68.89
P-CHE-2139	Reclaim Magic Startup Kit	$91.00
Nozzles & Tunnel Application Parts		
P-CHE-2150	4psi Diaphragm Check Valve	$9.84
P-AIR-2265	Rubber Grommet for 4psi Check Valve	$2.48
P-WAT-2192	1/4" Stainless Steel Meg Nozzle for HPR	$4.54
P-WAT-2489	Pre Blaster Flare Nozzle - Pack of 2	$8.99
P-WAT-2490	1/4" Ball Connector for flare nozzle	$4.99
P-WAT-2243	Stainless Steel Tire Shine Nozzles	$12.45
P-CHE-2108	10e80 Nozzles	$3.04
P-CHE-2107	10e40 Nozzles	$2.45
P-WAT-2133	05e80 Nozzles	$3.04
P-CHE-2049	K-Nozzle for Tommy Guard	$20.60
P-M2086	Mitter Foaming Nozzle	$38.00
P-CHE-2107	Foam Generator Insert	$31.67
P-CHE-2132	Foam Generator Plug In	$155.00
P-CHE-2189	Pack of 10 Foam Generator Insert Pad	$18.15
E-F-RB-2-LR1-A	2 Row Rain Bar with Brackets	$560.00
E-F-RB-4-LR1-A	4 Row Rain Bar with Brackets	$720.00

Safety data sheets (SDS)

Safety data sheets are a breakdown of basic ingredients, handling and storage info, and safety measures to take while handling Tommy detergents. You MUST keep two copies of each SDS organized in a binder, one in your flight deck, and one in your dry back room. If OSHA ever visits your site, they will ask to see a copy of each safety data sheet. Here is a copy of each one of our safety data sheets:

- Tommy's Express #1 (Presoak): #1 PRESOAK
- Tommy's Express #2 (Lemon Scent): #2 LEMON SCENT
- Tommy's Express #3A (Tommy Brite A): #3A TOMMY BRITE A
- Tommy's Express #3B (Tommy Brite B): #3B TOMMY BRITE B
- Tommy's Express #4 (Vacation Scent): #4 VACATION SCENT
- Tommy's Express #5 (Ceramic Body Wax): #5 CERAMIC BODY WAX
- Tommy's Express #6A (Guard): #6A GUARD
- Tommy's Express #6B (Guard): #6B GUARD
- Tommy's Express #7 (Drying Agent): #7 DRYING AGENT
- Tommy's Express #8 (Tire Gloss): #8 TIRE GLOSS
- Tommy's Express #9 (Cloth & Window Cleaner): #9 CLOTH & WINDOW
- Tommy's Express #10 (EWF Cleaner): #10 EWF CLEANER

Assessing wash quality

PRESOAK	SCENT
TOMMY BRITE	CERAMIC BODY WAX®
TOMMY GUARD®	DRYING AGENT
SPOT FREE RINSE	TIRE SHINE

Presoak

Bug Blaster

Front Presoak + front Bumper Blaster

Ensure that the bug blaster application is completely covering front bumpers, running air through it on a foam insert to provide maximum coverage and so the product can stick to the bumper more effectively.

Presoak

The Presoak application is the first “show” the guest sees while going through the wash. This is a foamed application that is important to provide complete vehicle coverage with a thin layer of foam. This foam helps further break down organic material from the vehicle’s surface. We need to make sure all Nozzles are facing perpendicular to the vehicle and there are no leaks in the manifold or foaming generators.

Rear Presoak & rear Bumper Blaster

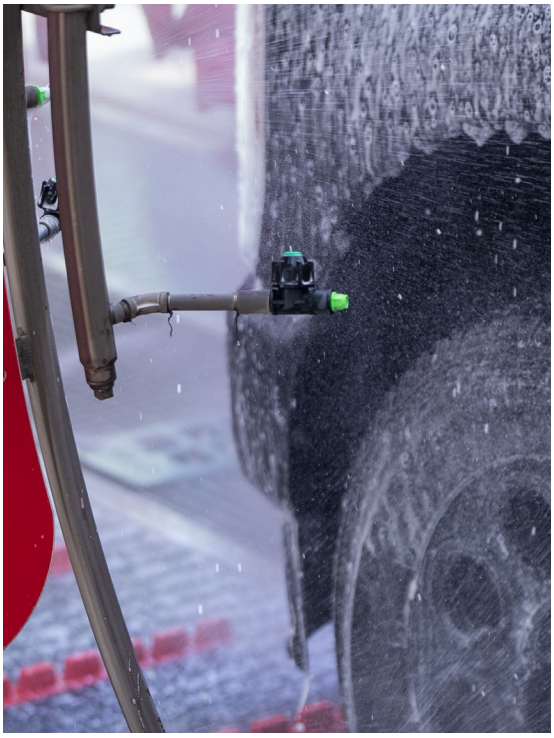
The rear Presoak and rear Bumper Blaster manifolds are designed to apply Presoak to the rear of the vehicle. There are many hard-to-reach areas on back ends (underneath spoilers, license plates, and under roof scoops) that need to receive full detergent coverage to help break down dirt and debris. These are the only applications in the wash that focus heavily on the rear ends - the rest is up to the friction of the wraps.

CTA 1

CTA 1 is applied to every vehicle to provide a base level of cleaning to the wheels. When checking for wash quality, timing is very important with how the CTA 1 turns on and when it shuts off. There is a small window for the function to provide complete coverage to the wheels. CTA 1 uses a large Metering Tip to provide a heavy amount of Presoak onto the wheels.

CTA 2

CTA 2 is applied to only the ULTIMATE and WORKS wash packages. A high concentration of Presoak is run through the foamer and sprayed onto the entire wheel. The foam helps break down brake dust and road dirt before applying friction. Timing is essential for this function, and the iPad settings should be set to start at tire pulse X and stop after 2-4 seconds. It is necessary to have the start pulse set to “tire” so both tires receive the application.



Scent

Tommy's Express #2 (Lemon Scent) is dual injected on the front Presoak application and Tommy's Express #4 (Vacation Scent) is dual injected on the drying agent application. When it comes to the amount of usage for these two applications, it is preference based on how strong you want the aroma to be. The scents should penetrate the air intake in vehicles. It is important that guests turn their front windshield air on and air circulation button off to receive the full effect of both aromas while in the tunnel.

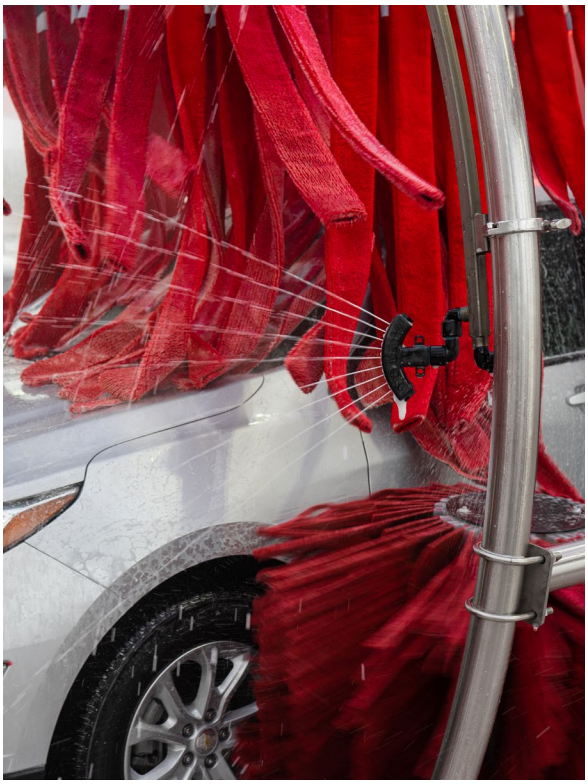
Tommy Brite

Rainbow Coat

Rainbow Coat is the first introduction of Tommy Brite (low pH) in the tunnel. This function is prominently used for its “show” in the wash. A small Metering Tip such as a Lime can be used since guests look for the high level of foam and flashing rainbow lights while going through the tunnel.

Combo legs

All four combo legs run Tommy Brite through the arches. All C-foamers and Nozzles must be sprayed to lubricate the wraps and NOT just apply to the vehicle. If the wraps are not getting properly lubricated, they can begin to haze the sides of vehicles and paint surfaces. The second combo leg (Combo 1 leg 2) is used as the “neutralizing” leg. This is the leg where we see the pH level of the vehicle go from ~12 (high pH) down to ~5 (low pH) from the Tommy Brite.



Red Hot Cleanser

Red Hot Cleanser steals the show of the whole wash. With the red underglow and the sheeting effect, the mesmerizing coat is designed to coat the vehicle's surface thoroughly. This function also uses a low pH to continue breaking down dirt and surface debris, followed by the friction of the mitters, rockers, wraps, and reverse huggers.

Note: Overall sheeting is controlled by metering tips and air pressures. Sheeting effect can vary from site to site and may require dialing in.

Ceramic Body Wax®

This product is applied evenly through a Tommy's rain bar utilizing foam inserts to maximize show and performance. Its design provides an even foam layer on the surface of the entire vehicle. The vehicles' shine and smooth surface need to be investigated with wash quality. The difference can truly be felt when it comes to Ceramic Body Wax®!

Tommy Guard®

Tommy Guard® is applied just before the drying agent and needs to provide a “milky white” coat to the vehicle’s surface. All K-Nozzles must be firing a full fan. If this is not the case, you may need to try several potential fixes, such as: cleaning out the ladder rack lines going to the arch from the pod, replacing the 4 lb. Check Valves on the nozzles, or increasing the injector size from a 2.25 GPM to a 3.25 GPM injector.

Drying Agent

Drying Agent is the easiest function to watch for wash quality. All nozzles need to be spraying a full fan, and the function needs to turn on and shut off when it is supposed to. If the nozzles are continuously dripping after the function shuts off, the Check Valves need to be replaced. If you notice the water on the vehicle surface is not beading up and rolling off the vehicle - the water looks “flat” and is sticking to the surface - then the metering tip may be clogged, or you may have to increase the metering tip size.

Spot Free Rinse

Spot Free Rinse is the final water rinse before the vehicle enters the blower room. The water needs to bead up and easily roll off the vehicle surface going into the blower room. If vehicles have "spotting" (dried water spots left on the vehicle surface, especially on the windows), there may be an issue with the RO. A TDS test can check the total dissolved solids in the water coming out of the Spot Free Rinse arch. If the TDS is above ~25, this may lead to excessive spotting.

Tire Shine

Tire Shine is applied at the end of the blower room. This is the most difficult to maintain and the most visible if it is not kept clean. All 16 Tire Shine Nozzles must be firing adequately towards the center of the tire shine brush. They each are attached to a 4 lb. Check Valve. It is highly recommended to flush out the Tire Shine function with water every night. Disconnect the Tire Shine draw line from its corresponding injector in the detergent pod, then turn the function to “manual” from the iPad for about five minutes. When finished, turn the function back to “auto” and plug the draw line back into the injector. This process will keep the line and nozzles much cleaner and free of debris in the long run.

Both tires should have a full glossy appearance with no missed sections when looking at wash quality. If vehicles receive tire “sling” (black liquid slung up from the tires and onto the car’s sides), you may be using too much tire shine.

Zendesk & Manager App

Tommy Car Wash Systems has a library of maintenance tutorial videos readily available for our Tommy's Express franchises. These videos are great resources for our partners to use when attempting to complete preventative maintenance tasks on-site. These training materials are regularly updated with new additions and edits. Click below to access the full library of these videos and other important troubleshooting documentation.

VIDEOS

These videos are also embedded straight into the Tommy's Manager Application, which is readily available in the "Tasks" section of the platform.