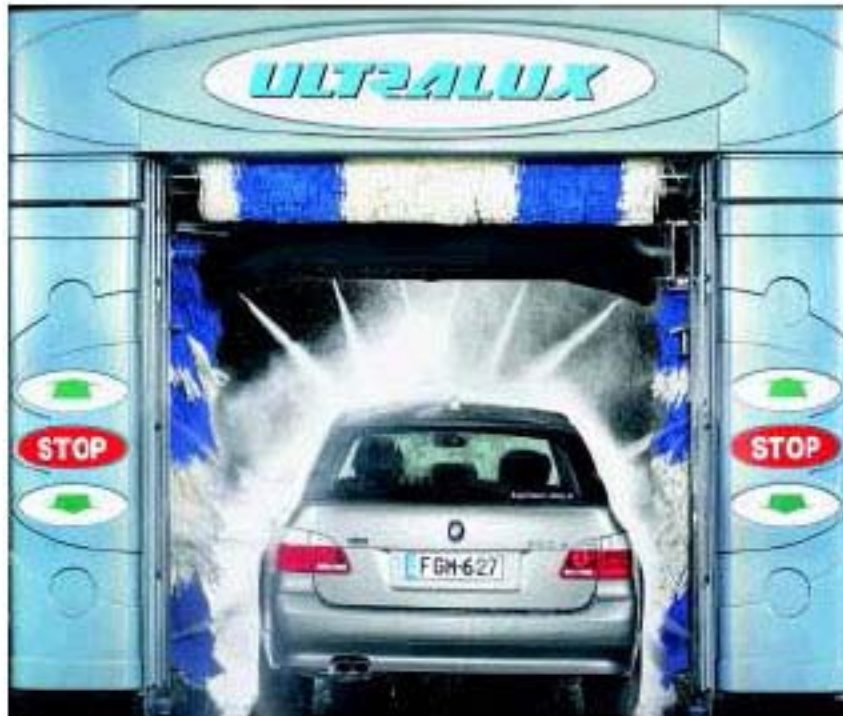


The Car Wash Range



Cleaning and Polishing Machine



Combi Machine



Brushless Machine



Innovations for car wash pioneers

Innovations for car wash pioneers

Managed by entrepreneurs, and with a wealth of international knowledge and experience, Tammermatic has been developing, producing and marketing vehicle wash machines since 1966.

The product range includes vehicle wash systems for cars, vans, buses, trucks, coaches, streetcars, HAVs, tankers and railway rolling stock.

Tammermatic has delivered vehicle wash systems to 70 countries and has a presence in every continent.

The challenges from worldwide installations, combined with the unique and harsh washing conditions within the Nordic countries, have been major factors in the development of Tammermatic's present, state-of-the-art car wash product range.



Invest in customer satisfaction

Choose Tammermatic

Value for money

Customer satisfaction has a significant impact on market menu prices and customer loyalty. High menu prices call for high-quality wash results as quality-conscious customers demand value for money.

More choice for the customer

Tammermatic's cleaning methods have been designed with customers' preferences in mind.

A large number of vehicle owners are concerned about brush contact; therefore many favour the brushless wash.

Conventional fibre washes are still widely used, as the wash quality is less sensitive to prewash applications and longer periods of time between washes.

Combination washes produce cleaner cars than brushless or brush washes alone. Combination washes with soft

brushes are currently the most popular cleaning methods, especially in high menu price countries.

The comprehensive range

To fulfil the needs of various marketplaces, and to satisfy different customer demands, Tammermatic offers an upgraded range of models for each market sector:

UltraLux **Cleaning and polishing machine**
Ultra **Combi-machine**
UltraJet **Brushless machine**

Advanced cleaning methods, together with tailored wash programs, enable machines to produce outstanding wash results in each category and in extreme cleaning conditions.

All models are available in single and dual gantry configurations.

Peak capacity - The key success factor

Today, forecourts offer a wide range of automated car wash services, from a basic brush wash to detailed combination washes with wheel and undercarriage cleaning, buffing treatments, etc.

Increased demand for, and the supply of, extra services has increased the scale of menu prices. Prices of top treatments can be as much as three times more than basic programs.

Therefore peak capacity should not be defined only as cars per hour, but as

revenue per car per hour multiplied by cars per hour.

The Ultra range offers high revenue possibilities, as the machines are top performers in terms of both wash speed and quality.



Faster cycle times

The new Ultra range features faster cycle times. E.g. combination washes take 10-12% less time than with previous models. The timesaving are gained by shortening duration of various idle and auxiliary motions.

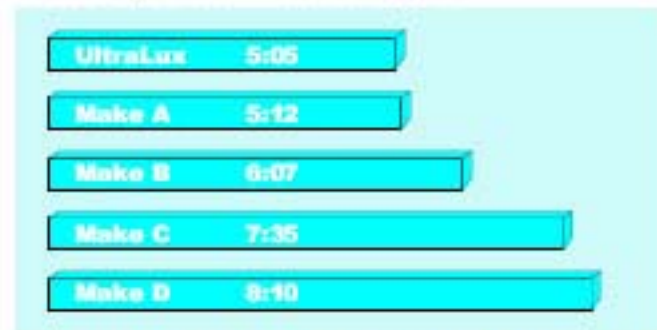
Typical cycle times

A brush wash and drying: about 3½ minutes.

A quality combination wash, including chemical prewash, high-pressure washing, soft brushing, waxing and drying: about 4½ minutes.

A complete 'Total Care' wash with all options (prewash, foam, top and side high-pressure washing, wheel and chassis wash, soft brushing, waxing, buffing and drying): about 9½ minutes.

Cycle time comparison of various makes with similar functions, vehicle: Renault Laguna



Program: prewash (front, sides and rear), foam, HP- sides, brush wash, rinse-aid and double drying.

Advanced cleaning methods

The **chemical prewash** is a key element in producing a high-quality wash result. It reduces both chemical and physical bondage between dirt particles and vehicle surfaces, facilitating the removal of even stubborn dirt. Tammematic introduced the first automated prewash systems more than 30 years ago; since then, Tammematic

has been the leader in the development of prewash systems.

Available on all models: pivoting side prewash nozzles, foam application and 2 pumps that apply various prewash chemicals (e.g. for degreaser and traffic film remover).

UltraLux & UltraJet models - Special features

* *chemical prewash application with pressure booster for intensified results*

* *prewash arches with additional nozzles for vans*



* *chemical pre-treatment for rims and hubcaps (wheel prewash)*



* *prewash nozzles on a profiling rotary head - enable additional front and rear vehicle coverage for extreme cleaning conditions*

High-pressure washing

Today's vehicles have a number of areas beyond the reach of brushes; therefore high-pressure washing plays a major role in brushless wash as well as in all modern car cleaning processes.

Additionally, the high-pressure water jets remove sand and other coarse particles, which could potentially scratch vehicles during the brush stage of the wash.

The Ultra range utilises both the conventional flat spray pattern and advanced solid stream pattern techniques.

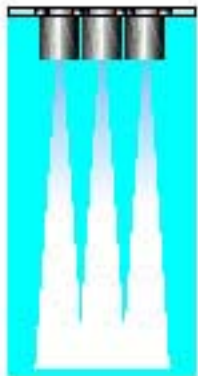
Ultra

- features high-impact, flat spray high-pressure nozzles
- nozzles are situated on a profiling rotary head and pivoting side arches.

UltraLux & UltraJet

- electric motor-driven, oscillating far-reaching solid stream nozzles utilise a double coverage sweeping technique
- nozzles are situated on a profiling rotary head and pivoting side arches
- side arches can be equipped with additional high-pressure nozzles for vans.

Solid stream nozzles for far-reaching cleaning power



A flat spray pattern is ideal over short and medium distances. However, a solid stream spray pattern is more effective over greater cleaning distances. UltraLux and UltraJet machines feature high-pressure spray units with 3 parallel, solid stream nozzles. The water jets form a uniform impact area on the target surface.



Double Coverage Sweeping Technique for enhanced cleaning

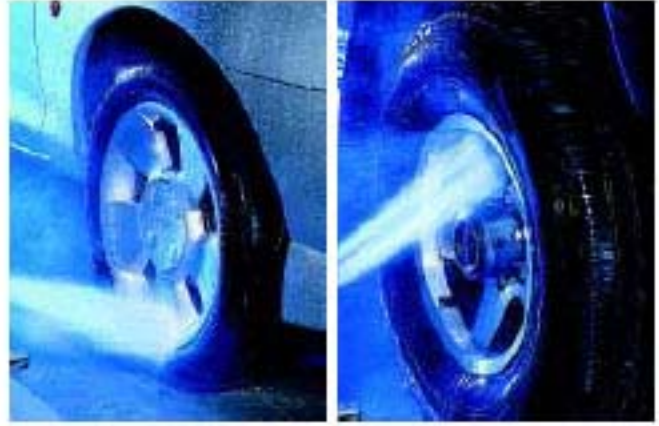
For enhanced cleaning, the high-pressure side water jets oscillate up and down so that they overlap each other. Similarly, the high-pressure water jets on the rotary head oscillate sideways.



Wheel wash - gentle, yet effective

In a quality wash, wheel cleaning is an essential and demanding task. The wash system has to treat plastic hubcaps gently, but it must also be capable of removing stubborn dirt, brake dust and dried mud from alloy wheels and rims.

Tammermatic's wheel washing system does both effectively. The oscillating water jets, featuring solid stream nozzles, clean thoroughly the low-profile wheels of modern cars as well as the large wheels of 4WD vehicles. The wheel wash units can be connected to a common pump of the high-pressure system or to a separate pump.



Chassis/sill wash - cost-effective/low maintenance feature



Ultra machines are available with onboard chassis/sill wash equipment.

The under-chassis water jets accurately target the sills, wheels and wheel wells, in addition to the underside of the rear bumpers.



Tammermatic's onboard chassis washer is a cost-effective construction, which uses the high-pressure pump and the microprocessor controller of the gantry. No additional pumps, control circuits, motor starters, external wiring,

plumbing or construction work for channelling or embedding water pipes are needed. The onboard equipment also offers trip-hazard-free floor space and ease of wash-bay/sand trench maintenance.

Precision brush control - safe and accurate cleaning



The brushes follow accurately and safely the contours of modern vehicles. Interpolating power measurement and automatic calibration reduce maintenance calls for readjustments and ensure steady brush pressure regardless of voltage and ambient temperature fluctuations.

Side brushes with a 2-way tilting feature clean both the upper and lower sides of vehicles more thoroughly. During the forward pass, the brushes are tilted inwards to fully



contour the sides of vehicles more thoroughly. If the brushing action is also configured for the return pass, the side brushes are tilted outwards. This ensures safe bypassing of the side mirrors and thorough cleaning of the sill area.

The top brush control system includes override programs for pick-up trucks and vehicles with ski-boxes.

General Feature

Hotdip galvanised steel frame

Front panel designs can be customised to comply with customers' corporate image

Attractive decorative panels with new customer-appealing designs

For optimum drying results, the profiling horizontal dryer vent is situated in the rotary head to optimise the impact airflow angle

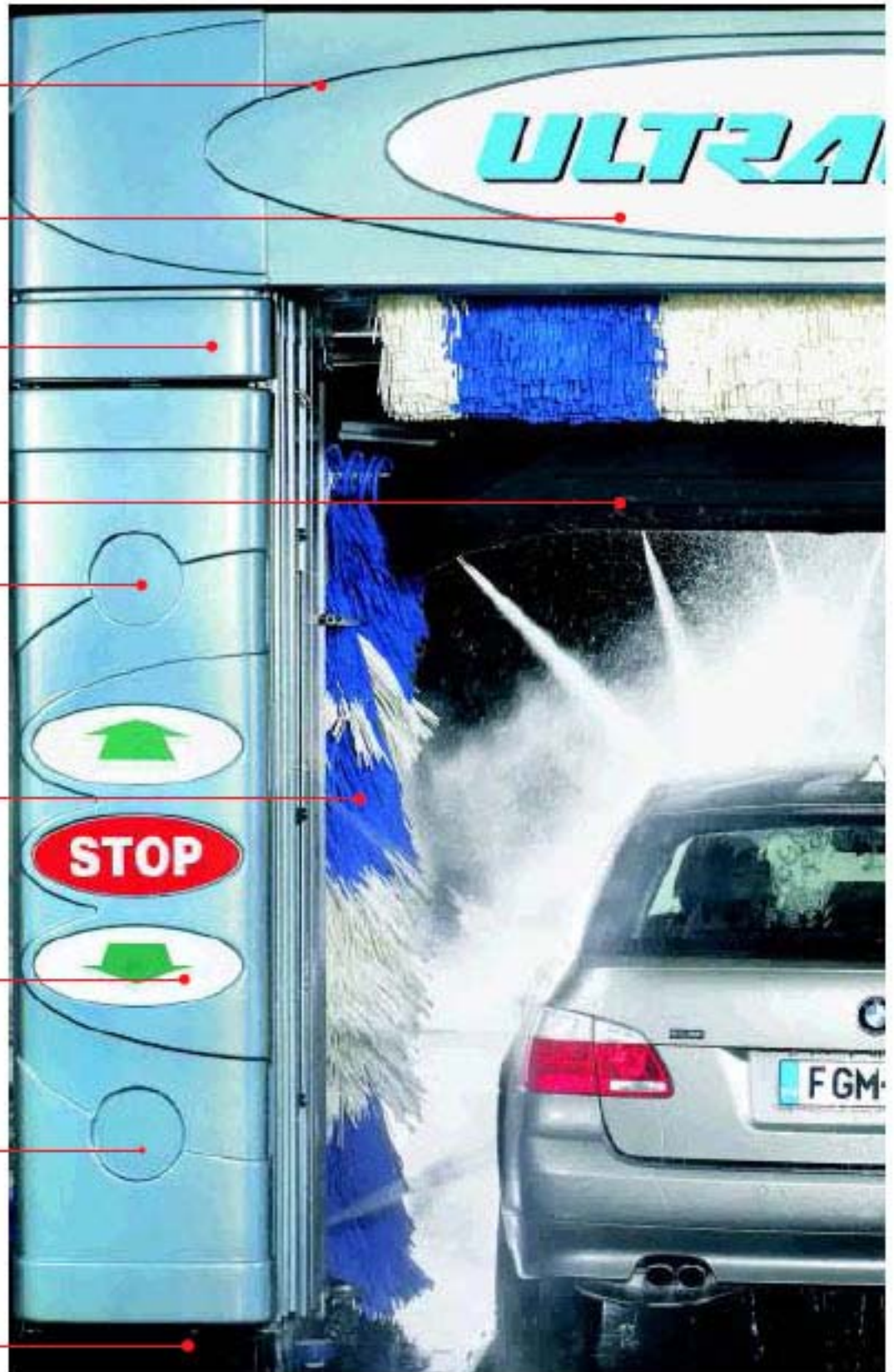
Recess for maximum wash height decal

Panels and brush colours available in several customised finishes

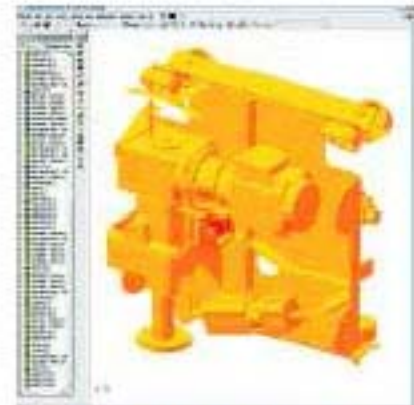
Positioning control and auto-start. Bright LED signal lights available as an option.

Recess for maximum wash width decal

Touch sensitive-safety flaps



s and Highlights



AutoCAD/Inventor 3D solid modelling based engineering



Easily programmable menu; for each pass, main and parallel functions, as well as speed references, can be set



Bright LED signal lights available for open-air and other sun-light-exposed sites

General Features

Rain covers and anti-freeze system for open-air installation

Decorative plastic overhead rear panel

Contouring top brush with interpolating power measurement control

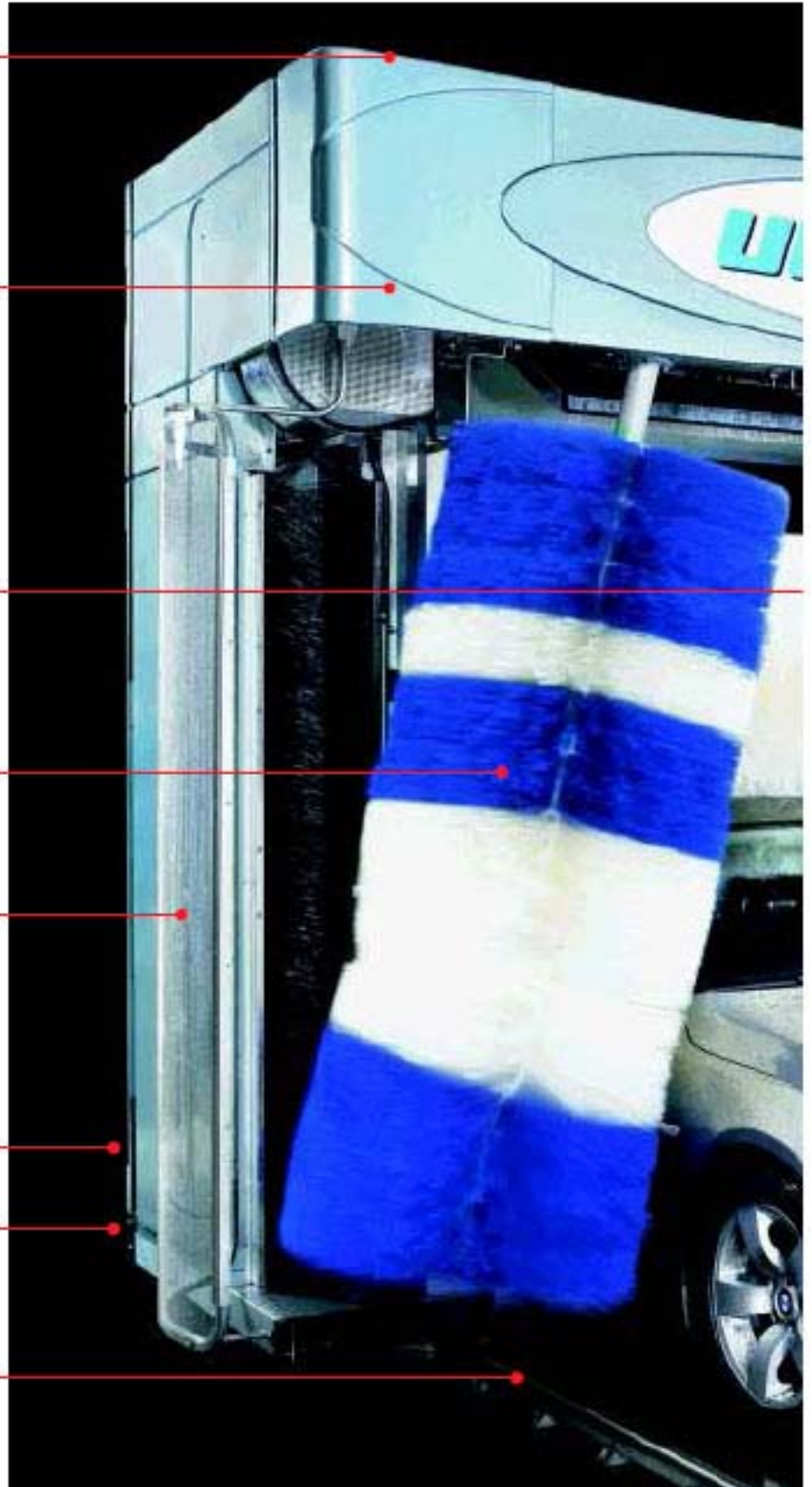
Wraparound side brushes with crossover and 2-way tilting feature

Transparent splash guards

Lift and gantry travel machinery with AC-inverter drives.

Derailing locks

Standard or stainless steel running tracks



s and Highlights



For increased air speed and pressure with less electric power, compared to conventional air vents, booster manifolds are situated in discharge openings of the dryer vents.



Tammermatic is regarded as a pioneer and leader in car wash automation.



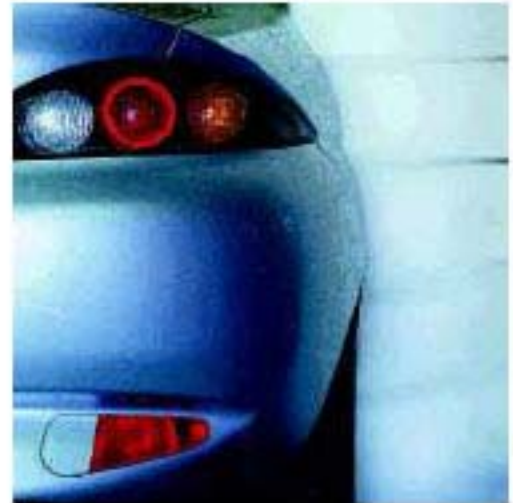
The first microprocessor controlled car wash machines were introduced more than 20 years ago.

Buffing programs for lasting protection

UltraLux and Ultra

Before drying, vehicles are coated with a mixture containing special wax and then buffed with a brush.

This gives vehicles a durable and dirt-repellent layer of protection. The high-quality finish is as a result of the thorough initial cleaning with the finest available washing methods.



Typical optional equipment

- * touch-sensitive width and height bars
- * HP-equipment with 11 or 18.5 kW pumps
- * HP-rinse arch, with or without 4 kW pump for water recycling applications
- * LP booster pump 1.5 kW
- * water recycling provisions
- * RO-water arch with motor starter 1.5 kW
- * water softener
- * floor cleaning program
- * blower units (3x4 kW) with across-line or soft-start
- * service number systems with in- and outdoors displays

- * remote control push-button station
- * wheel guiderails
- * galvanised or stainless steel running tracks
- * extra traffic-light fixtures for washbay entrances

Cycle Initiation Devices

- * code system
- * single card device
- * single and serial card device
- * single, serial and prepaid card device
- * push-button stations for manual cycle start for 8 or 15 programs.
- * safety guards for cycle initiation devices



Machine-specific features and functions

Feature / function	UltraLux	UltraJet	Ultra
Prewash with 2 chemicals	available	available	available
Foam application	available	available	available
Additional prewash nozzles for vans	available	available	not available
Wheel wash chemical application	available	available	not available
Prewash from top follower	available	available	not available
Prewash from pivoting side-spray banks	available	available	available
HP nozzles	solid stream	solid stream	high-impact
HP application technique	pivoting & oscillating	pivoting & oscillating	pivoting
Additional HP nozzles for vans	available	available	not available
Onboard chassis/sill wash	available	available	available
HP wheel wash	available	available	available
Brushes	Carlite	not available	Carlite or fibre
Buffing/polishing program	available	not available	available
On-site wash program customising	standard	standard	standard
Diagnostic and test programs	standard	standard	standard

ULTRA

Modern combi-machine - the result of decades of experience

The Ultra is the result of decades of experience and modern engineering methods. Customers can choose either fibre or soft brushes and it comes equipped with a buffing program and several useful options for specific needs.

Flat spray pattern, high-pressure water jets for widespread cleaning

Water jets, situated in pivoting vertical side arches, effectively clean the front and rear corners as well as the sides and wheels of vehicles.

The front, top and rear surfaces, from bumper to bumper, are cleaned by high-pressure water jets from nozzles situated in the profiling and rotating top follower.



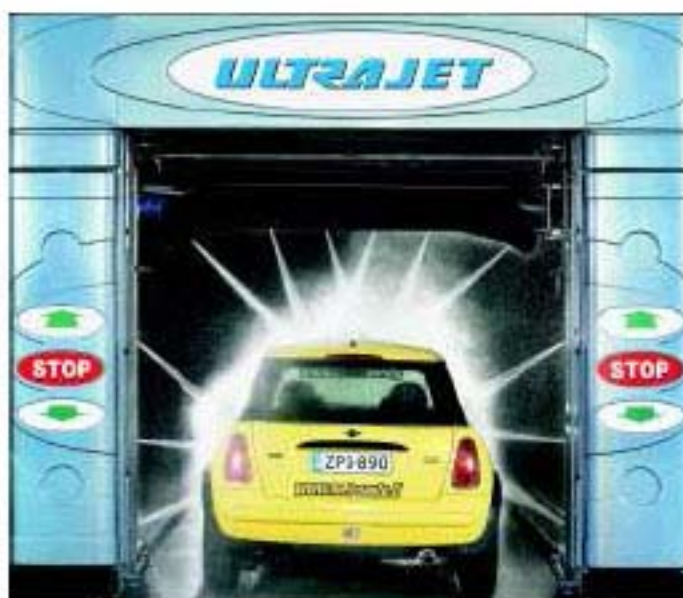
ULTRAJET

State-of-the-art brushless rollover gantry for precision cleaning

Vertically sweeping side jets clean the sides from sills to the roof. High-pressure water jets, from nozzles situated in the rotary head, clean the vertical and horizontal surfaces from bumper to bumper.

Rotational motions of the head, together with the lateral oscillating pattern, direct the far-reaching water jets into vehicle recesses that are beyond the reach of brushes.

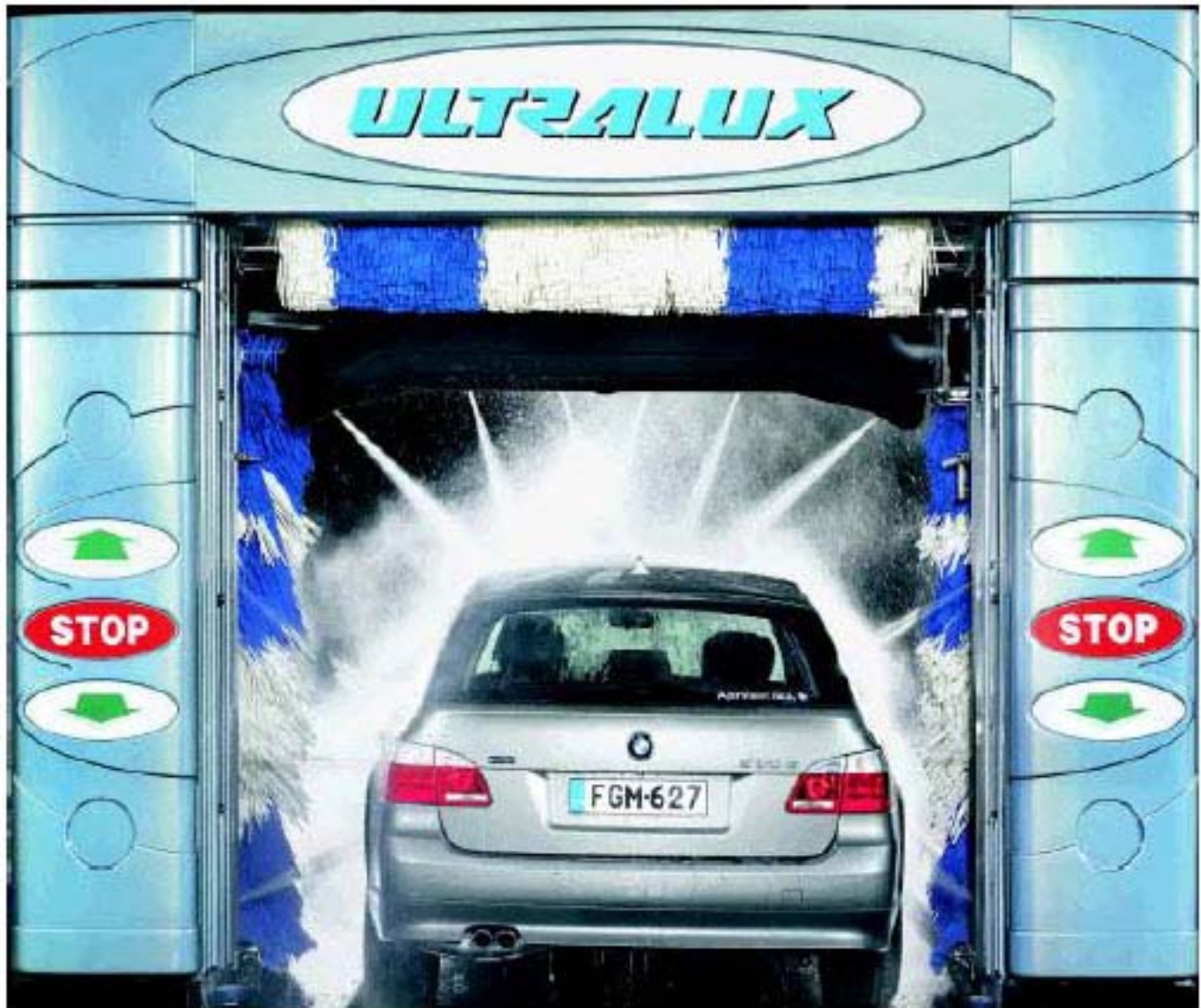
This enables precision cleaning of the vehicle's complex contours: grille, roof-rails and racks, ski-boxes, spoilers and skirt kits, trailer hitches, extra light fixtures, livestock guards, speciality rims as well as license plates, door handles and wind-screen wiper recesses.



The brushless wash meets the auto-manufacturers' recommendations for new vehicles and is ideally suited for brush contact concern motorists, pick-up trucks and 4WD vehicles.

ULTRALUX

For unique cleaning and polishing



UltraLux combines the outstanding brushless wash capabilities of UltraJet and the excellent brush wash features of Ultra.

Car wash sites in Nordic locations and in the Mediterranean region demonstrate that UltraLux meets all customer requirements for high-quality results combined with gentle cleaning methods regardless of climatic conditions.

All UltraLux operators have experienced high levels

of customer satisfaction leading to significant increases in revenue and customer base growth.

UltraLux is the choice of entrepreneurs who, in return for high-end menu prices, want to satisfy all customers' requirements and offer outstanding wash results.

The most versatile wash programs include state-of-the-art brush and brushless washes as well as unique Total Care polishing treatments.

Total Care polishing treatment step-by-step



Overall chemical prewash application

Chemical prewash for wheels

Foam application

Chassis and sill wash

High-pressure wheel wash



Overall high-pressure wash

Soft brush cycles

Polish-wax application

Buffing cycle

Air drying

Unparalleled cleaning power for heavily soiled areas

1. WHEELS

Chemical prewash from side spray arches +
Foam + Chassis wash +
Wheel wash +
High-pressure washing from side arches +
Cleaning action of side brushes.

2. SILL AREA

Chemical prewash from side spray arches +
Foam + Chassis wash +
High-pressure washing from side arches +
Cleaning action of side brushes.

3. REAR BUMPER AREA

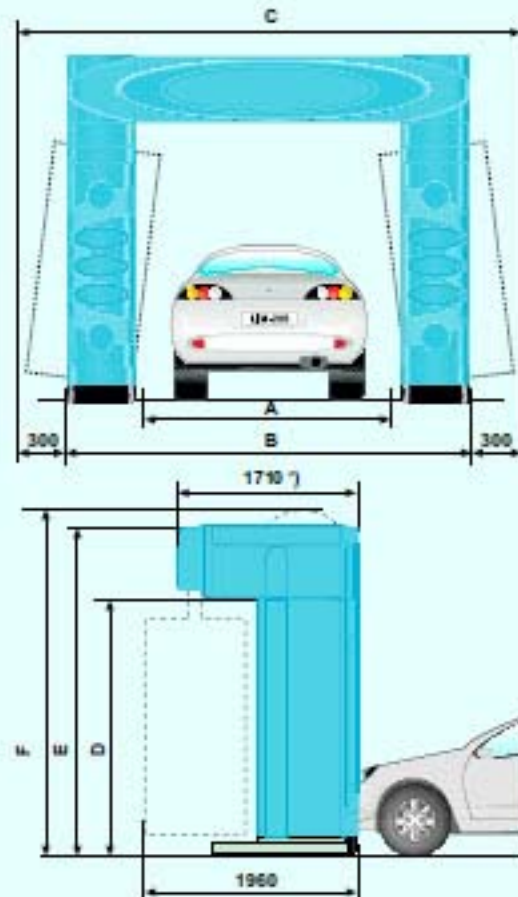
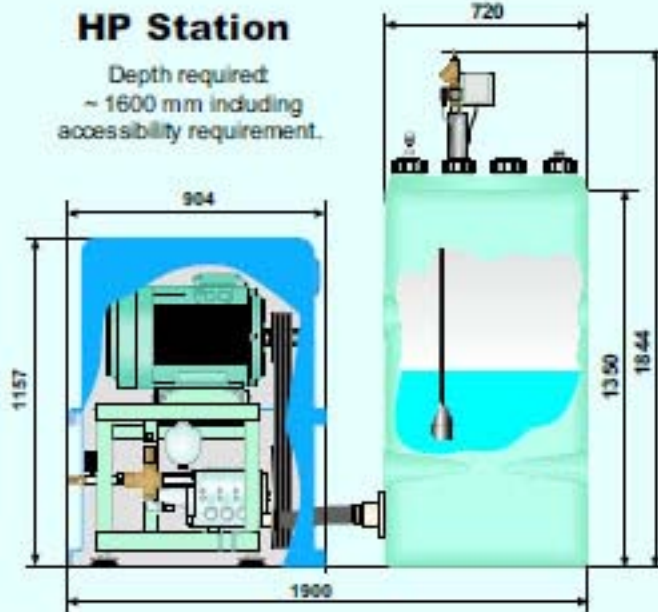
Chemical prewash from side and top spray arches + Foam + Chassis wash +
High-pressure washing from side and top spray arches + Cleaning action of top brush and crossover wash of side brushes.

4. VEHICLE REAR PART AND LICENSE PLATE RECESS

Chemical prewash from side and top spray arches + Foam +
High-pressure washing from side and top spray arches + Cleaning action of top brush and crossover wash of side brushes.



Dimensions and service connections



UltraLux & Ultra & UltraJet

Water supply: NS25, 3.5 bar, 35-100 l/min.
 Hot water supply: NS20, 3 bar, 35 l/min.
 Compressed air supply:
 NS15, 7-8 bar, 0.015 m³/min.

Power supply: 3NPE 400 V (or 415 V) 50 Hz.
 Back-up fuses
 3 x 63 A: water heater (2,7 kW) + 18,5 kW pump, 3 x 50 A: 18,5 kW pump,
 3 x 35 A: 11 kW pump.

UltraLux & Ultra

Recommended washbay length = vehicle + 4200 mm.

Minimum washbay length = vehicle + 3660 mm (safety distances excluded).

Track gauge = 2500 mm c/c (wash width 2200 mm) or 2700 mm c/c (wash width 2400 mm).

A = maximum wash width
 B = gantry width (w/o splash guards)
 C = washbay width (excluding safety distance)
 D = maximum wash height
 E = gantry height w/o running tracks
 F = minimum washbay height

	A	B	C
	2200 mm	3500 mm	4100 mm
	2400 mm	3700 mm	4300 mm
	D	E	F
	2250 mm	2950 mm	3150 mm
	2450 mm	3150 mm	3350 mm
	2650 mm	3350 mm	3550 mm

UltraJet

Recommended washbay length = vehicle + 3630 mm.

Minimum washbay length = vehicle + 2630 mm (no safety distances included).

Track gauge = 2500 mm c/c (wash width 2200 mm) or 2700 mm c/c (wash width 2400 mm).

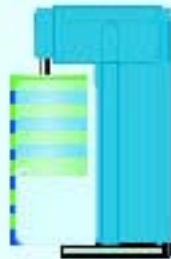
A = maximum wash width
 B = gantry width
 C = washbay width including safety distance (500 mm)
 D = maximum wash height
 E = gantry height w/o running tracks
 F = minimum washbay height

	A	B	C
	2200 mm	3500 mm	4500 mm
	2400 mm	3700 mm	4700 mm
	D	E	F
	2250 mm	2950 mm	3050 mm
	2450 mm	3150 mm	3250 mm
	2650 mm	3350 mm	3450 mm

***) Please note**

If a gantry is equipped with an overhead rear panel, the depth of the gantry is increased by 25 mm, which has to be taken into account in minimum washbay length requirements.

UltraLux Ultra Duo - dual gantries

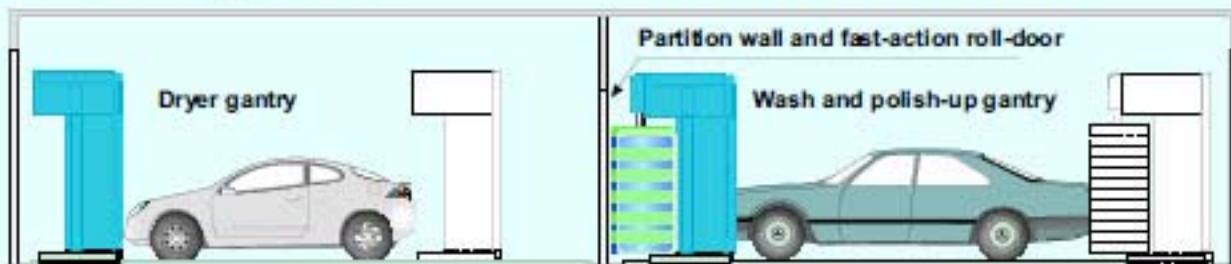


Recommended washbay length = vehicle length + 6500 mm. Minimum washbay length = vehicle length + 5970 mm (no safety distances included). Track gauge = c/c 2500 mm (wash width 2200 mm) or c/c 2700 mm (wash width 2400 mm)

A = maximum wash width	A	B	C	Power supply: 3NPE 400 V 50 Hz. Back-up fuses: 3 x 63A pump 18,5 kW 3 x 50A pump 11 kW. Back-up fuses are the same size for machines with or without water heaters (2,7 kW).
B = gantry width w/o splash shields	2200 mm 2400 mm	3500 mm 3700 mm	4100 mm 4300 mm	
C = washbay width incl. safety distance (500 mm)				
D = maximum wash height	D	E	F	
E = gantry height w/o running tracks	2250 mm	2950mm	3150 mm	
F = minimum washbay height	2450 mm 2650 mm	3150mm 3350mm	3350 mm 3550 mm	

Water supply: NS25, 3 bar, 35-100 l/min, Hot water supply: NS20, 3.5 bar, 35 l/min, Compressed air supply: NS15, 7-8 bar, 0,015 m³/min

Takt - dual gantries



L = vehicle length, S = thickness of the partition wall. All dimensions in millimetres.

Washbay lengths	Recommended	Minimum
Ultra Takt & UltraLux Takt	2 x L + S + 7830	2 x L + S + 6290
Ultra Takt Polish & UltraLux Takt Polish	2 x L + S + 8400	2 x L + S + 7320
UltraJet Takt	2 x L + S + 7260	2 x L + S + 5200
L = 5000, S = 100	Recommended	Minimum
Ultra Takt & UltraLux Takt	17930	16390
Ultra Takt Polish & UltraLux Takt Polish	18500	18420
UltraJet Takt	17360	15300

Power supply:

3NPE 400 V (or 415 V) 50 Hz.

Back-up fuses (all models):

Washer gantry:

3 x 50 A - 18,5 kW pump

3 x 35 A - 11 kW pump.

Dryer gantry: 3 x 35 A or
3 x 50 A (with water heater)

Washer gantry - All models:

Water supply: NS25, 3.5 bar, 35-100 l/min.

Compressed air supply: NS15, 7-8 bar, 0.015 m³/min.

Dryer gantry - All models:

Hot water supply: NS20, 3 bar, 35 l/min.

The most advanced management and control systems In the carwash industry

Tammermatic car wash machines are equipped with data entry and display boards (micro-terminals) as standard.

In monitoring mode, the terminal displays messages from the self-diagnostics system. It can also be set

to interactive mode for setting up and testing machines.

Various software packages are available to enable operators to monitor more closely their car wash business, either locally or remotely.

Software packages to control and monitor your business

Car wash server and monitor

Enables operators to configure machines, update control software, set up parameters, perform IO tests and tailor wash programs. Wash programs can be easily changed, even via e-mail.

Car wash IFSF

Certified by Sira Certification Service 19th June 2000.

Car wash GSM

Alarm messages can be transmitted via a PC program to GSM phones.

Car wash analyser

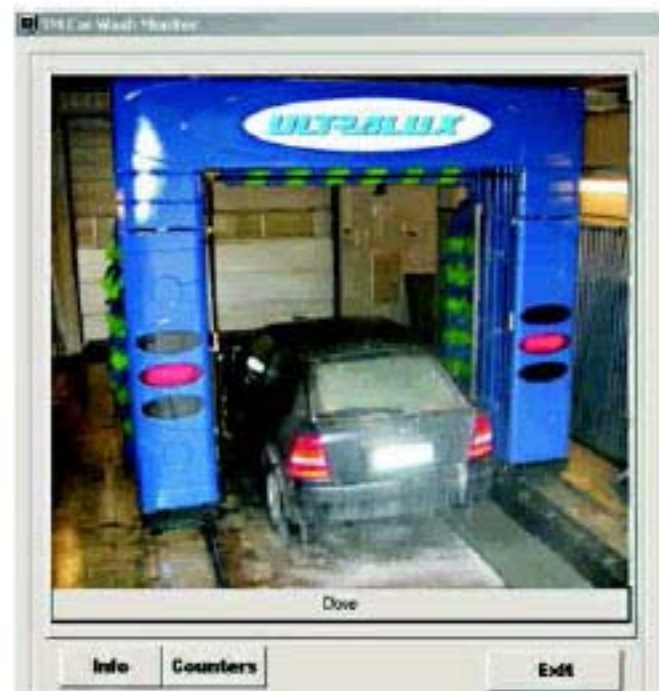
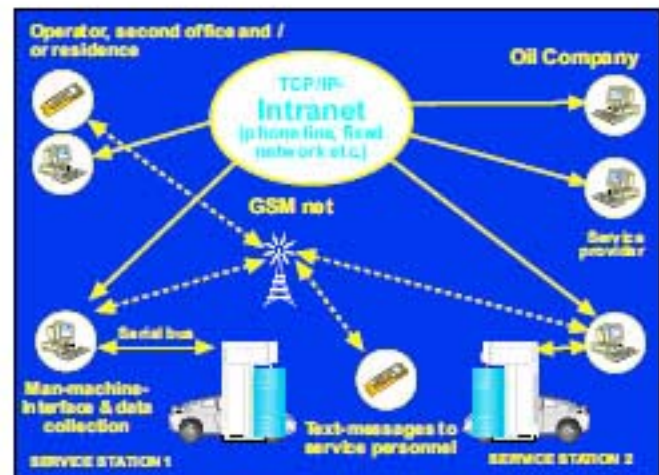
Produces a range of reports: wash program configurations, down/operating times, full capacity periods, summary and detailed lists of FAULT mode causes, wash statistics, summary reports (including trends and cycle times), distribution reports (displaying relative usage of configured wash programs), consumption figures (based on pre-defined values) and a service and maintenance logbook with event entries and reports.

Real-time surveillance enhances security

To enhance the security of car wash operations, a surveillance camera can be placed into the washbay and connected to the monitoring system. A business operator, and/or security agency, can visually monitor events in the washbay via a PC monitor window.

If necessary, the observer can interrupt the wash process in case of customer misuse or negligence. The system digitally records the last 5 wash events and all situations, which have activated the FAULT mode.

The monitor window of the PC displays alarm/error messages which can also be transmitted to 3 different GSM subscriber numbers.



TAMMERmatic

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