HYDRUS Tech

Description and technical features

The unit is a washing centre for vehicles with one mobile gantry . This means that the gantry roll over the vehicle several times to wash and dry it, whereas the vehicle remains stationary for the whole cycle time.

The process includes a first washing phase with rotating brushes, followed by the drying phase during which the water is blown away from the vehicle surface by means of high pressure air flows. The brushes action is supported by the distribution of water and wash chemicals. Before the drying phase some wax is distributed on the vehicle's in order to make the water flow and obtain a polish finishing of the surfaces.

In addition to the phases of washing and drying, the HYDRUS TECH unit can carry out other processes that can be generally summed up in:

- pre-washing phase
- polishing phase.

A complete washing process is carried out according to the following sequence of operations:

1. pre-washing
2. washing
3. polishing
4. drying

Each phase can be carried out in different ways.

The machine offers multiple choices also in the application of special products which help along the washing and finishing operation such as the pre wash cleaners, the waxes, the polishing products and the osmotic water.

The HYDRUS TECH units are equipped with options such as:

- systems for the distribution of hot/cold pre wash cleaner.
- Systems for the distribution of active foam.
- pre washing system with side and top high pressure water arches.
- pre washing system with side and top medium pressure water arches.
- Wheel-Master high pressure wheel wash.
- wheels washer with or without distribution of chemical product
- unit for the distribution of hot/cold and foamed waxes.
- unit for the distribution of polishing products.
- unit for the distribution of osmotic water.

A very important feature of HYDRUS TECH, on top of the quality and speed of the different operations, is the possibility to carry out these operations in the same run, for example:

- Side high pressure and Wheelmaster® together with the brush wash.
- Active foam together with the brush wash.
- Waxing together with the drying.
- Osmosis water distribution together with the drying.

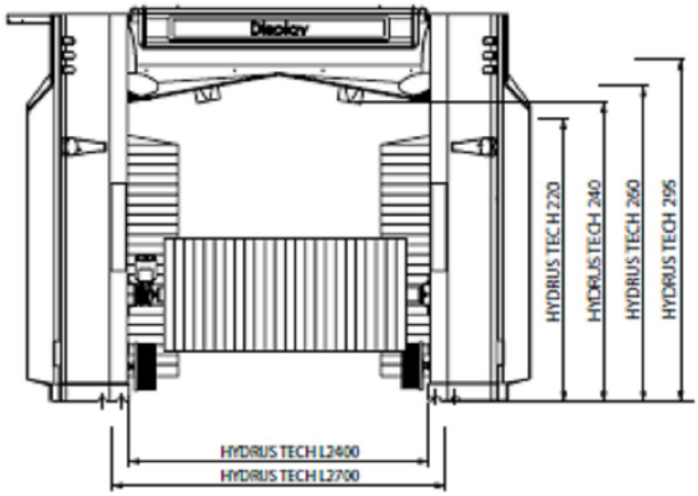
These features allow to shorten the cycle time, with a considerable increase of the unit capacity.

THE HYDRUS TECH RANGE HYDRUS TECH

is available in two versions. One version features the well known contour following top drying system; the other one is equipped with two oscillating drying blowers that are fitted on the gantry top cross beam. The “AirPlus” range includes all machines that are equipped with the oscillating blowers.

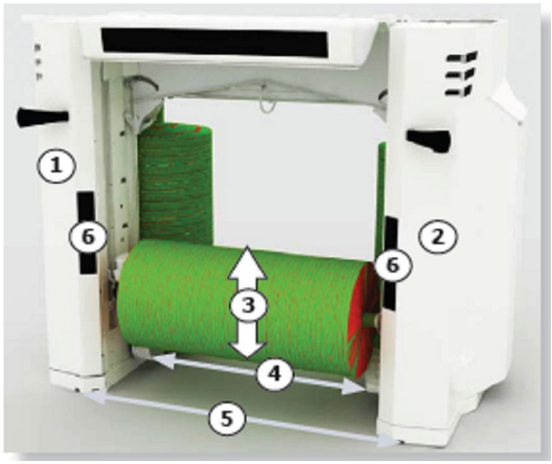
All versions can be supplied with different washing heights and widths, as shown in the drawings at the side and in paragraph 3.5.7

In the following descriptions of the machine operation mode and of the technical equipment, we will make reference mainly to the version with the traditional contour following drying system.



MAIN COMPONENTS

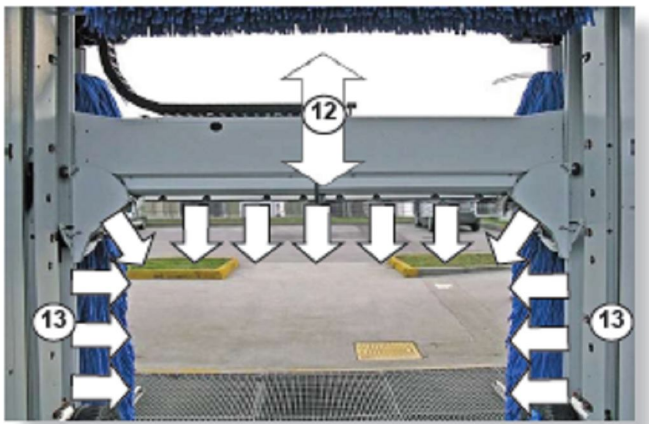
1. Gantry column containing the electrical cabinet
2. Column containing the hydraulic equipment
3. Top brush equipped with up and down movement (n. 1)
4. Wheel wash device, with rotating brushes (option)
5. Gantry rails (no. 2)
6. Signalisation and positioning device
7. Contour following top dryer with integrated blowers. The optional horizontal medium pressure washing arch can be fitted to the top dryer structure.
8. Side brushes (no. 2) with cross movement
9. Splash guards (no. 2)
10. Support frame of the cable and pipes energy supply chain.
11. Electrical box to connect the power supply and the external units.



12. The **PREMIUM CONTOUR FOLLOWING** drying system includes:

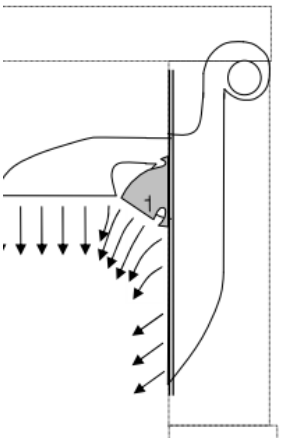
    A horizontal section with a moving bar at the side, able to follow the profile of the vehicle during movement of the gantry. The system consists of four electro-fans at low speed, high efficiency and low noise, two on side and two positioned at the

top. The drying bar at the top vent is equipped with the **TS D** system (see below) and it follows the contour shape of the vehicle during the drying operation and it is guided by means of photocells.
This lifting system is controlled by the inverter with toothed belt drive.

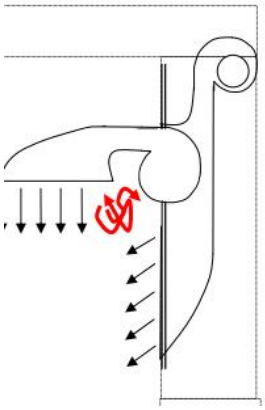


The **TSD system** (patented), installed onto the drying bar, increases the efficiency of the air flow . Nozzles can be fitted on the structure for washing at high or medium pressure.
TSD is a new system specifically designed to prevent the creation of turbulence caused by the interference of the air flows produced by vertical and horizontal fans.

This system produces a third stream of air that follows the shape and allows the "coverage" of the areas where "traditional" drying can not effectively dry.



TSD system



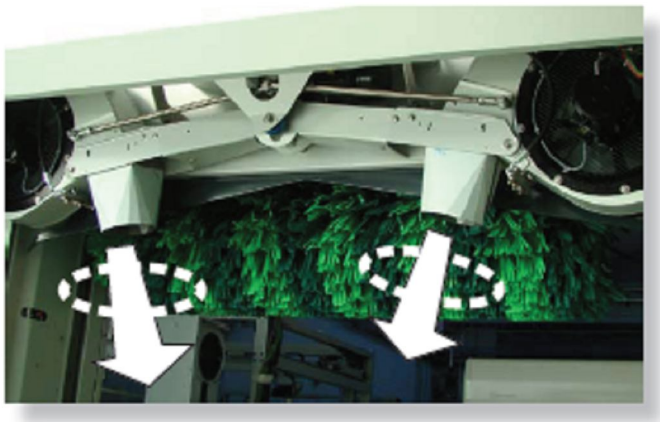
"Traditional" system

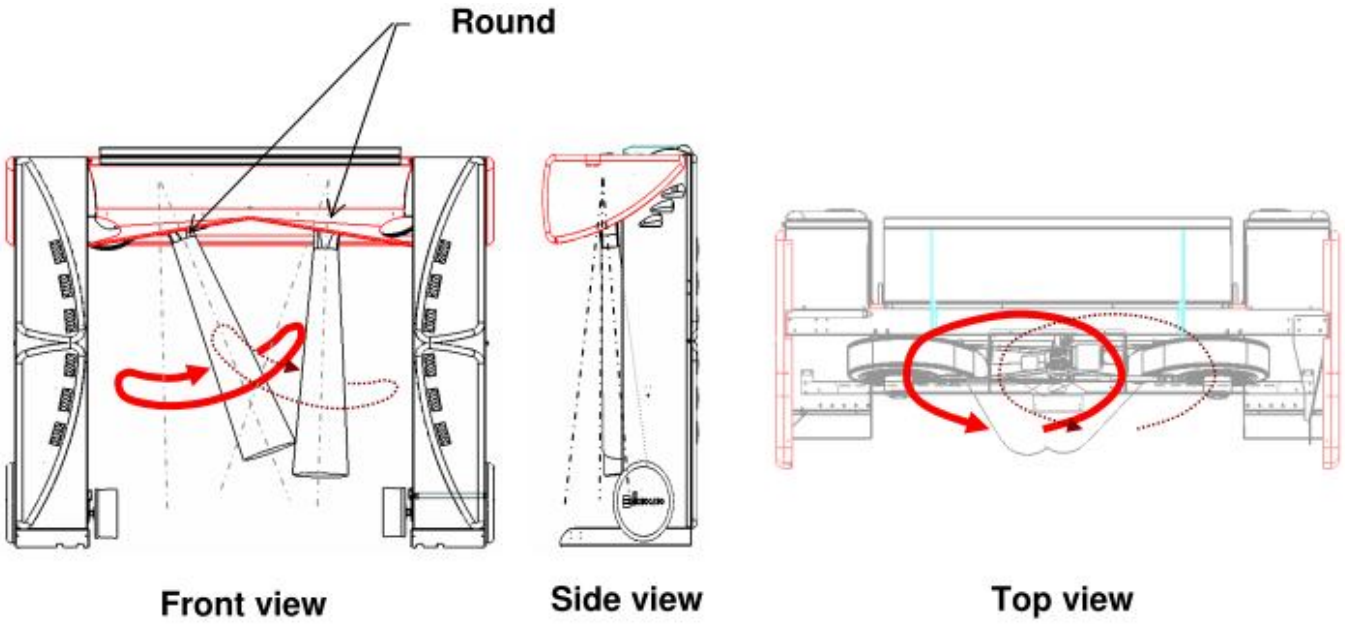
13. Side drying system, including two vertical nozzles. The side nozzles are embedded into the gantry columns and the air blowers are mounted on the top of the same columns.

HYDRUS TECH AIRPLUS

The **AIRPLUS** drying system includes:

1. Top section, including two oscillating drying nozzles, installed under the gantry top cross beam.
2. The vertical working group includes two side drying nozzles which are mounted on the opposite gantry columns. Each nozzle is equipped with one air blower, fitted on top of the relevant gantry column.



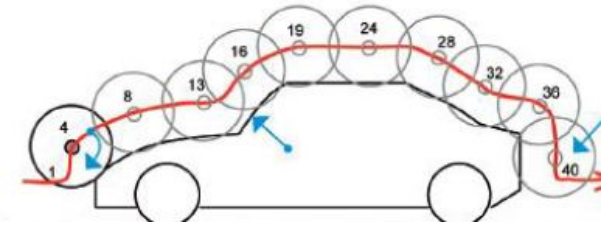


SMART TOUCH

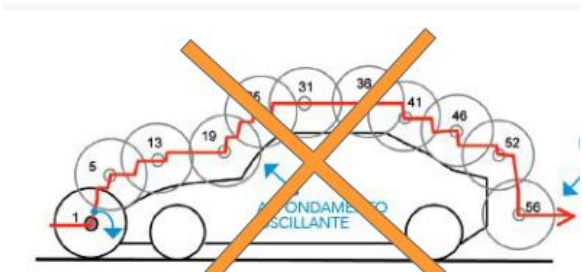
Innovative system that change the control systems of the Horizontal Brush, commonly used on car wash gantries, introducing the technique of Continuous Vector Control that allow the full integration between movements of the gantry and Horizontal Brush.

In the traditional system, the control system of the horizontal brush is a "step by step" control, with the following disadvantages:

1. The run the program takes a longer time;
2. The oscillations and the pressure change of the brush on the car surface diminishes the quality of washing and increases the chance of having uncontrolled "raised" of the top brush itself, with the result that they do not cover the entire surface to be cleaned;
3. The visual impact that these oscillations and continuous climb-down of the top brush gives the customer certainly does not give the impression that the system ensures a perfect clean-thorough washing.

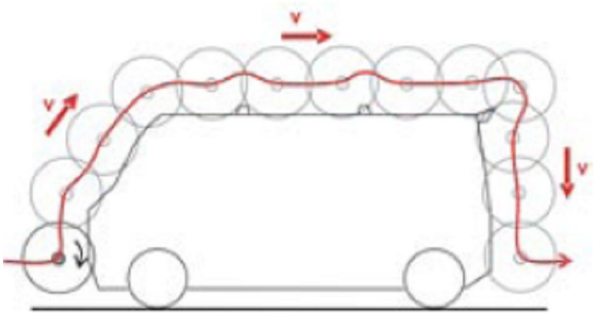


Smart Touch system



Step by step system

The SMART TOUCH system allows the car wash manager to set the desired value of the sinking of the Horizontal Brush on the vehicle surface. Depending on the type of brushes installed machine (Carlite , polyethylene , etc.), the system is able to "auto configure " itself in order to obtain a pass very similar to a "caress" . Furthermore, the Smart Touch system allows the unit to obviate the gradual wear of the brushes , while maintaining the sinking required by the operator , even in case of excessive wear of the bristles .
Maintaining a constant pressure and, consequently, a more precise and uniform wash, we obtain a higher washing performance.
Moreover, right for this reason, the unit is able to "contour follow" obstacles such as spoilers , ski carriers etc., guaranteeing a safe wash.



MAIN COMPONENTS INSIDE THE STRUCTURE

Left column (picture A)

1. Display control device.
2. Left side blower
3. Electric cabinet

   Lock with key (no.1)

   Circuit breaker with key lock.

   Locks with key (no.2)

   Electric cabinet data plate

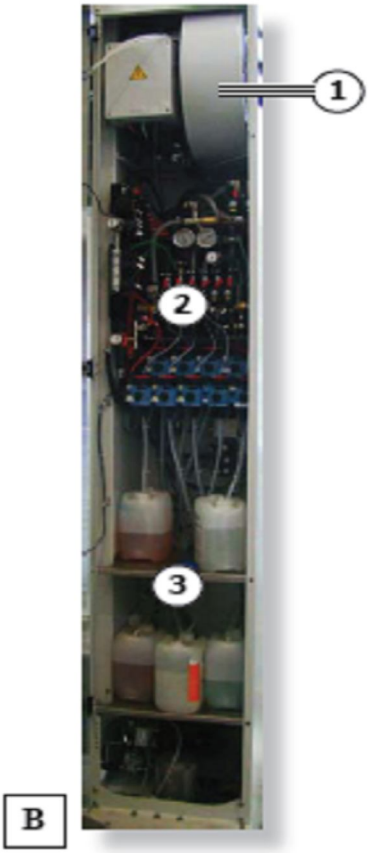
Right column (picture B)

1. Right side blower.
2. Hydraulic and pneumatic switchboard

   Compressed air connection

   Water connections

   Set of wash chemicals pneumatic dosing pumps.
3. Shelfs of the wash chemical cans.



DESCRIPTION OF THE GROUP OF NOZZLES

“Front shampoo” nozzles

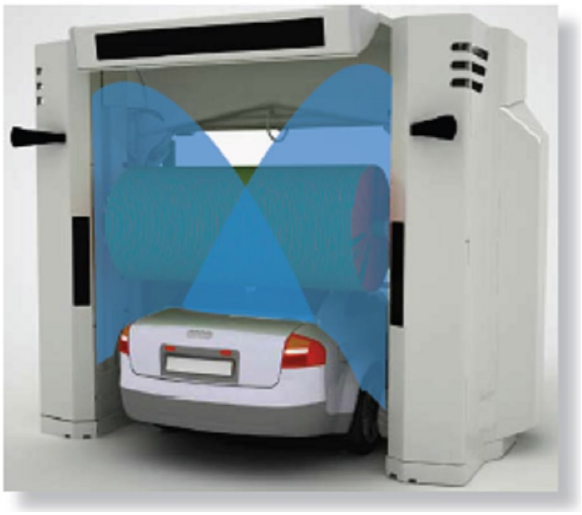
“Front shampoo nozzles” are fitted in order to deliver shampoo and foam before the top brush. Two units are installed.

They can be used in the following ways:

- Distribution of foam during the brush wash.
- Distribution of foam, in the separate wash runs.
- Distribution of standard shampoo .
- Rinsing.

Top water nozzles

Two nozzle sets are installed to distribute water on the top brush.



Vertical water delivery arches

These nozzles are used to distribute water on the vehicles' sides and on the side brushes

They can be used in the following ways:

- Distribution of foam during the brush wash.
- Distribution of foam in the separate wash runs.
- Distribution of standard shampoo.
- Rinsing.

High pressure top and side nozzles

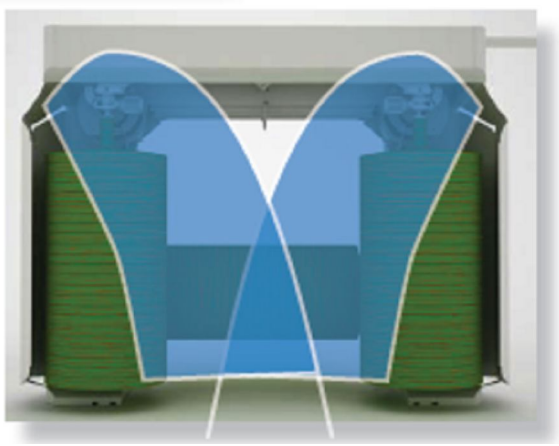
These nozzles have a double function:

- Distribution of pre-wash chemical with low pressure water to soften the grim and dirt.
- Removal of grim and dirt from the vehicle's surface with powerful high pressure water jets.

Rear nozzles

The nozzles can have following functions:

- Rinsing of the vehicles in forward run.
- Wetting of the surfaces before the side brushes in the backward runs.



Wax nozzles

Nozzles “waxes” equipped in two units, placed in the front part and out of the top brush. If there is the optional boiler, these nozzles can work with hot, tepid and cold water. They can be used in the following ways:

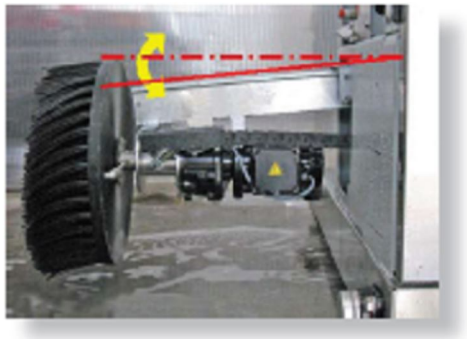
These nozzles are used for following functions:

- Distribution of wax beyond the top brush (during brush wash backward runs).
- Separate gantry wax run.
- Distribution of wax during the drying forward run.
- Separate gantry run with osmotic water.
- Distribution of osmotic water during the drying forward run.
- Rinsing.

WHEEL MASTER" WHEEL WASHING DEVICE"

This device consists of wheel washing brushes combined with high-pressure jets of water and detergent, and washes both the wheels (with detergent, high pressure and/or brush) and the sides of the vehicle (with detergent and/or high pressure).

The device is provided with adjustable-angle telescopic guides optimized to aim the brush towards the centre of the wheel (adjustment depends on the size of the wheel and on the slant of centre-sloping floors.



This device also allows one to adjust the angle of the brush for using the jets on the wheels and sides.of the vehicle.

When the wheel wash system is open and the side brush is in use, the product is ejected through the horizontal jets and the wheels are washed at high pressure.

The wheel wash has to be in physical contact with the wheels (with the side brushes and top jets) in order to clean them.

When the wheel wash is open and the brush is at an angle, the product is ejected through the inclined jets and the sides are washed at high pressure.

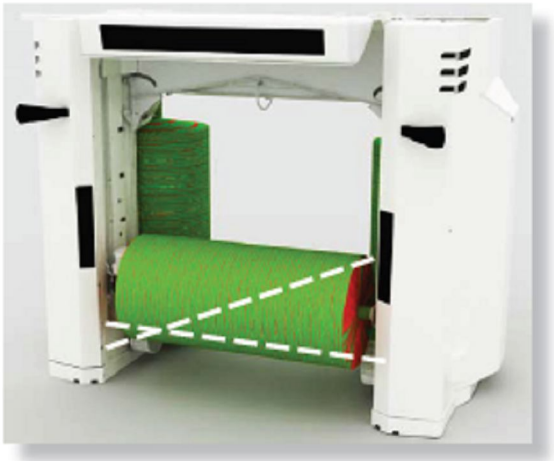
VEHICLE'S POSITIONING DEVICES

Electroluminescent display

The warning system consists of an electroluminescent display located on the entrance side of each of the two columns that gives the following information.

- R (Yellow colour) = vehicle backward movement
- STOP (Red colour) = vehicle stop
- GO (Green colour) = vehicle forward movement

Activation of the display depends on that of the two photocells positioned at an angle which detect the presence of the vehicle in the bay.

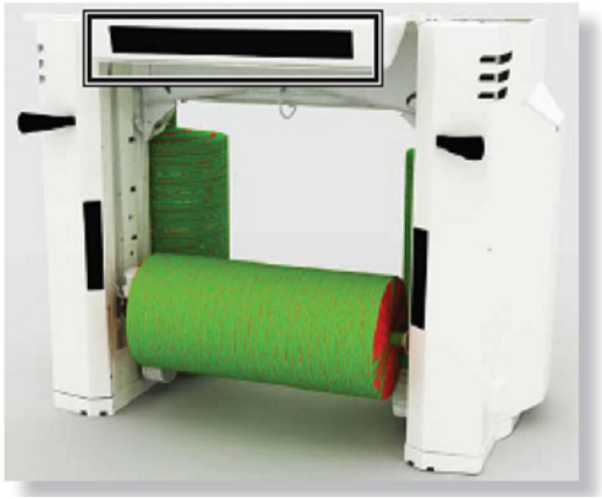


Positioning start board (optional)

It is a vehicle's position device that can be installed as an alternative to the standard photocells system. The customer must drive the vehicle forward and place the left front wheel in the centre of the start board, following the indications of the traffic lights.

Digital text display (option)

The device is fitted to the top of the gantry, when you look at it from the entry side of the vehicles, and is a very effective means to supply information to the car wash user. It includes a programmable led panel that can visualize texts in a dynamic way, with horizontal or vertical movements, with different graphical effects. The information can include: programmable advertising messages, instructions for the positioning of the vehicle, information about the wash phase, alarm messages, machine state messages, date, time, etc.



CONTROL DEVICES

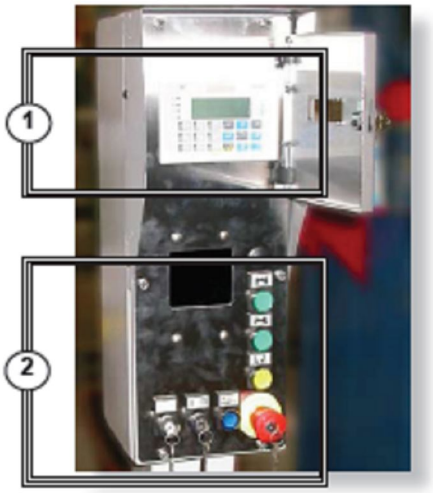
Control panel

The standard control board of the machine, shown in the picture on the side, is installed on top of a column anchored to the floor, outside the dangerous area.

At the side of this column it is possible to place another support post equipped with the payment system or with the additional pushbutton panel.

The panel is divided in two parts:

1. Operator panel
2. Electromechanical controls and signals.



Operator's panel

Operator panel with soft-touch keyboard and back lighted LCD display.

Following functions and controls are possible from the operator's panel:

- Information about the state of the machine, the current wash cycle, the alarms.
- Selection of the wash cycle.

Telecontrol system (Optional)

The telecontrol system also allows remote data processing and can be connected either through a GPRS or ADSL network, providing real-time information on the status of the unit and allowing immediate action in case of malfunctions.

The system allows to:

- manage 6 USER LEVELS with independent settings
- send text messages (SMS) or emails containing alarm warnings, cycle counter data or unit data
- receive requests to send data by SMS
- manage the ALARM LOG.
- view WEB PAGES for unit control and management
- view CASH and REVENUE status
- view the wash bays via multiple webcams

Once recognized by the system through a password, any enabled user can send an encoded SMS requesting the sending of:

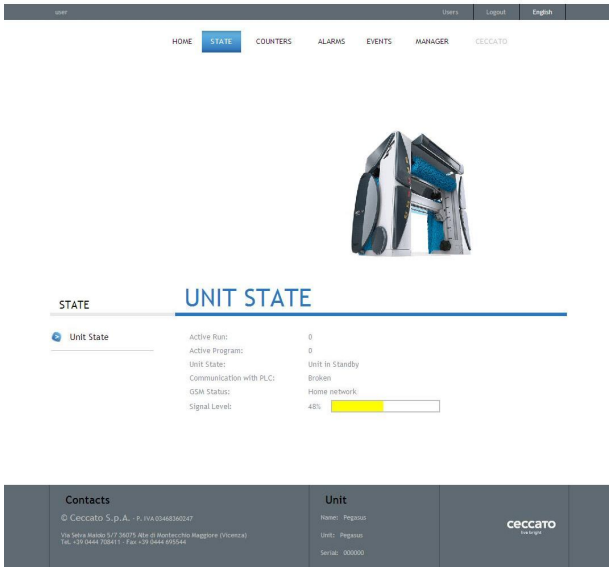
- total and daily cycle counter data
- unit status
- alarms and events report

Enabled users can also request the sending of a emails with the following information:

- total and daily cycle counter data
- alarm log ed events report

By connecting via Web, authorized users can:

- manage a multi-user connection
- view the list and status of the units
- view a synoptic diagram showing the status of the units
- send and reply via SMS or EMAIL to messages from other users (even for units not connected through GPRS)
- send SMS messages in any of the languages available
- Configure the alarm and control settings
- Look after the system's filters over time
- Export data
- Analyse statistics concerning alarms, events and revenue
- Compare and contrast analyses of different systems
- Create reports and graphs



SIMPLY COIN AIR coin accepter

Coin accepter, ideal for outdoor use with small to medium sized systems.

AUTOCOIN coin/banknote accepter

Coin/banknote accepter for outdoor use with medium to large sized systems.

SIMPLYSTART activator for arch

Automatic payment machine able to give change and change banknotes, or change and dispense coins for additional services.

It can be configured with 4 to 6 washing programs and has an emergency stop and system repositioning and reset buttons.

PITPOINT PLUS activator for arch

Automatic payment machine that can be configured with 6 separate washing programs.

PSD CODAX

The device includes a main unit (A) with printer, placed in the kiosk and a remote unit (B) usually placed close to the washing machine. After payment , a ticket with a random 6 figures number is issued by the main unit. The user goes then to the remote unit and digits the number on the keyboard to start the washing cycle.

OPTIONS

Supervision and control devices

- Remote control via SMS and WEB.

Self-service payment systems

- Banknotes, coins and key reader
- Standard cards reader
- Magnetic cards reader
- PSD Codax

Vehicle's positioning devices

- Digital text display
- Start board
- Wheel driver
- Addition photocells for cycles in short bays.

High and medium pressure pre washing

- Total high pressure in one run
- Total high pressure in two runs
- Side high pressure in one run
- Side and top medium pressure

Washing groups

- Wheel wash brushes
- Underchassis wash

Special treatments

- Side pre wash chemicals
- Active foam
- Foam wax
- Additional wax
- Foam Polish polishing system
- Sonax polishing system
- Lotus polishing system
- Wheel rims cleaner
- Hot pre wash chemical - wax
- Rinsing with osmotic water

Brushes

(Standard brushes in polyethylene).

- Foam touch
- Fabric
- Other kinds of brushes on demand.

Auxiliary devices

- Boiler
- Osmotic water
- Automatic frost protection
- Hydraulic drive short track device
- Doors control

Claddings and brushes colours

- White RAL 7035
- Grey RAL 7016.
- Other configurations and colours upon request.

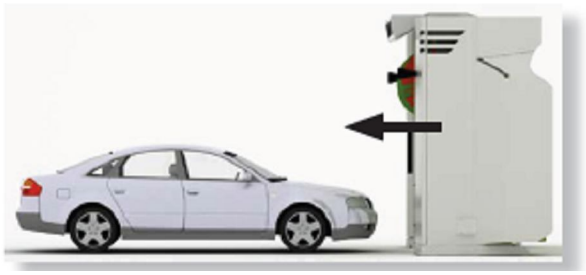
Other options

- Transparent side guards
- Installation of chemical products outside
- Centralised manual lubrication

CONVENTIONS

Gantry forward movement

FORWARD movement means that the gantry is in front of the vehicle and moves forward to get close to it .



Gantry backward movement

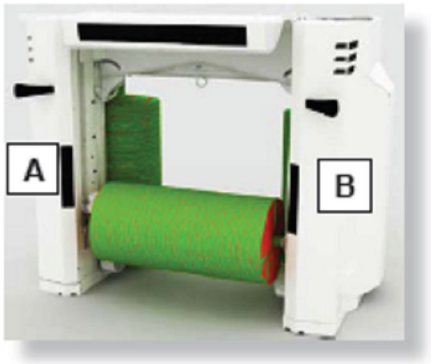
BACKWARD movement means that the gantry is in front of the vehicle and moves backward to get away from it.

Left and right side

The definitions “right” and “left” refer to the front view of the machine, the vehicles’ entry side

A. Left side.

B. Right side.



Brushes rotation

The direction of rotation of the brushes can be either “climbing” or “counter-rotating” in relation to the gantry movement.

“Climbing” rotation

See figure C

Counter-rotating”

See figure D

TECHNICAL FEATURES

CONNECTIONS

Recycled water ..... G 3/4”
Clean water ..... G 1/2”
Water pressure ..... 3-4 bar (45-60 PSI)
Compressed air ..... G 1/4”
Air pressure ..... 7-8 BAR (100-115 PSI)
Osmotic water ..... G 1/2”

			HYDRUS TECH 220 - 240 - 260	HYDRUS TECH 295
Max power absorption (*)	with boiler	kW (Hp)	20,5	23,5
	without boiler	kW (Hp)	14,5	17,5
Max power required (*)	with boiler	kW (Hp)	25,5	28,5
	without boiler	kW (Hp)	19,5	22,5
Power supply		V	See plate	
Frequency		Hz	See plate	

(*) Power absorbed by the light panel, pumps and other is not included.

Please see following table to calculate the total installed power of a given configuration

Pumps power	kW (Hp)
Recycled water supply pump	1,5 / 3 / 4
Fresh water supply pump	1,5 / 3 / 4
Wheelmaster feeding pump	5,5 / 7,5
No. 1, 2 or 3 high pressure feeding pumps	7,5
Medium pressure feeding pump	5,5 / 7,5
Underchassis feeding pump	5.5

WASH WATER QUALITY

The correct operation of the washing equipment is granted only if the water used for the washing process is in compliance with the following characteristics:

FRESH WATER

Parameter		
pH		6-8
Hardness	°F	<30
Total suspended solid	mg/l	<10
TDS (total salinity)	mg/l	<3000
Turbidity max	NTU	1
Free chlorine	mg/l	-
Iron	mg/l	<2

RECYCLED WATER

Depending on the system, it is possible to guarantee 70-80% of water reuse.

Parameter		
pH		6-8
Hardness	°F	<30
Total suspended solids	mg/l	<15
COD	mg/l	<200
Total hydrocarbons	mg/l	<5
Total surfactants	mg/l	<2

If above parameters are not met, the Manufacturer is at your disposal to study and propose the most suitable water treatment solution to obtain the required water quality.

!

- It is not possible to use recycled water with the features reported in table to supply the softened and osmosis unit.
- No large material must be found in the infeed water (stones, bags, leaves) which could damage the system's feed and the high-pressure pumps.
- For the discharge of the waste water of the vehicle wash operation into the city sewer, follow the local regulations.

CHEMICALS CONSUMPTION

When using Ceccato wash chemicals, the dosing pumps shall be adjusted in order to obtain a consumption per cycle as shown in the table below. The consumption data are referred to the wash of vehicles with average length of 4,5 m and to an ambient temperature of 10-12 °C. The wash chemical delivery rate shall be reduced if the temperature is higher.

Chemicals	Consumption per cycle (ml)
(Pre-Wash Cleaner	20-30
(Wheel Rim Cleaner	20-30
(Foam Shampoo	10-20
(Brush Shampoo	5
(Wax Plus	20-25
Polishing Wax	30-35

PROPERTIES OF THE CHEMICAL PRODUCTS

Product	Ceccato Code	pH of concentrated product	Material of gaskets on dosing pump	Characteristics
Pre wash cleaner	832198	11-12	EPDM	It must not attack aluminium, similar alloys and paintwork, even in the hot season
Brush shampoo	832234	3-4	EPDM	It must be easy to rinse off and the degree of foam must be controllable. It is important the shampoo can be mixed with the other detergents used for the washing process and can help protect against limescale
Foam shampoo	832233	3.5-4.5	EPDM	It must have a highly foaming effect, for use in small quantities (20 g/cycle). It must not leave whiteish residue and the pH must be slightly acid to remove grime. The foam shampoo must contain an agent that can prevent the redepositing of dirt, and well lubricate the brushes to reduce friction between these and the surfaces of the vehicle
Rim detergent	832235	13-14	EPDM	This must contain a suitable amount of inhibitor so as not to attack the parts in contact with the spray circuit or damage the bodywork of the vehicle in the event of contact. It must not be acid, otherwise it could attack and damage the spraying system and concrete bay.
Polish	832184	9-10	EPDM	It must not solidify or build up in layers in its container or in the nozzles when sprayed out
Sonax	832207	7-8	EPDM	Exclusive supplier: Sonax
Cera plus" wax	832236	4-5	VITON	It must not contain silicone or insoluble polymers that can form residue in the pipes. In general, the wax must not contain any greasy substances or mineral oils that could "soil" the brushes of the washing system and smear the windows of the vehicle
"Super cera" wax	832237	4-5	VITON	It must not contain silicone or insoluble polymers that can form residue in the pipes. In general, the wax must not contain any greasy substances or mineral oils that could "soil" the brushes of the washing system and smear the windows of the vehicle.

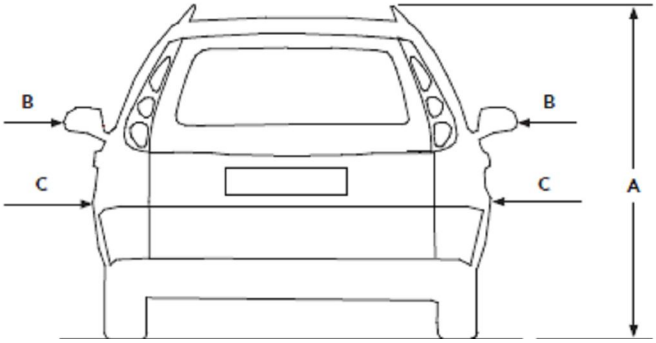
MAXIMUM VEHICLE SIZE

		HYDRUS TECH			
		220	240	260	295
Washing useful heights mm (in)	A	2200	2350	2600	2950
Max. passage width mm (in)	B	2400 / 2700 **			
Washing useful width * mm (in)	C***	2100 / 2400 **			

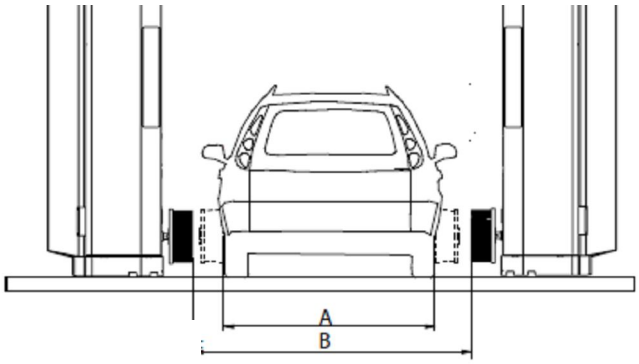
* bodywork without ledges (mirrors, etc.)

** HYDRUS TECH LARGE

*** Vehicle with normal shape and correctly positioned in the middle of the wash bay



WHEEL WASH UNIT OPERATION LIMITS



	HYDRUS TECH STD	HYDRUS TECH LARGE
(A) Minimum distance between wheels mm (in)	1120 mm	1420 mm
(B) Max. wheel wash passage width mm (in)	2040 mm	2340 mm

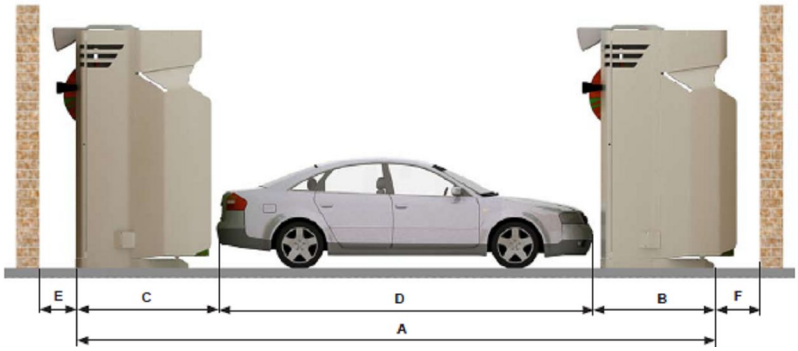
USEFUL WASHING LENGTH

Unit with standard rail length

With the standard length rails of 9 metres (29ft 1/2) it is possible to carry out a complete wash of a 5,3 m (17ft1/2) long vehicle, as shown in the following drawing.

Legend

A. Standard rail length: 9000 mm (29ft 1/2)



B. Space needed in front of the vehicle: 1690 mm (5ft1/2)

C. Space needed behind the vehicle: 2000 mm (6ft1/2)

D. Maximum vehicle length: 5300 mm (17ft)

> In case of indoor installation, check the minimum distances from the machine side frames to the walls and the space remaining between the machine and the entry and exit walls/doors when the unit is positioned on both rails limit switches.

Unit with special rail length

Increasing the rail length

By increasing the rails length, the washing length will be increased by the same length.

Rail length m - (ft)		Vehicle length m - (ft)
(standard)	9 - (29 1/2)	5,3 - (17)
	10 - (32 3/4)	6,3 - (20)
	11 - (36)	7,3 - (24)

Decreasing the rail length

By diminishing the rails length, the washing length will be decreased by the same length. Please take into account that the machine will in any case carry out the wash cycle. The wash will be completed on all those vehicles which length is compatible with the rails size, whereas some of the operations could be carried out only partially or not carried out at all on longer vehicles.

Rails length m - (ft)		Vehicle length m (ft)
(standard)	9 - (29)	5,3 (17)
	8 - (26)	4,3 (14)
	7 - (23)	3,3 (10)

Unit with “short bays” photocell

The installation of this device in short bays allows an increase of the washing length of at least 60 cm.(23”1/2)

Maximum vehicle’s wash length with standard rails will be 5,9 m (232”)

Units with short-track device

With the installation of the short-track device, the washing length can be increased by 1,3 m (51”) in relation to the standard.

Maximum vehicle’s wash length with standard rails will be 6,6 m (260”)

Units with start board (threadle) positioning

On machines equipped with standard rails, the washing length could be diminished up to 500 mm (19”), depending on the length of the vehicles’ fore carriage.

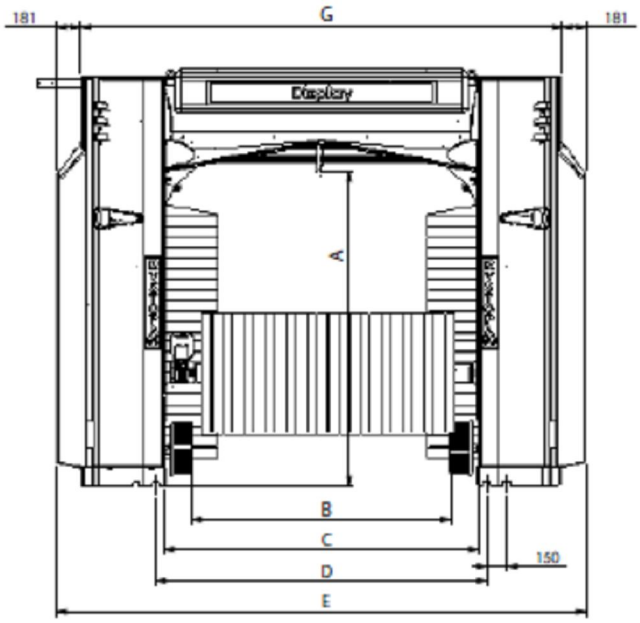
Longer rails should be installed to solve this problem, taking into account that the overall length required to install the machine will be increased.

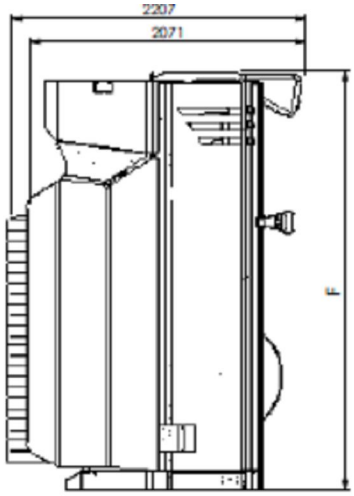
Maximum vehicle’s wash length with standard rails will be 4,8 m (189”)

SIZES

			HYDRUS TECH			
			220	240	260	295
Total weight	kg	(lb)	1600 - 1700# (3528 - 3748#)			
Height (A)	mm	(in)	2220 (87”1/2)	2370 (93”1/4)	2620 (103”1/4)	2970 (116”3/4)
Width (B)	mm	(in)	2000 / 2300# (78”3/4 / 90”1/2#)			
Width (C)	mm	(in)	2400 / 2700# (94”1/2 / 106”1/4#)			
Rails distance (D)	mm	(in)	2500 / 2800# (98 1/2 / 110 1/4#)			
Width (E)	mm	(in)	3990 - 4290# (157 3/4 / 168 1/4#)			
Height (F)	mm	(in)	3065 (120”3/4)	3215 (126”1/2)	3415 (134”1/2)	3765 (148”1/4)
Width (G)	mm	(in)	3627 / 3927# (142 1/4 / 154 1/2#)			

(#) HYDRUS TECH LARGE



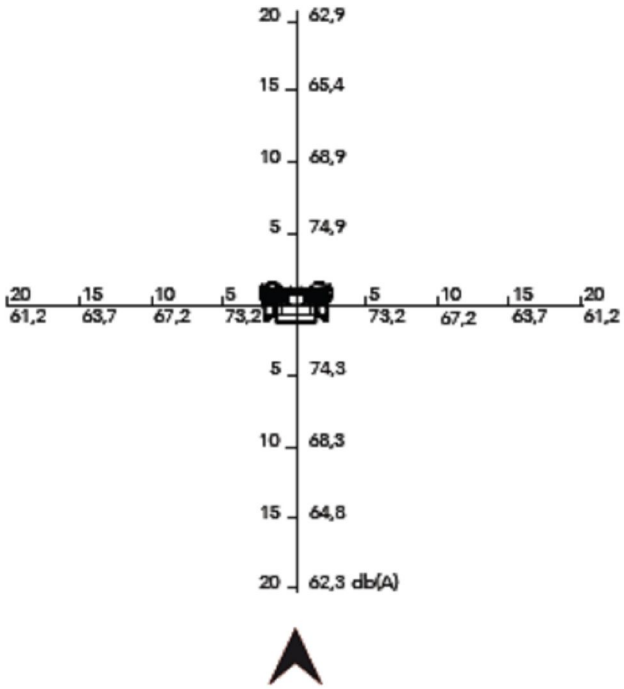


NOISE LEVEL

The sound level has been measured in compliance with the norm ISO 3746, using the control method of surface enveloping on a reflecting plane.

PHASE	**Sound pressure level db(A)**
Brush wash	92,4
High pressure wash	101,9
Drying	100,4

The table below shows the noise levels that are generated by the machine during the phases of brush washing, high pressure washing and drying.



PROGRAMMES - TIMES – CONSUMPTIONS

In the following table are listed some typical washing programmes, with the relevant cycle times and consumptions, measured on a medium length vehicle.

	Program		runs	Time	Recycled water	Clean water	Air	Power	Smoothers	Shampoo Foam	Wax	Super wax	Sonax
				min	litre	litre	litre	kW/h					
					gal.	gal.	gal.		ml oz	ml oz	ml oz	ml oz	ml oz
					gal.(uk)	gal.(uk)	gal.(uk)	HP/h					
1			2	1’40”	-	15	-	0.55	-	-	25 0,84	-	-
	Forward:	Wax + Drying				4		0.74					
	Return:	Drying				3.3							
2			4	3’10”	60	15	5	0.71	-	10 0,33		-	-
	Forward:	Washing + Shampoo											
	Return:	Washing + Wax											
	Forward:	Drying			16	4	1.5	0.95					
	Return:	Drying											
					13	3.3	1				25 0,84		
3			4	3’40”	70	15	20	0.74	-	10 0,33	25 0,84	-	-
	Forward:	Washing + Shampoo + Finishing											
	Return:												
	Forward:	Washing + Finishing + Wheels washer + Wax			19	4	5	1					
	Return:	Drying											
		Drying			15	3.3	4						
4			4	3’40”	120	25	50	1.30	-	20 0,67		-	-
	Forward:	PreFoam+ Washing + Finishing + Side high pressure + WheelMaster											
	Return:				32	7	13	1.74					
	Forward:	Washing + Finishing + Wheels washer + Hot wax											
	Return:	Wax + Drying			26	6	11				25 0,84		
		Drying											
5			6	4’30”	75	15	60	0.94	-	20 0,67	-	25 0,84	-
	Forward:	PreFoam											
	Return:	Washing + Finishing + Wheels washer											
	Forward:	Washing + Finishing			20	4	16	1.25					
	Return:	Hot wax											
	Forward:	Drying											
	Return:	Drying			17	3.3	13						

6	Forward: Return: Forward: Return: Forward: Return:	Hot smoother Total high pressure Washing + Shampoo + Finishing + Wheels washer Washing + Finishing + Hot wax Wax + Drying Drying	6	5'10"	160 42 35	25 7 6	70 19 16	1.72 2.3	30 1 30 1	20 0,67	 25 0,84	-	-
7	Forward: Return: Forward: Return: Forward: Return: Forward: Return:	PreFoam Washing + Finishing + Wheels washer Washing + Finishing+ Side high pressure + WheelMaster Drying Formel Plus Sonax Sonax Brushing Hot wax + Drying Drying	8	7'30"	120 32 26	15 4 3.3	140 37 31	1.5 2	-	20 0,67	 25 0,84	-	 35 1,18
8	Forward: Return: Forward: Return: Forward: Return: Forward: Return: Forward: Return:	Hot smoother Total high pressure Washing + Shampoo + Finishing + Wheels washer Washing + Finishing + Hot wax Drying Formel Plus Sonax Sonax Brushing Hot wax Wax + Drying Drying	10	8'20"	160 42 35	25 7 6	130 34 29	1.83 2.5	-	20 0,67	25 0,84 25 0,84	-	 35 1,18