KÄRCHER

Automotive Gantry Washing System CWP 8000

Operating Instructions English

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(11/98)

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Within the framework of regulations provided by law, the manufacturer assumes liability for the safety-related features of the system described herein only in the event that maintenance, repairs and modifications on this unit are performed by himself or, in compliance with his instructions, by a person authorized to perform such work or services.
We reserve the right to effect modifications as a result of technological advancement.

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Symbols and Conventions used in these Operating Instructions

Comments with this symbol:
- *warn about potential hazards!*

ITALICS *Text in italics contains important information for the operator/user.*

“DESIGNATION” A designation shown inside quotation marks is imprinted onto the system components, and appears in the descriptions together with an English translation.

- Indicates one item in a list

System Function and Purpose

Intended Washing Applications

The CWP 8000 Automotive Gantry Washing System is designed for the washing of
- passenger cars, and
- closed vans.

The maximum height and width of the vehicle to be washed depends on the model of washing system being used. The respective maximum vehicle measurements, stated in millimetres, are listed in the following table.

Automotive Gantry Washing System		
Model	**Effective washing width** [mm]	**Effective washing height** [mm]
CWP 8306	2200	2080
CWP 8307	2200	2250
CWP 8308	2200	2500
CWP 8308	2400	2500
CWP 8309	2400	2650
CWP 8310	2400	2800

In addition to the specifications stated above, the term “Intended Washing Applications” also requires:
- faithful compliance with all guidelines contained in the Operating Instructions, and
- strict observation of the prescribed inspection and maintenance procedures.

Improper System Utilization

The Automotive Gantry Washing System is not suitable for washing:

- specially modified vehicles, such as vehicles having roof extensions projecting past the windscreen, and types of roof constructions featuring alcove superstructures, construction and/or road-building equipment
- vehicles with trailers
- two-wheeled vehicles
- convertibles with opened top.

If the preceding instruction is not strictly observed, the supplier/manufacturer shall not be liable for any consequences arising from the improper use of the Automotive Gantry Washing System, i.e. such as the following:

- personal injuries
- damage to property or equipment
- injury to animals or livestock.

Safety Regulations

⚠ Operating Instructions!

The following safety instructions are in no way intended to replace the national safety regulations existing in individual countries. For example, in the Federal Republic of Germany, the following regulations apply:

- *Regulations Governing Vehicle Washing Systems, VBG ZH 1/543* [1)]
- *Regulations Governing Liquid Spraying Devices, VBG ZH 1/406 (Sprayers) (High-pressure Cleaners, Steam Cleaners)* [1)]
- *Accident Prevention Regulations (UVV) For Working With Liquid Spraying Devices* [1)]
- *Ordinance on Dangerous Substances, VBG ZH 1/220 (GefStoffV)* [1)]
- *Manufacturer's publications on the cleaning concentrates being employed.* [2)] .

In Case of an Emergency ...

Press the "NOT-AUS" (EMERGENCY STOP) button immediately. The washing system is instantly deactivated.

Safety Features

"NOT-AUS" (EMERGENCY STOP) button
The system operating panel must be fitted with an "NOT-AUS" (EMERGENCY STOP) button. In the event that this EMERGENCY STOP button is not situated in the immediate vicinity of the entrance to the washing area, then an extra EMERGENCY STOP switch must be mounted at this location.

Check all safety devices and their proper functioning at the following intervals:

Self-service Systems	Operator-monitored Systems
Daily, prior to system start-up	As required, at least once a month

Publication sources (in the Federal Republic of Germany):
[1]) Regulations and ordinances may be ordered from any bookseller.
[2]) Information circulars may be ordered from the manufacturer.

Installation

⚠ *The system must be installed through trained specialist staff. The corresponding legal regulations have to be observed.*

Operation

Monitoring

The operation, monitoring, care, maintenance and testing of the Automotive Gantry Washing System must be exclusively assigned to persons

- familiar with the related work procedures and the Operating Instructions,
- having been adequately informed regarding the possible hazards that may arise from improper operation of the system.

Handling Cleaning Agent Concentrates

Protective Measures

Make sure you use adequate protection when using cleaning agents containing ingredients that may pose a health hazard. Use protective goggles, gloves, and clothing.
Observe the information in the instruction leaflet provided by the supplier and/or manufacturer of the cleaning agents.
You should also refer to those directives equivalent to the German Dangerous Substances Ordinance (GefStoffV – VBG ZH 1/220), and Accident Prevention Regulations that may apply in your specific country.

Maintaining a Clean Wash Bay

⚠ *To ensure the proper and trouble-free functioning of the washing system, the wash bay floor must always be kept clean of debris, and free from any loose obstructions.*

The positioning of the washing system is effected by sensors. On being covered or obstructed by a metallic object, they send a positioning pulse to the system control unit.

System Maintenance Procedures

As a rule, all maintenance work must be performed while the washing system is shut down, i.e., switched OFF. Follow the procedures as outlined below:

System Shut-down

Prior to starting any maintenance or service work, switch OFF –

- the mains voltage at the master control switches on the CWP control cabinet and the pump control cabinet.

Securing the Master Switches

Protect the system against inadvertent activation by unauthorized persons:

- Lock and/or secure the master switches in the OFF position.
  (See also your national equivalent to the German *Regulations Governing Vehicle Washing Systems, VBG ZH 1/543, Section 5.2.*)

Maintenance and Repairs

All work on electrical wiring or components in the washing system must be performed by one of the following persons:

- *a qualified electrician,*
- *a KÄRCHER customer service representative, or*
- *a person authorized by KÄRCHER to perform the work in question.*

In addition to the general provisions governing maintenance and repairs of the Automotive Gantry Washing System, please observe the following:

1. Fuses must always be replaced with those of equal electrical values.
2. The contacts of protective motor circuit breakers must never be bridged.
3. Original replacement parts supplied by the manufacturer must be used exclusively.
4. Bolts, other small parts and wiring must always be returned to, and secured in, their original position.
5. Cables and hoses must be installed in a manner that prevents their being damaged by sharp edges.
6. When removing plugs and/or connectors, grasp them by their housing, and do not pull on the cables.
7. When making adjustments of any kind, adhere to the calibration values provided.

Guidelines for Self-service Installations

Prohibit access to the Automotive Gantry Washing System by unauthorized persons.
Post clearly legible and permanent signs outlining this restriction.
In the Federal Republic of Germany, the size and appearance of prohibitory signs is governed by Accident Prevention Regulations: “Safety Notices And Signs At The Workplace” (VBG 125).

Introduce your new customer to the special features and functions inherent in the washing system.

Make the customer familiar with the location(s) and function of the “NOT-AUS” (EMERGENCY STOP) switch(es), and inform him of the proper action to take in an emergency situation.

⚠ *The operation of self-service washing systems requires that a knowledgeable person familiar with the system and able to initiate measures aimed at preventing possible hazards, and/or cause such action to be taken by others, can be reached at short notice. (See also your national equivalent to the German Regulations Governing Vehicle Washing Systems, VBG ZH 1/543, Section 5.2.)*

Packaging, Shipping and Storage

Packaging

Dimensions:
4.80 m x 1.80 m x 3.50 m.

Weight:
The weight is dependent upon the accessories included with the system.

Centre of gravity:
In the middle

Storage

To avoid damage to the electronic system control components, the Automotive Gantry Washing System must be stored as follows:

- Dry and protected from freezing temperatures inside an enclosed building.
- Temperature: –4 °C to +50 °C
- Relative humidity: MAX 90 %

Shipping

The system is shipped in a special transport crate (TP crate).

The crate contains all components making up the Automotive Gantry Washing System.

Loading & Unloading

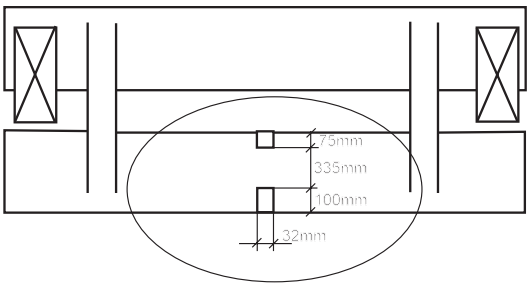
For loading and unloading the system, a forklift or crane with a lifting capacity of 8 tonnes must be provided.

When using a forklift, the length of the forks must be 1.90 m.
The gap between the forks must be set so that the central spars of the palette are in between the forks.

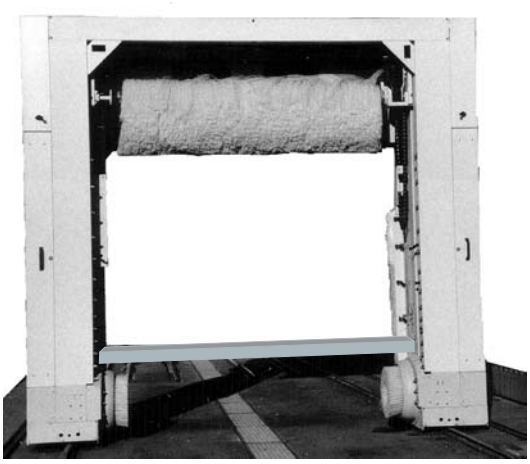
System supplied in a transport crate

The lifting equipment should be applied at the designated points (markings on the crate, or using a forklift, lift the crate at the centre of the longer side.

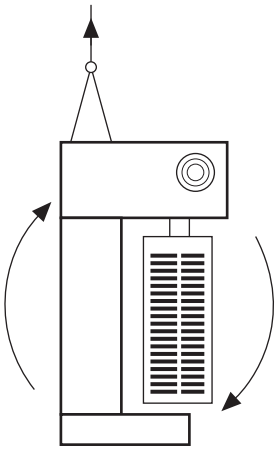
System supplied without a transport crate



To lift the system when it is not in a crate, apply the lifting equipment at the two designated points. The drawing shows the location of these points on top of the system.



To prevent the system collapsing whilst it is being lifted, insert a horizontal brace (wooden joist) between the gantry columns on each side of the unit.



The most suitable points to apply the braces are the metal recesses next to the rotary nozzles.

Attention!
System tips forward during lifting.

Supplied in a crate for shipping by sea

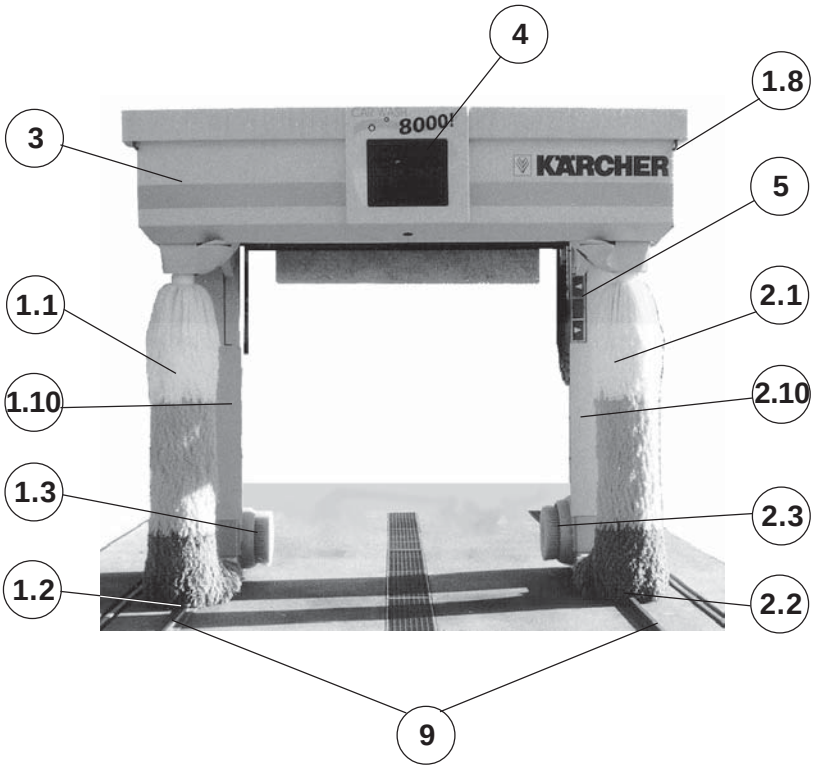
If the system has been supplied in a crate for sea transport, the lid and the sides must be removed prior to unloading.
The system is secured to the floor of the crate by four sections of angular metal. After removing these items, proceed as already outlined in the Section: Supplied without a transport crate.

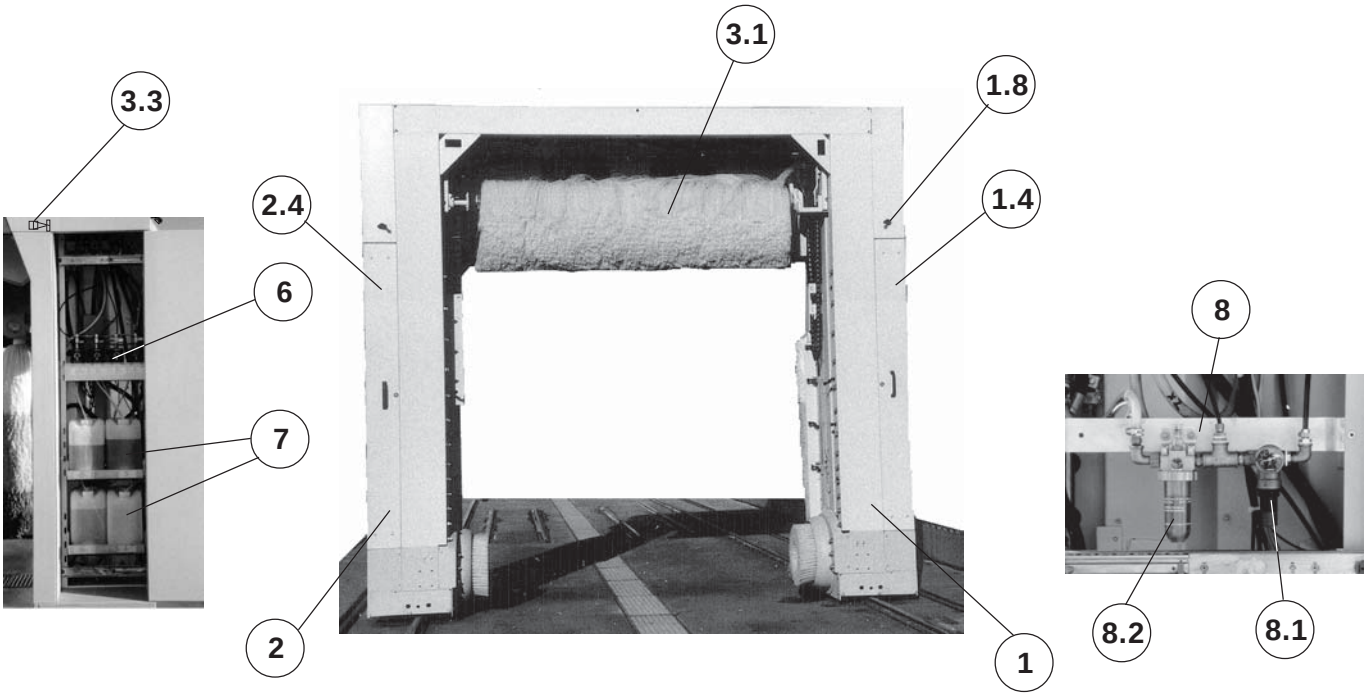
Unpacking the system

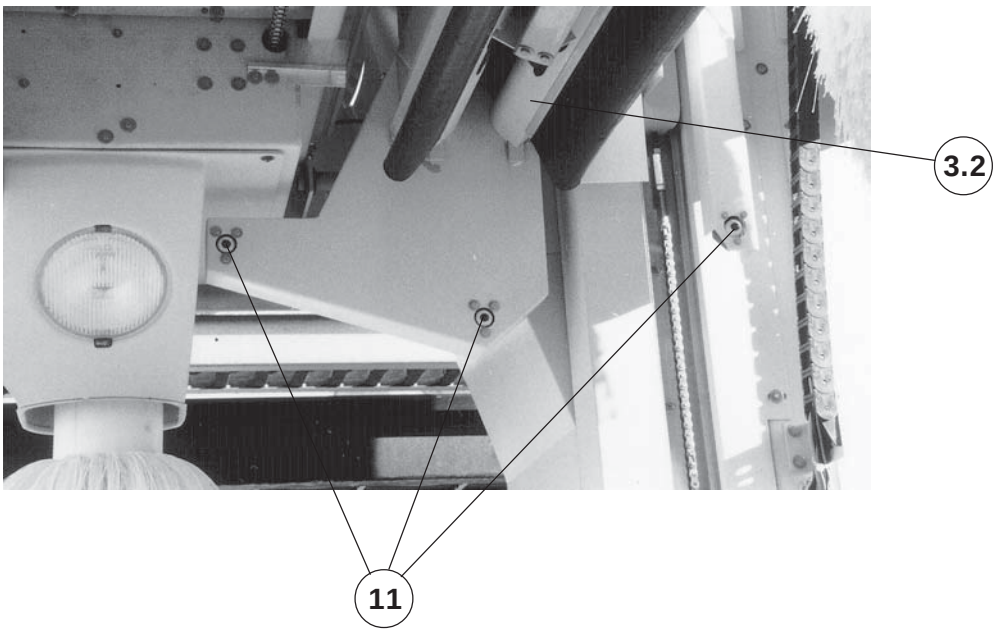
Caution!
When opening the crate there is the risk of injury due to protruding nails!

Remove the accessories packed between the gantry columns.
Check the contents of the shipment against the consignment papers, and ensure that it is complete and no transport damage has occurred. If any damage is noted, send a written report to your forwarder immediately.

System Description



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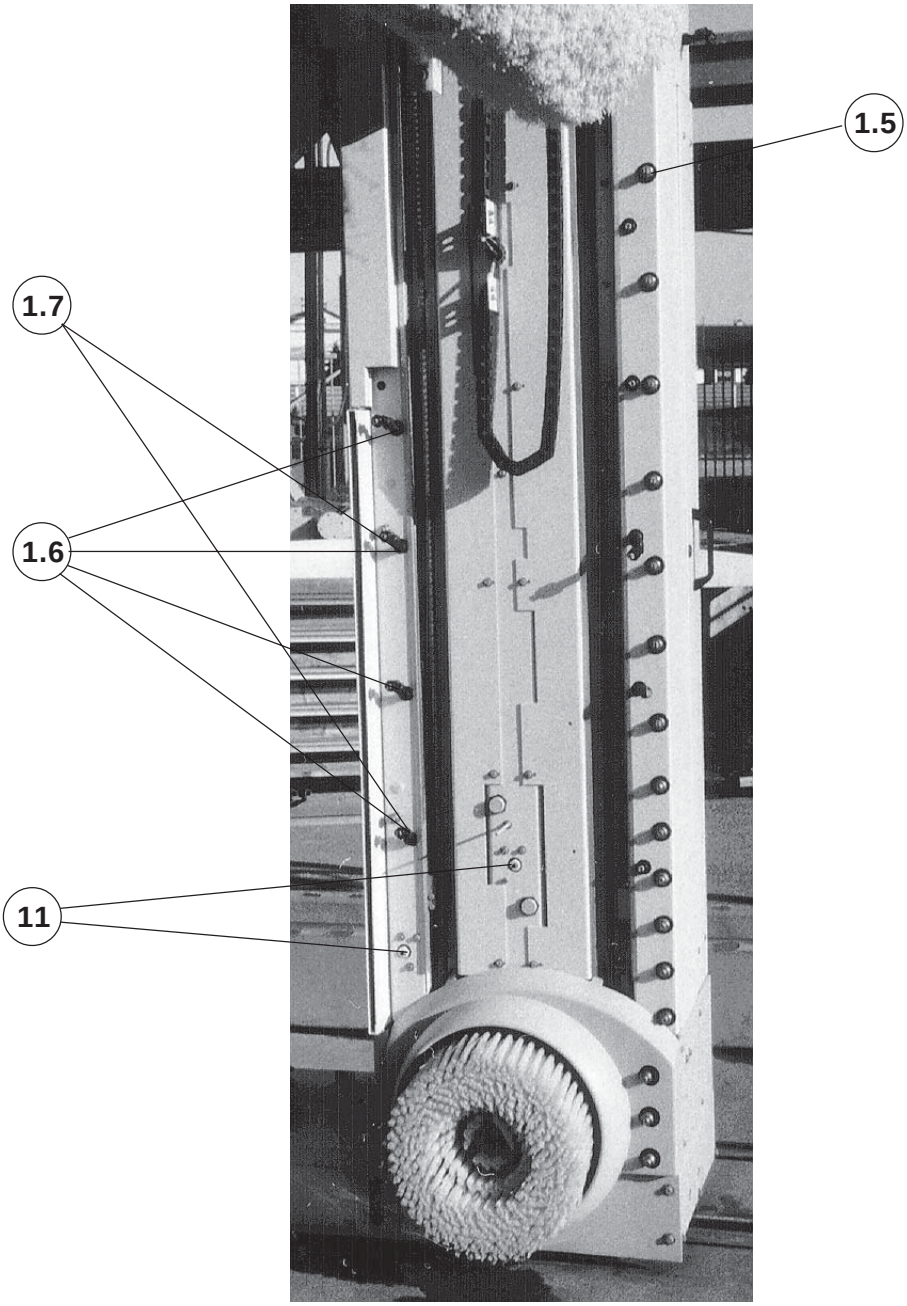

1.5
1.7
1.6
11

Description

1 Column 1
1.1 Vertical side brush 1
1.2 Running gear 1
1.3 Rotating wheel brush 1
1.4 Sliding door 1
1.5 High-pressure and cleaning agent pre-soaking nozzles
1.6 Shampoo / rinse nozzles
1.7 Hot-wax nozzles
1.8 Nozzles for application of drying agent / rinse nozzles
1.9 Rating plate (not shown)
1.10 Dryer side nozzle 1
2 Column 2
2.1 Vertical side brush 2
2.2 Running gear 2
2.3 Rotating wheel brush 2
2.4 Sliding door 2
2.10 Dryer side nozzle 2
3 Front cover
3.1 Roof brush
3.2 Dryer blower bar with high pressure nozzle tube
3.3 Locking mechanism for front cover (inside column 1 and 2)
4 Visual programme status display
5 Positioning lights
6 Metering pump, dirt trap
7 Chemical agent reservoirs
8 Compressed air supply
8.1 Pressure reducer for wheel washing unit
8.2 Air lubricator
9 Gantry track
11 Light barriers
12 Manual remote control with “NOT-AUS” (EMERGENCY STOP) switch (see “Operating controls”, chapter E)
13 Wash card reader with “NOT-AUS” (EMERGENCY STOP) switch (see “Operating controls”, chapter E)
14 CWP control cabinet (not shown)
14.1 PUMP control cabinet (not shown)
15 Underbody washing assembly (not shown)
16 Wheel deflector (not shown)
17 Gravel filter (not shown)

Vertical side brush

The rotating vertical side brushes clean the sides of the vehicle. In the front and rear, they also clean any areas that cannot be reached by the roof brush.

Roof brush

The rotating roof brush removes dirt from the roof, front, rear and upper horizontal surfaces of the vehicle being washed.

Dryer side nozzles

The dryer nozzles distribute the air required for drying the sides of the vehicle.

Dryer blower bar

The dryer blower bar is guided along the vehicle contours. Built-in blowers generate the air stream required for drying the vehicle.

Shampoo nozzles

The shampoo nozzles are used to spray a mixture of water and shampooing solution onto the vehicle.

Positioning lights

The positioning lights serve three separate functions: Prior to washing, they assist in positioning the vehicle. After washing has been completed, they indicate the direction in which the vehicle must exit the wash bay. In the case of a malfunction, they flash rapidly to indicate that a fault condition exists in the system.

Metering pumps

The metering pumps determine the dosage of detergents to be mixed with the water used for washing.

Dirt traps

The dirt traps capture water-borne particles that could obstruct the spraying nozzles.

Detergents

The sliding door 2 allows access to two shelves that are used for the storage of containers containing the detergents. Dependent on the overall system configuration, 4 containers each holding 10 L can be accommodated on the shelves.

Light barriers

The light barriers register:
- position and contours of the vehicle, and
- the position of the wheels.

Rating plate

The rating plate displays the most important system specifications.

Air lubricator

The air lubricator injects a fine oil fog for lubrication purposes into the compressed-air operating the pneumatically actuated system components.

Operating controls

Depending upon the order specifications, the system is supplied with one of the following operating controls:
- with a control unit
- with a control panel for manual operation (optional)
- with a wash card reader (optional).

Optional System Accessories

Rotating wheel brushes

To achieve thorough cleaning of wheel rims, the system may be equipped with an optional washing assembly featuring two rotating wheel brushes. The individual wheel positions are registered by light barriers. The revolving brushes are pressed against the wheels through pneumatic cylinders.

High-pressure nozzles

The water jet is ejected from the high-pressure nozzles at a pressure of 60 bar (approx. 870 psi), washing dirt particles off the vehicle surfaces without any mechanical contact. During the pre-soaking cycle, the pre-soaking solution is mixed with water and sprayed onto the vehicle.

Hot-wax nozzles

To deposit a protective film of wax on the washed surfaces, the hot-wax nozzles are used to spray a mixture of wax and hot water onto the vehicle.

Visual programme status display

The visual programme status display always displays a brief description of the current washing cycle.

Wash card reader

If the Automotive Gantry Washing System is used as a self-service installation, the wash card reader is used to control system operation.

⚠ *The wash cards used in each system are programmed for the respective washing system only, and can only be used in conjunction with this system.*

Control panel for manual operation

The control panel for manual operation is used when the system is serviced by wash personnel.

"NOT-AUS" (EMERGENCY STOP) button

In the event that an imminent hazard threatening persons, animals or property is detected, the system must be instantly deactivated by pressing the "NOT-AUS" (EMERGENCY STOP) button. An EMERGENCY STOP button is installed in the following locations:

- on the manual remote control
- on the wash card reader
- at the pump control cabinet.

Underbody washing system

The underbody washing system is available as an optional accessory. High-pressure water is sprayed from two articulated nozzle pipes along the entire underbody area. The length of the vehicle is determined by sensors.

Wheel deflector

The purpose of the wheel deflectors is to centre the vehicle between the gantry tracks. Particularly in the case of inexperienced drivers, the wheel deflectors prevent inadvertent off-centre positioning of their vehicles.

Frost protection feature

The system can be equipped with a two-stage frost protection feature.

- Stage 1:
  Stage 1 serves as a preliminary warning of the imminent development of freezing temperatures. Washing can still continue after this has occurred.

  Note that compressed air is automatically blown through the system hoses and nozzle tubing if either of the following conditions occurs:
  A pre-programmable time period elapses without a vehicle being washed,
  or
  the temperature in the washing environment drops below the minimum threshold.

- Stage 2:
  Stage 2 comprises the following protective measures. If stage 2 has occurred – the temperature has dropped below the minimum threshold – any washing cycle that is in progress is completed.
  Compressed air is then blown through the system hoses and nozzle tubing.
  No further washing programme can be started.

Water recovery

Increasing environmental consciousness and rising water costs are prompting the utilization of water recovery systems. To this end, KÄRCHER SYSTEMS TECHNOLOGY has been using a proven water reprocessing system for a number of years. This system was first used in conjunction with washing systems for utility vehicles.

The used water is directed through a sediment trap and an oil separator into a subterranean storage tank. On demand a submerged pump transfers it from there through a fine gravel filter to the service-water reservoir. During this process, a metering pump adds a sterilizing agent to the water. The service-water reservoir feeds the high-pressure and the service-water pumps.
With a high vehicle throughput, it may become necessary to add a sedimenting agent to the water in order to accelerate the settling of water-borne particles.

The development of odours is prevented by circulating the service water. With the use of the service-water option, fresh-water is required only in the second brush washing cycle and the final rinse. The fresh-water savings amount to as much as 90 %.

Rain water

If a large roof area is available, the installation of a rain-water supply system may be advisable. Provided that sufficient amounts are available, the collected rain water replaces the fresh-water component. However the high-pressure pumps must nevertheless be cooled with fresh water. The rain water is collected in subterranean tanks, and conveyed to the fresh-water reservoir by a submersible pump. From there the water is fed to the fresh-water pump.

Operating Controls

Control unit

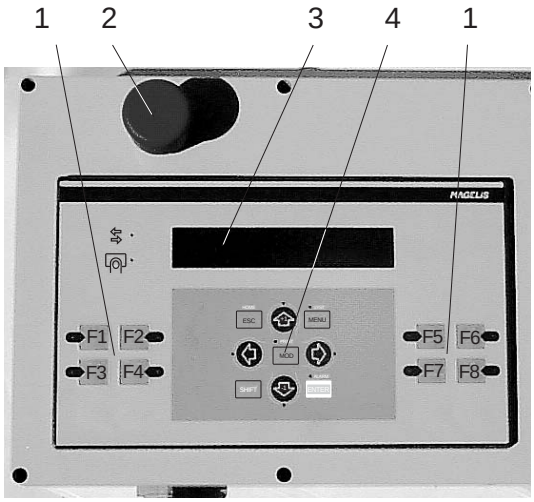
The control unit shows

- Operating data
- Faults

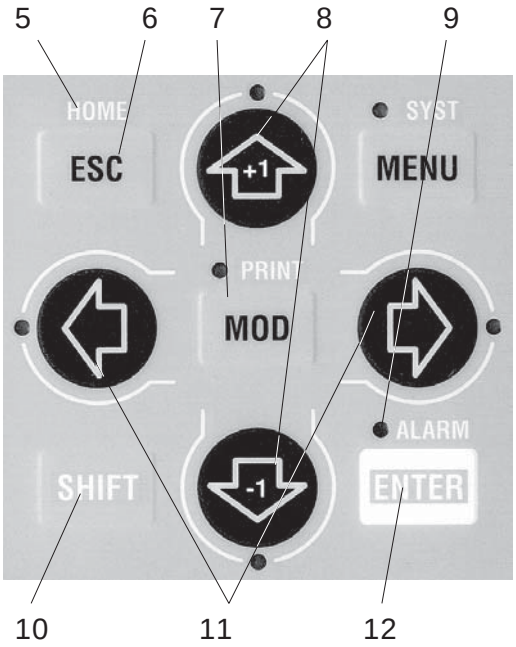
and has operator's controls for

- start of programme
- manual control
- setting the door control system

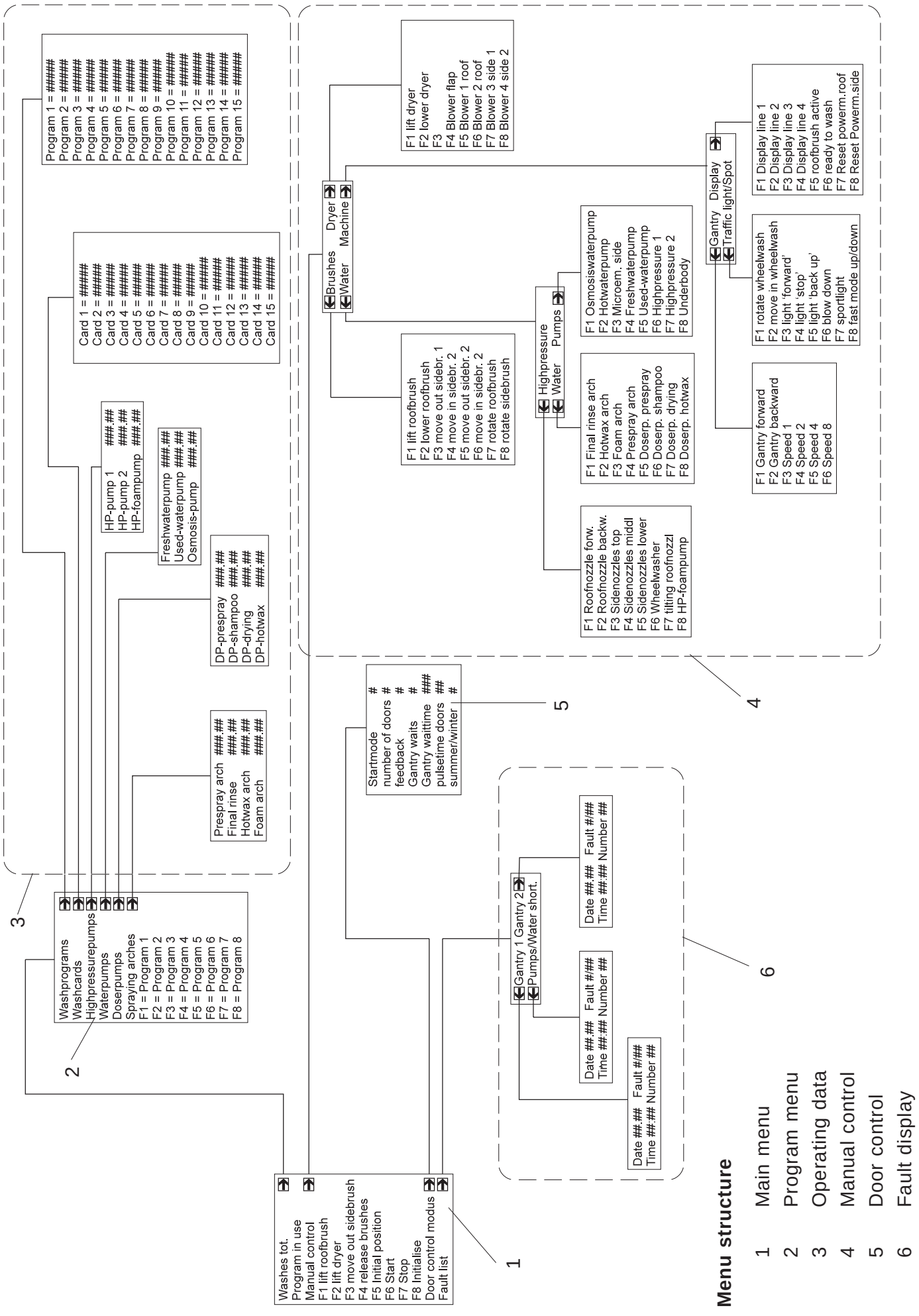
Operator controls



1	Function buttons	Carry out the functions associated with the current menu
2	EMERGENCY-button	Switches off the system in case of emergency
3	Display	Shows: – section of the current menu – faults which occur
4	System buttons	Used to select the desired menu



5	"HOME" function (SHIFT+ESC)	Takes you out of all menus straight back into main menu
6	"ESC" button	Takes you into one menu level higher
7	"MOD" button	Releases one variable in the above display line for modification
8	Buttons +1 / -1	– Move the display window over the current menu – Modify a released variable
9	"ALARM" LED	Blinks when faults occur
10	"SHIFT" button	Allows you to select the functions which appear above the buttons
11	Choice of menu buttons	Select the desired menu when there are branchings
12	"ENTER" button	Confirms the modification of a variable



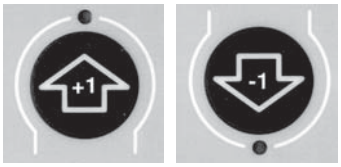
Menu structure

1 Main menu
2 Program menu
3 Operating data
4 Manual control
5 Door control
6 Fault display

Operation

All functions are combined into menus. The menus are arranged in a menu structure. The display shows two lines of the current menu.

Moving within a menu



Buttons +1 and -1 are used to move the currently displayed window in the direction of the arrows.

- A brief press on the button moves the window by one line.
- Keeping the button pressed keeps the window moving continuously.

Choosing the current menu

In the menu lines and using the symbols ⇦ or ⇨ you can choose another menu. The menu you can choose is indicated in the text lines. The selection is made by:

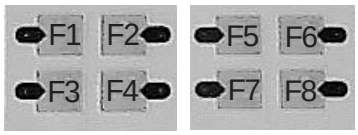
- selecting the menu using the buttons +1 / –1 until the symbol ⇦ or ⇨ blinks in the desired menu
- pressing the menu selection button with the appropriate arrow

In this way you get into the menu structure as outlined below.

With the “ESC” button you get back to the next higher menu. It is not important which line is indicated on the display. By repeated pressing of “ESC” you can work upwards as far as the main menu.

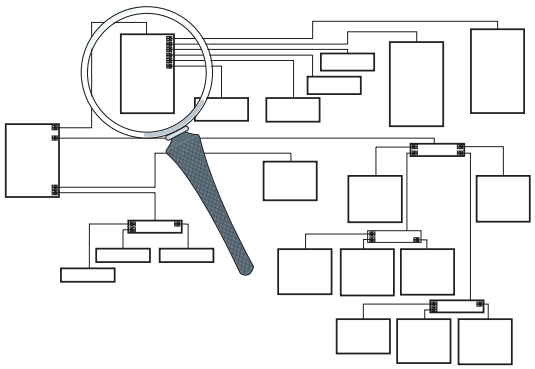
With the “HOME” function you get out of any menu and go direct to the main menu. “HOME” is accessed by simultaneously pressing “SHIFT” and “ESC”.

Carrying out functions



The assignment of the function buttons is defined in the current menu. This means that the function buttons carry out various functions relative to the current menu. The current functions can be looked at in the current menu. A function is accessed by

- choosing the menu in which the desired function is
- pressing the function button which is assigned to this function. If the function is activated, the LED next to the button lights up.



Starting the wash programme

Choose the programme menu by
- selecting the main menu with “SHIFT” + “ESC”
- pressing menu selection button ➔

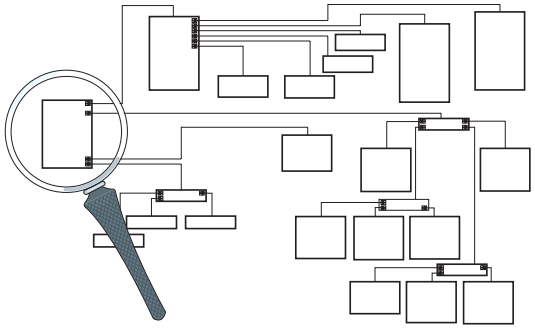
In the programme menu the function buttons are assigned as follows:

F1 Start programme 1	**F2** Start programme 2
F3 Start programme 3	**F4** Start programme 4

F5 Start programme 5	**F6** Start programme 6
F7 Start programme 7	**F8** Start programme 8

For example: to start programme 5, press the F5 button.

Manual intervention in a programme which is running



A programme which is running can be interrupted to bypass a problem associated with the vehicle to be washed. To carry out a manual intervention you have to select the main menu (“SHIFT” + “ESC”).

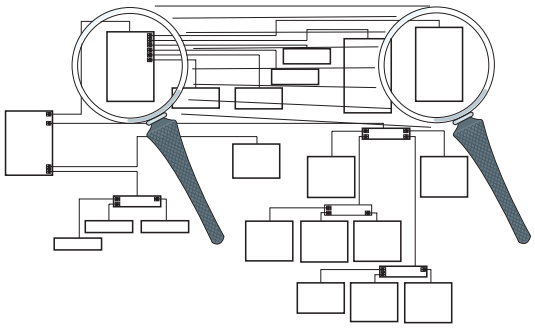
The function buttons in the main menu are assigned as follows:

F1 Lift roof brush for as long as the button is pressed and then arrest in position	**F2** Lift roof dryer for as long as the button is pressed and then arrest in position
F3 Move side brushes apart for as long as the button is pressed and then arrest in position	**F4** Cancel arrest mode of F1...F3. Automatic wash movements without arresting in position

F5 Move system to start position	**F6** Proceed with wash sequence interrupted with F7
F7 Interrupt current wash process	**F8** Cancel current wash programme

Arrest in position: *the individual parts of the system remain in the chosen position as a result of pressing the button until the arrest mode is cancelled by the F4 button. When the arrest mode has been cancelled the individual parts of the system resume their normal function.*

Start position: *The system is brought back to the start position. This is necessary:*
- *after EMERGENCY-STOP*
- *after being overhauled*
- *after starting the system up again*



Reading off operating data

You can use the programme menu to access various menus with operating data.

Wash programme

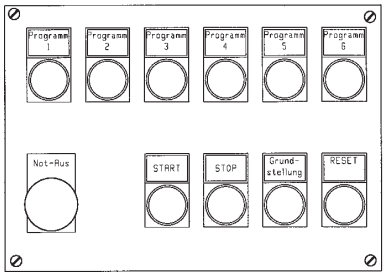
In this menu the number of washes is displayed for each internal programme number. The control system uses internal programme numbers which are allocated to the programmes on the wash cards and are specific to the customer.

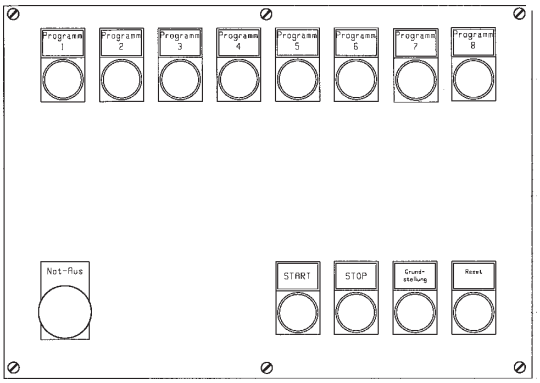
Wash cards

In this menu the number of washes is displayed for each wash-card programme.

High-pressure pumps, water pumps, metering pumps, spray arches

In these menus the operating time of the relevant system components is shown in hours. All the operating hour counters of the current menu can be set back in concert by pressing the F8 button for more than 10 seconds.





Control panel for Manual Operation (Optional Accessory)

The buttons on the control panel can be arranged in the way the customer wishes. It is not necessary, therefore, to have all the functions described available on the control panel in question.

RESET

By pressing the RESET button the control system is started after an EMERGENCY-STOP button has been activated:
- Release the emergency-stop button
- Press RESET

“GRUNDSTELLUNG” (REST POSITION)

Pressing the “GRUNDSTELLUNG” button resets and returns the system to the rest position. This is necessary whenever:
- the system has been switched OFF by means of the “NOT-AUS” (EMERGENCY STOP) button.
- upon completion of repairs to the system.
- after the system has been switched ON again.

“PROGRAMM” buttons

The “PROGRAMM” buttons are used to select the individual washing programmes.

Stop

Interrupts the washing sequence.

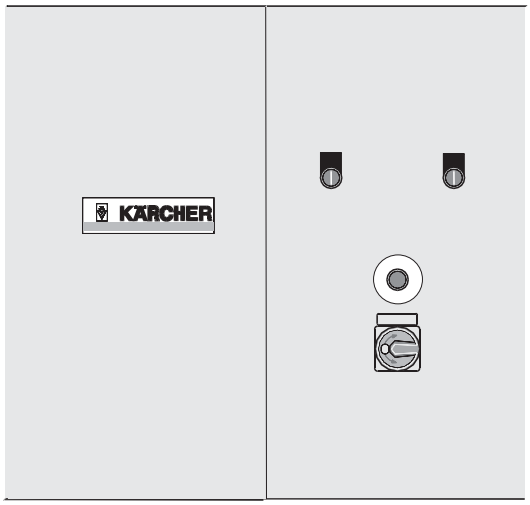
Start

Resumes the interrupted washing sequence.

Wash card reader

The Automotive Gantry Washing System can be used with different types of wash card readers. The necessary information for the operation of the wash card reader is included in the instruction manual of the wash card reader.

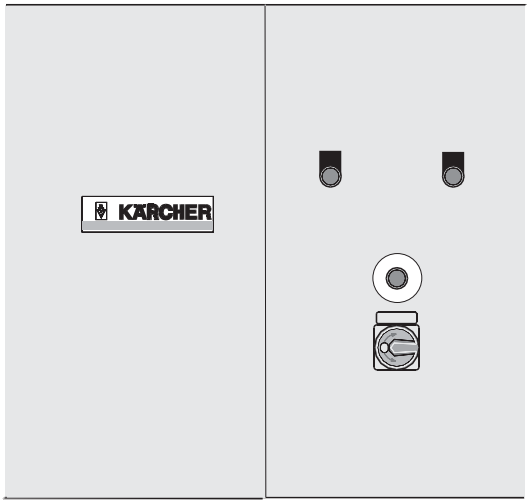
Control Cabinet



CWP Control Cabinet

The CWP Control Cabinet contains the central control unit for the gantry washing system.
Mounted in the door of the cabinet are:
- a master switch
- the “EIN nach NOT-AUS” switch
- the key switch ”Port On” and
- an emergency-stop button.

Opening the cabinet door allows access to those components that are essential to the proper functioning of the system, such as:
- the protective motor circuit breakers
- and power switches.



Pump control cabinet

The pump control cabinet contains:
- control circuitry for pumps
- the door control
- control circuitry for underbody washing assembly.

Mounted in the cabinet door is:
- a master switch,
- the indicator light “control voltage OK”,
- the indicator light “backwash operating” and
- an emergency-stop switch.

Opening the cabinet door allows access to those components that are essential to the proper functioning of the pumps, such as:
- protective motor circuit breakers
- power switches.

Technical Specifications (European models)

Dimensions

Automotive Gantry Washing System

Dimensions in mm

Automotive Gantry Washing System					
Model	**Height**	**Width**	**Length**	**Effective washing width**	**Effective washing height**
CWP 8306	2985	3566	1640	2200	2080
CWP 8307	3155	3566	1640	2200	2250
CWP 8308	3405	3566	1640	2200	2500
CWP 8308	3405	3766	1500	2400	2500
CWP 8309	3555	3766	1640	2400	2650
CWP 8310	3705	3766	1640	2400	2800

Wash bay dimensions

Dimensions in mm

Wash bay dimensions	
Length	9700
Width	4600

Vehicle length

The length of the tracks is 9,000 mm. Vehicles up to a MAX length of 5,500 mm can be washed in this system.

Connection Data

Electrical connections

Voltage

Mains voltage	400	V 3-phase
Mains frequency	50	Hz

Load

CWP control cabinet incl. hot-wax	11.5–13.5	kW
Pump control cabinet	22.0–32.0	kW

Fuses

Primary:		
Main switch cabinet	35	A
Sub-distributor cabinet	50	A

Diameter of connecting cables:
Depend upon local regulations

Control voltage
The internal control voltage is 24 V=.

Water connections

Connection

Water connection	R 1"

Pressure

Fresh water	4.5–6	bar at	150 L/min
Service water	4.5–6	bar at	150 L/min

Consumption
Water consumption between 165 L and 480 L. Depends upon selected programme, and refers to a vehicle length of 4.5 m. Up to 90 % service water employed.

Air connections

Connection

Air connection	R ½"

Pressure

Air pressure:		
minimum	6	bar
maximum	8	bar

Consumption

Air consumption	50 L to 250 L per wash (without frost protection unit)	

Brushes

Bristle length

Roof brushes	
Bristle length – new	420 mm
Replacement threshold	380 mm
Side brushes	
Bristle length – new	412 mm
Replacement threshold	380 mm

Noise level

Measured 1 m in front of the washing bay door

Door open	87 dB (A)
Door closed	72 dB (A)

Washing Times and Consumption Data

Programme	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Pre-soaking cycle	⇧	⇧ UBW	⇧ UBW	⇧	⇧	⇧ UBW		
Soaking cycle	⇩	⇩	⇩	⇩	⇩	⇩		
High-pressure washing cycle, roof	⇧	⇧	⇧	⇧	⇧	⇧		
High-pressure washing cycle, sides	⇩ ⇧	⇩ ⇧	⇩ Wheel cleaner	⇩ Wheel cleaner	⇩ Wheel cleaner	⇩ Wheel cleaner		
Brush washing cycle			⇧	⇧	⇧	⇧	⇧ Wheel cleaner ⇩	⇧ Wheel cleaner UBW ⇩
Rinse cycle	⇩ Dryer	⇩ Dryer	⇩ Dryer	⇩ Dryer	⇩ Dryer Hot-wax	⇩ Dryer Hot-wax.	Dryer	Dryer
Drying cycle	⇧ ⇩	⇧ ⇩	⇧ ⇩	⇧ ⇩	⇧ ⇩	⇧ ⇩	⇧ ⇩	⇧ ⇩
Washing time [min:sec]	5,25	5,25	5,48	7,42	7,42	7,42	5,00	5,00
Consumption								
Chemical agents								
Pre-wash [mL]	15	15	15	15	15	15	-/-	-/-
Shampoo [mL]	-/-	-/-	-/-	15	15	15	15	15
Drying agent [mL]	20	20	20	20	20	20	20	20
Hot-wax [mL]	-/-	-/-	-/-	-/-	20	20	-/-	-/-
Water •								
Fresh water [L]	45	45	58	110 (180)	116 (186)	116 (186)	75 (165)	81 (171)
Service water [L]	350	480	480	320 (150)	320 (250)	450 (380)	90	220 (130)

Washing Times and Consumption Data

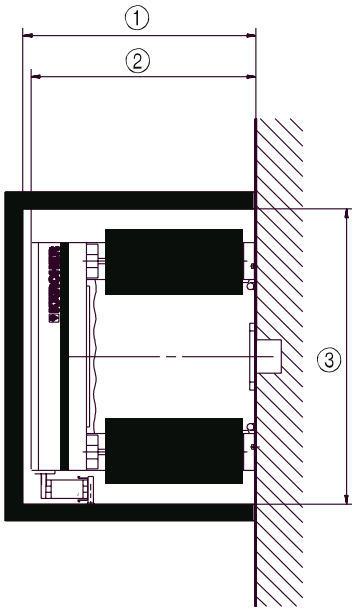
Programme	Pre-soaking cycle	Soaking cycle	High-pressure washing cycle, roof	High-pressure washing cycle, sides	Brush washing cycle	Rinse cycle	Drying cycle	Washing time [min:sec]	Consumption: Chemical agents: Pre-wash [mL]	Consumption: Chemical agents: Shampoo [mL]	Consumption: Chemical agents: Drying agent [mL]	Consumption: Chemical agents: Hot-wax [mL]	Consumption: Water •: Fresh water [L]	Consumption: Water •: Service water [L]
9	⇧			⇩ Wheel cleaner	⇧	⇩ Dryer Hot-wax	⇧ ⇩	6,15	15	15	20	20	116 (186)	70
10	⇧ UBW			⇩ Wheel cleaner	⇧	⇩ Dryer Hot-wax	⇧ ⇩	6,15	15	15	20	20	116 (186)	200 (130)
11		⇩			⇧ Wheel cleaner	⇩ Dryer		2,45	-/-	15	20	-/-	75 (165)	90
12					⇧ Wheel cleaner UBW ⇩	⇩ Dryer		2,45	-/-	15	20	-/-	81 (171)	90
13	⇧ Microemulsion UBW	⇩	⇧	⇩ Wheel cleaner	⇧	⇩ Dryer Hot-wax	⇧ ⇩	5,28	3 l	-/-	20	20	16	480
14	⇧ Microemulsion	⇩	⇧	⇩ Wheel cleaner	⇧	⇩ Dryer Hot-wax	⇧ ⇩	7,22	3 l	15	20	20	81 (151)	320 (250)
15	⇧ Microemulsion UBW	⇩	⇧	⇩ Wheel cleaner	⇧	⇩ Dryer Hot-wax	⇧ ⇩	7,22	3 l	15	20	20	81 (151)	450 (380)

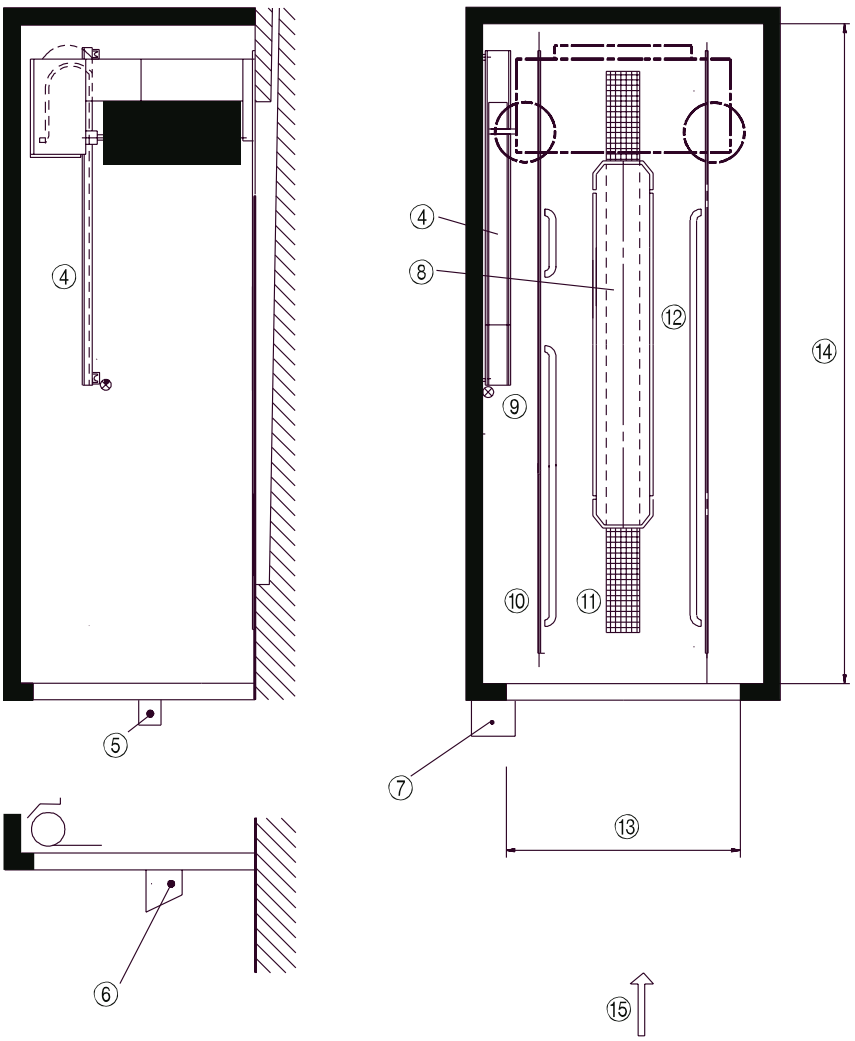
• Consumption figures for programmes with brush washing: 1st brush washing cycle – service water 2nd brush washing cycle – fresh water (Figures for a vehicle length of 4.5 m)

Direction of gantry travel
⇧ forward
⇩ reverse

Recommended basic programmes

Dimensional Diagram – Automotive Gantry Washing System CWP 8000





Description

① MIN internal height of wash bay
– Dimension A plus 50 mm

② Height of system (Dimension A)

③ Wash bay internal width with track width 2.800 mm: min. 4.400 mm.
Wash bay internal width with track width 3.000 mm: min. 4.600 mm.

④ Cable tow

⑤ Control panel

⑥ Wash card reader

⑦ Control panel or wash card reader
(mounted either right or left)

⑧ Underbody washing assembly – above floor level

⑨ Water and power supply mounted either right or left

⑩ Rail track

⑪ Central gutter

⑫ Wheel deflector

⑬ Door width – 3500 mm
Door height – Dimension A minus 160 mm

⑭ MIN internal length of wash bay – 9900 mm

⑮ Entrance

Model	Effective washing height	Effective washing width	System height (Dim. A)
8306	2080	2200	2985
8307	2250	2200	3155
8308	2500	2200/2400	3405
8309	2650	2400	3555
8310	2800	2400	3705

	System control cabinet incl. hot-wax	Pump control cabinet
Load	11.5–13.5 kW	22–32 kW
	400 V / 3~ / 50 Hz	
Fuses	35 A	50 A

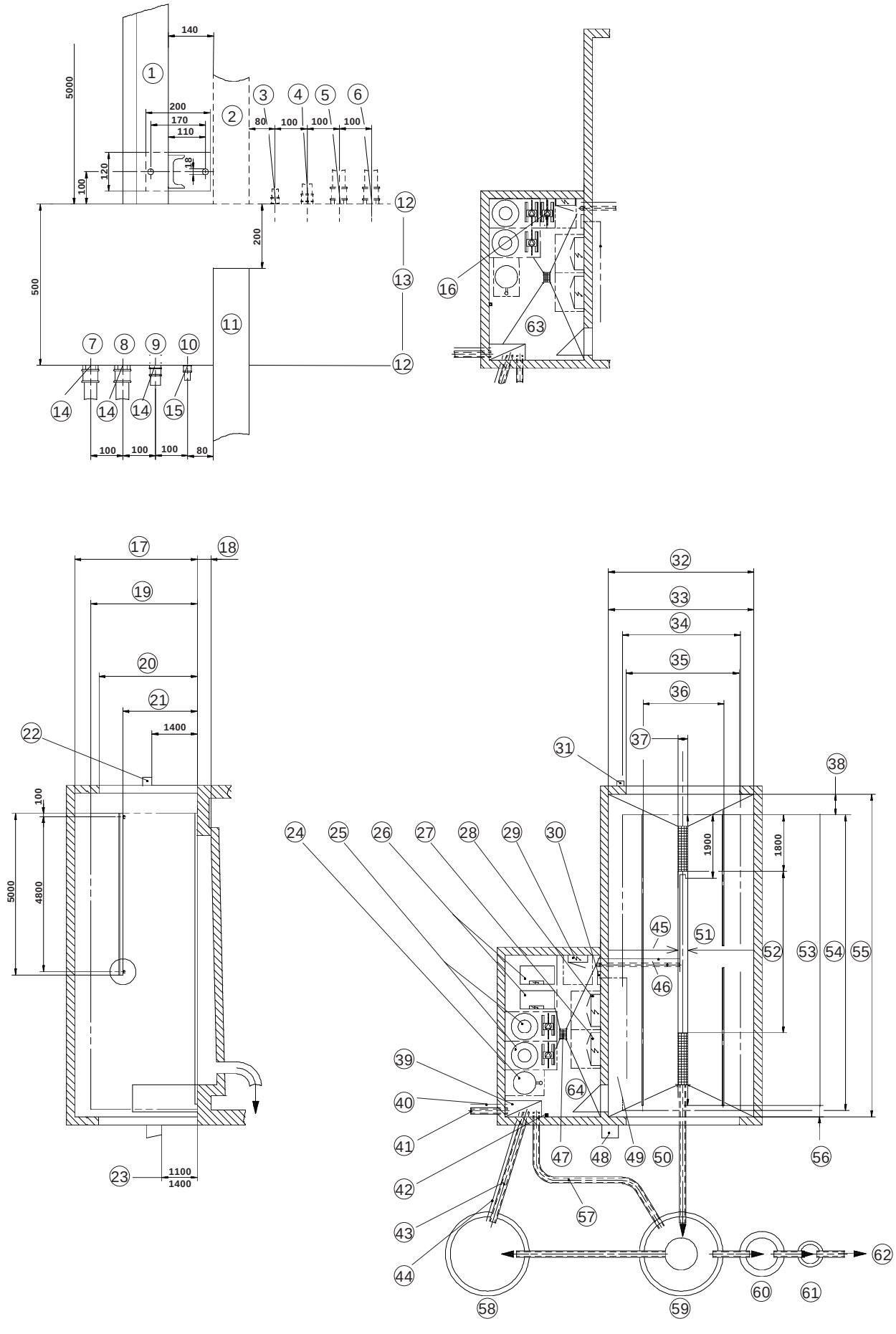
	Main system	Underbody washing system
Air supply	R 1/4"	R 1/4"
Pressure	8 bar	8 bar

Water connections: see Water Connection Schematic

Specifications subject to change without prior notice

Special dimensions available on request

Installation Plan: CWP 8000



Description

① Cable tow
② Cable duct 110 x 60 – from system control cabinet
③ Internal thread R 1/4" – air
④ Internal thread R 1" – high-pressure water
⑤ Internal thread R 1" – fresh water
⑥ Internal thread R 1" – recycled water
⑦ Rigid pipe (building fixture) R 1 1/4" – from service-water pump, 100 L/min, 4.8 bar
⑧ Fresh-water supply pipe (building fixture) R 1 1/4", 100 L/min
Flow pressure 4-6 bar via pipe isolation link
Alternatively: Rigid pipe R 1 1/4" from fresh-water pump, 100 L/min, 4.8 bar
⑨ Rigid pipe (building fixture) R 1", 60 bar from high-pressure modules
⑩ Compressed air line (building fixture) R 1 1/4", 6–8 bar
⑪ Cable duct 110 x 60 from system control cabinet
⑫ Input to cable tow
⑬ Alternative
⑭ Termination with female thread R 1"
⑮ Termination with female thread R 1/4"
⑯ Pump, 100 L/min, for underbody washing floor space requirement: 920 x 500 mm
⑰ MIN internal height of wash bay – Dimension A+50
Attention: Allow for door construction!
⑱ MIN 300 mm – with underbody washing
⑲ Service area = system height A
⑳ Internal height of door. Dimension A-160 mm – supplied ready-assembled Dimension A-580 mm – supplied disassembled
㉑ Cable tow height B
㉒ “NOT-AUS” (EMERGENCY STOP) switch (only for drive-through wash bays)
㉓ Wash card reader / operating control panel
㉔ Gravel filter 5 – floor space requirement 800 x 1.200 mm
㉕ Reservoir 500 L, with pump (fresh-water / service water) – 100 L/min, 4.8 bar – floor space requirement 920 x 1.600 mm
㉖ High-pressure units – floor space requirement 1.800 x 1.550 mm. The high-pressure units can be mounted above each other provided that the associated 500 L reservoir is mounted on a raised platform (approx. height = 650 mm). MIN room height 3.150 mm
Floor space requirement 1.100 x 1.550 mm
㉗ System control cabinet (WxHxD) 1.000x1.200x300 mm

㉘ Pump switching cabinet – water recovery (WxHxD) 1.000x1.200x300 mm, floor space requirement 1.200x900 mm

Pump switching cabinet - fresh water (WxHxD) 800x1.200x300 mm, floor space requirement 1.000x1.200 mm

Electrical connection: supply voltage 400 V / 3~ / 50 Hz / 22 kW

㉙ High-pressure distributor (WxHxD) 600x760x210 mm Floor space requirement 800x900 mm

㉚ Compressed air distributor – underbody washing (WxHxD) 380x280x120 mm

㉛ “NOT-AUS” (EMERGENCY STOP) switch (only for drive-through wash bays)

㉜ MIN internal width[1)] of wash bay – 4.400 mm (with safety gap)

㉝ MIN internal width[1)] of wash bay – 4.200 mm (without safety gap)

㉞ Service area height – 3.800 mm

㉟ MIN internal width[1)] of door – 3.600 mm (only required at one end)

㊱ Track width – 2.800 mm[1),2)]

㊲ With underbody washing – 300 mm

㊳ MIN 50 mm without safety gap
MIN 500 mm with safety gap

㊴ Utilities supply shaft

㊵ Rigid pipe (building fixture) R 1 1/2". From rain-water collection tank to 500 L fresh-water reservoir

㊶ Duct for electrical cables (building fixture). MIN Ø 50 cm, with pull-through wire from rain-water tank

㊷ Metering station – sterilization agent

㊸ Duct for electrical cables (building fixture) MIN Ø 50 cm, with pull-through wire

㊹ Rigid pipe (building fixture) R 2" – to gravel filter

㊺ Rigid pipe (building fixture) R 1" (terminated with female thread)

㊻ Duct for electrical cables (building fixture). MIN Ø 100 cm, with pull-through wire – for air hoses

㊼ Floor drain

㊽ Wash card reader or operating control panel

㊾ Compressed air (building fixture) R 1/4", 6-8 bar

㊿ MIN DN 150

(51) Gradient 1-2 %

(52) 5.100 mm – without cover, with underbody washing option

(53) Rail length[3)] – 9.000 mm

(54) Service area length – 9.300 mm

⑮ Internal length of wash bay[3)]
MIN 9.400 mm – without safety gap
MIN 9.900 mm – with safety gap
Attention: Allow for door construction!

⑯ MIN 350 mm

⑰ MIN DN 100 (building fixture)
Tank overflows, return feed path from gravel filter, service-water circulation

⑱ Pump reservoir – 3 m³

⑲ Oil separator and sediment trap – 4 m³

⑳ Light liquids separator as per DIN 1999

㉑ Control shaft

㉒ To waste disposal

㉓ Technical space for gantry washing system without high-pressure system – headroom clearance 2,500

㉔ Technical space for gantry washing system with high-pressure system – headroom clearance 2,500

1) All width dimensions refer to an effective washing width of 2.200 mm. With an effective washing width of 2.400 mm, increase dimensions by 200 mm.

2) Also available with 2.800 mm track width (effective washing width 2.200 mm), or 3.000 mm track width (effective washing width 2.400 mm)

3) For a vehicle length of 5.500 mm

These plans contain details for all available models. Before proceeding with the installation, check contents of actual order.

- For rigid pipes that are building fixtures – see Water Connection Schematic
- For electrical cables and ducts that are building fixtures – see Electrical Connection Schematic
- Routing of pipes and cables should be determined by a qualified installing engineer

Model	Effective washing height	Effective washing width	System height	Cable tow height
8306	2080	2200	2985	2110
8307	2250	2200	3155	2280
8308	2500	2200/2400	3405	2530
8309	2650	2400	3555	2680
8310	2800	2400	3705	2830

Operator-monitored Utilization

The operation of self-service washing systems requires that a knowledgeable person familiar with the system and able to initiate measures aimed at preventing possible hazards, and/or cause such action to be taken by others, can be reached at short notice. (See also your national equivalent to the German Regulations governing vehicle washing systems, VBG ZH 1/543, section 5.2.)

If there is an imminent risk of danger – to persons, animals or property – the system must be immediately deactivated by pressing the “NOT-AUS” (EMERGENCY STOP) button which is located:

- on the manual remote control
- on the wash card reader
- or as an additional fixture, installed by the operator.

Starting the system

Switching ON:
Set both master switches on the control cabinet doors to the “EIN” position (ON).

Press the button “ON after EMERGENCY-STOP” of the CWP control cabinet.

Move the gantry into the start position:

- At the control unit select the main menu (press “SHIFT” and “ESC”) and
- then press button “F5”.

The gantry moves into the rest position.

Forward

Stop

Reverse

Starting modes

If the system is in the rest position, one of the positioning lights will be illuminated. The actual light that is showing depends upon which starting mode is active.

Starting mode	Illuminated light
Standard	„Vorwärts“ – FORWARD
Time-delayed	„Stop“ – STOP
Start button	„Stop“ – STOP

For description of starting modes see “Starting and running the Washing programme” at the end of this chapter.

The system is ready for operation. The vehicle to be cleaned can be driven into the wash bay. If a wash card reader has not been installed – see Section: “Programme Selection”.

Switching ON after system has been interrupted by activating the “NOT-AUS” (EMERGENCY STOP) function

⚠ *Before the system is switched on again, the reason for pressing the “NOT-AUS” (EMERGENCY STOP) button must be identified and rectified!*

Remove the vehicle standing in the wash bay!

Release the “NOT-AUS” (EMERGENCY STOP) button. Press the “EIN nach NOT-AUS” (ON after EMERGENCY STOP) button which is located below the master switch on the CWP control cabinet.

Move the gantry into the start position:
- At the control unit select the main menu (press “SHIFT” and “ESC”) and
- then press button “F5”.

When the gantry has arrived at the rest position, the upper green positioning light “VORWÄRTS” (FORWARD) illuminates. The system is ready for operation again, and the vehicle to be cleaned can be driven into the wash bay.

Restart the washing programme from the beginning.

Switching the system OFF

The system is switched OFF by setting both master switches on the control cabinet doors to “AUS” or “0” (OFF).

⚠ *Attention:*
- frost protection, and
- service-water circulation

are also switched OFF.

Programme selection

If no wash card reader exists, the washing programmes are selected by means of the control unit or the control panel for manual operations (optional) (see chapter E).

Door Control

The wash bay doors are controlled by the gantry control unit, and an external door control unit.

There are separate control functions for summer or winter operation.

Door control during summer

Before washing begins, the doors are open.
The vehicle can enter the wash bay.

When washing commences, the doors are closed.

When washing is completed, the doors are opened, and remain so.

Door control during winter

Before washing begins, the doors are closed, and must be opened before the vehicle can enter the wash bay.

When washing commences, the doors are closed.

When washing is completed, the doors are opened, and as soon as the vehicle has been driven out of the wash bay, they close again.

Modifying the door control

By using the control unit and the door-control menu, the operating mode of the doors can be set to summer or winter mode. (See chapter E for working with the control unit).

Important!

In the door control menu, other parameters can be set in addition to the operating mode. The setting of these functions is for technically qualified personnel only.

The following sequence of steps should be carried out for changing the operating mode:

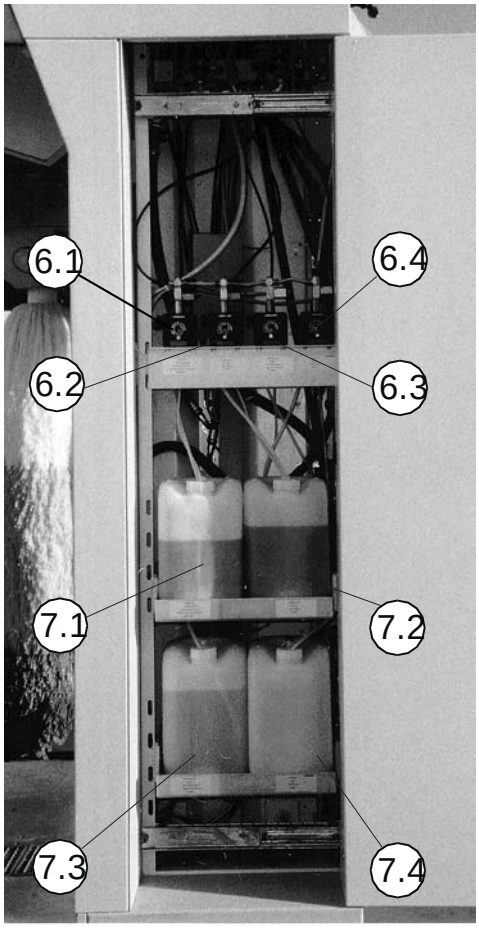
- Select door control menu by
  - pressing the button –1 in the main menu and going down until the ➔ blinks on door control
  - Press menu selection button ➔
- Get function “Operating mode, doors” with the –1 button into the lower display line
- Press “MOD” button twice: the variable behind the text “Operating mode, doors” blinks
- The value of the variables can be changed by using the buttons +1 and –1. The meaning of the possible values is as follows:

0	The doors are not being activated by the washing system
1	Summer mode: the doors remain open after each wash
2	Winter mode: The doors are closed after each wash

- the set variable is accepted when the “ENTER” button is pressed.

Metering Pumps

The metering pumps are located in the RH gantry column behind the sliding door.



Depending upon which washing programme has been selected, the metering pumps supply a corresponding amount of the following detergents into the water used for washing:

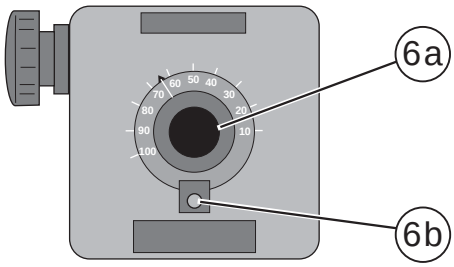
- Drying agent (6.1, 7.1)
- Hot wax (6.2, 7.2)
- Pre-wash (6.3, 7.3)
- Shampoo (6.4, 7.4)

⚠ *The optimum dosage has been preset in the factory. No further adjustment is normally necessary.*

Adjusting the dosage

A scale with graduations from 10 to100 is imprinted onto the metering pump housing. Locking screw (6b) is used to prevent the rotary knob (6a) from moving out of position.

⚠ *Never adjust the dosage whilst the metering pump is idle. Otherwise damage to the pump is inevitable!*



- Switch on the metering pump as described in the chapter “Inspection and Maintenance”.
- When the metering pump is running, adjust the dosage as follows:
  – loosen locking screw 6b,
  – turn rotary knob 6a to the desired dosage level.
  reduce = turn clockwise
  increase = turn anti-clockwise
- secure the rotary knob by tightening the locking screw
- switch OFF the metering pump.
- if required, switch ON the next metering pump, and repeat the previous process until all metering pumps have been adjusted.
- Quit manual control mode (see chapter I, Inspection and Maintenance).

Self-service Utilization

General information

"NOT-AUS" (EMERGENCY STOP) Procedure

If there is an imminent risk of danger – to persons, animals or property – the system must be immediately deactivated by pressing any of the "NOT-AUS" (EMERGENCY STOP) buttons which are located:

- *on the control unit*
- *on the wash card reader*
- *on the control panel for manual functions (optional)*
- *on the control cabinets*
- *or as an additional installation by the operator.*

The following types of vehicle may not be washed in this system

The Automotive Gantry Washing System is not suitable for washing:

- specially modified vehicles, such as:
  - vehicles having roof extensions projecting past the windscreen, and types of roof constructions featuring alcove superstructures
  - construction and/or road-building equipment
- vehicles with trailers
- two-wheeled vehicles
- convertibles with opened top.

If the preceding instruction is not strictly observed, the supplier/manufacturer shall not be liable for any consequences arising from the improper use of the Automotive Gantry Washing System, i.e., such as the following:

- personal injuries
- damage to property or equipment
- injury to animals or livestock.

The following vehicles may be washed under supervision

The following vehicles may be washed under the close supervision of the system operator. Manual intervention by the system operator may be required.

Normal washing

- vehicles with lowered chassis, and low front spoilers
- vehicles with spare wheels mounted externally at the rear.

High-pressure washing

- vehicles with open load surfaces (e.g., pickups).

Before driving into the wash bay

Before you drive into the wash bay
- close:
  - all windows
  - sliding roofs, etc.
- retract all aerials.
  If an aerial can not be fully retracted, bend it towards the rear of the vehicle, or remove it completely.
- fold inwards:
  - particularly large side mirrors, or those that protrude well out from the side of the vehicle.
- remove any parts of the vehicle that are loose;
  for example:
  - decorative strips
  - spoilers
  - bumpers
  - door handles
  - exhaust pipes
  - wind deflectors
  - ropes for canvas or plastic covers
  - rubber seals
  - externally-mounted sun visors
  - luggage racks.

While driving into the wash bay

While driving into the wash bay the positioning lights mounted at the top right of the gantry show you whether you should
- drive forward
- stop = position is correct
- reverse.

Position your vehicle pointing straight forward, and in the middle between the gantry tracks.
- Switch the engine OFF.
- Leave in gear, or, in the case of automatics, select “P”.
- Put the handbrake ON.

Types of Wash Cards

Single wash card

The single wash card stores information for one washing programme only.
The card is not returned to the customer after use.

Using the single wash card

Push the card into the wash card reader. The display shows the applicable programme.

The card remains within the card reader after use.

Multi-unit card

The multi-unit card stores information for a pre-determined quantity of washes, all of the same programme type. The card can be repeatedly used until the stored quantity of washes has been consumed.

Using the multi-unit card

Push the card into the wash card reader.
The display shows
- the applicable programme, and
- the remaining quantity of washes available with this card.

After the current wash has been subtracted from the card, it is ejected by the reader for return to the customer, provided that there is still at least one outstanding wash available.

Wash debit card

The wash debit card stores a pre-determined monetary value.
This credit amount is reduced by the applicable charge every time a washing programme is started.
After the wash has been completed the card is returned to the customer, and can be used for subsequent washes until the credit value has been consumed.

If the remaining credit value is insufficient to cover the cost of the selected programme, the card is rejected by the reader. The card should be taken to the service desk where it will be reprogrammed with a new value that includes the previous outstanding amount.

Using the wash debit card

Push the card into the reader.
The display shows
- the remaining credit value.

Select your washing programme:
- Press the “PROGRAMMWAHL” (PROGRAMME SELECTION) button with the number of the required programme.
  – The selected programme is shown in the display.

Press:
- the “KORREKTUR” (CORRECTION/CANCEL) button if you want to change your selection.
- the “BESTÄTIGEN” (CONFIRM) button to start the washing programme.

The outstanding value stored on the card is reduced by the cost of the washing programme.
The card with its new residual value is returned to the customer.
If this value is insufficient to cover the cost of the next selected programme, the card is rejected by the reader. The card should be taken to the service desk where it will be reprogrammed with a new value that includes the previous outstanding amount.

Starting and running the Washing programme

Start mode – “STANDARD”

The doors open (in winter), or are already open (in summer).

Drive into the wash bay, and correctly position your vehicle.

⚠ *Observe the positioning lights in the gantry.*

Push the single wash card into the card reader. The wash programme commences.

⚠ *The doors close as soon as the washing programme commences. Upon completion of the programme, the doors are opened again.*

Drive your vehicle out of the wash bay.

Start mode – “ZEITVERZÖGERT” (TIME-DELAYED)

Push the wash card into the card reader.

The doors open automatically (in winter), or are already open (in summer).

Drive into the wash bay, and correctly position your vehicle.

⚠ *Observe the positioning lights in the gantry.*

After a pre-determined time-lapse, the washing programme commences.

⚠ *The doors close as soon as the washing programme commences. Upon completion of the programme, the doors are opened again.*

Drive your vehicle out of the wash bay.

Start mode – “START-TASTE” (PRESS START BUTTON)

Push the wash card into the card reader.

The doors open automatically (in winter), or are already open (in summer).

Drive into the wash bay, and correctly position your vehicle.

⚠ *Observe the positioning lights in the gantry.*

Press the “START” button on the wash card reader.
The washing programme commences.

⚠ *The doors close as soon as the washing programme commences. Upon completion of the programme, the doors are opened again.*

Drive your vehicle out of the wash bay.

Interrupting the washing programme

If a situation arises where it becomes necessary to interrupt the washing programme,
- press the “HALT” (STOP) button.

The programme is interrupted.

When the reason for the interruption has been resolved,
- press the “WEITER” (CONTINUE) button.

The programme restarts at the point where it was interrupted.

When the wash has been completed

The washing process has ended when the green lamp in the positioning lights illuminates.
- If you have used a multiple wash card or a value card, collect your wash card from the reader.
- Drive your vehicle out of the wash bay.

The green lamp in the positioning lights indicates the direction of travel.

Cleaning and Care

The moisture that is generated during operation, and the use of detergents in the system, make it necessary to clean the Automotive Gantry Washing System CWP 8000 at regular intervals.

Before commencing maintenance work on the system

Switching OFF
Before you begin any maintenance or repair work on the system,

- disable the supply voltage by turning the master switch OFF.

Security
Protect the system against inadvertent activation by unauthorized persons:

- secure the master switch in the OFF position. See also your national equivalent to the German *Regulations governing vehicle washing systems, VBG ZH 1/543, section 5.2.*

Metal panels

Wash metal panels with a sponge soaked in a detergent solution.

Repair any scratches in the paintwork.

Rail tracks

Use a cloth soaked in a detergent solution, or a high-pressure cleaner, to remove grease and cleaning agent deposits from the rail tracks.

Inspection and Maintenance

The moisture that is generated during operation, and the use of detergents in the system, make it necessary to subject the Automotive Gantry Washing System CWP 8000 to a formal inspection, and carry out preventative maintenance tasks at regular intervals.

Who is permitted to carry out inspection, maintenance and upkeep?

- **Operator**
  Tasks which are indicated “Operator” may only be carried out by suitably instructed personnel who have the capability of servicing and maintaining the washing system properly.

- **Customer Service**
  Tasks which are indicated “Customer Service” may only be carried out by Kärcher Customer Service maintenance personnel.

Definitions according to DIN 31051:

Inspection
Ascertaining the current status

Maintenance
Action taken to maintain the correct status (prevent the occurrence of a fault condition)

Repair
Action taken to recreate, or return to, the correct status

Servicing
Inspection, maintenance, and repair if required

Carrying out servicing on the system

Switching the system OFF
Before commencing work, set the master switch to “AUS” (OFF), and protect against inadvertent reactivation.
See also your national equivalent to the German *Regulations governing vehicle washing systems, VBG ZH 1/543, section 5.2.*

Work on the system
Carry out servicing as required.

Switching the system ON
To start up the system, set the master switch to “EIN” (ON).
If necessary, move the gantry into the rest position.

Service mode

In order to protect your own safety, and that of third parties, the system must be switched OFF prior to commencing maintenance or servicing work.
However not all parts of the system which need maintaining are easily accessible. For this reason it becomes necessary to move certain system components during the course of maintenance or upkeep work. This is what the operating mode “Manual control” is for. The manual control system is effected with the control unit.

Attention!

⚠ *For your own safety, and that of third parties, always proceed in the following order:*

1. *Switch system ON*
2. *Select operating mode “Manual control” (see chapter E)*
3. *Move system component into desired position*
4. *Switch system OFF, and prevent inadvertent reactivation*
5. *Carry out servicing task*

Requirement before calling up manual control:

- No vehicle should be standing under the gantry.

Manual control

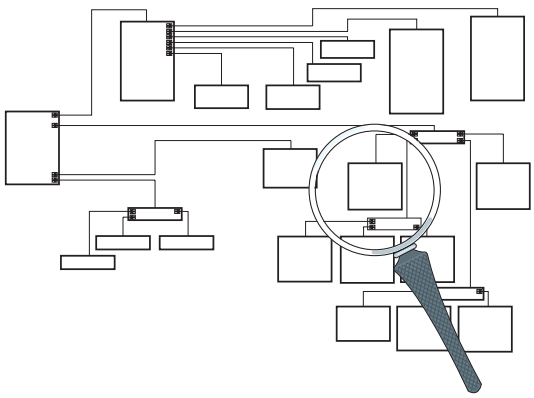
Manual control of the system is used when maintenance tasks are being carried out.

⚠ ***Caution!***

Risk of damage to installation and vehicle.
Do not use manual control for washing purposes.

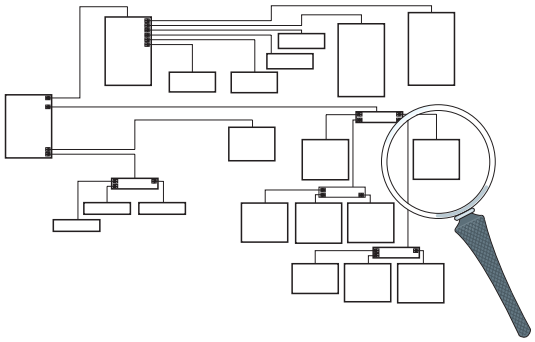
In manual control the individual system components can be switched on and off individually. There are 8 menus available with appropriate assignment of the function buttons.

Manual control / Brushes



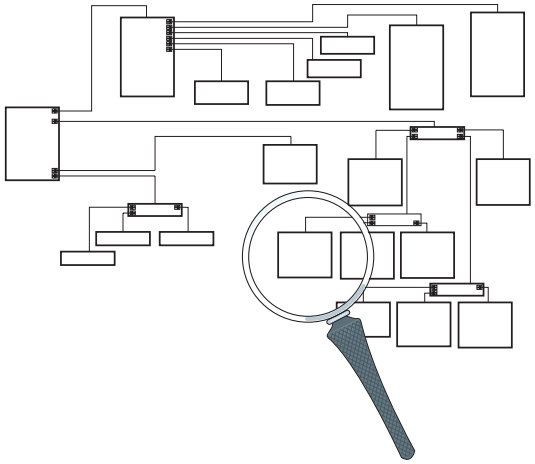
F1 Roof brush LIFT for as long as button pressed	**F2** Roof brush LOWER for as long as button pressed
F3 Side brush 1 (left) move OUT for as long as button pressed	**F4** Side brush 1 (left) move IN for as long as button pressed

F5 Side brush 2 (right) move OUT for as long as button pressed	**F6** Side brush 2 (right) move IN for as long as button pressed
F7 Roof brush rotate ON/OFF	**F8** Side brushes rotate ON/OFF



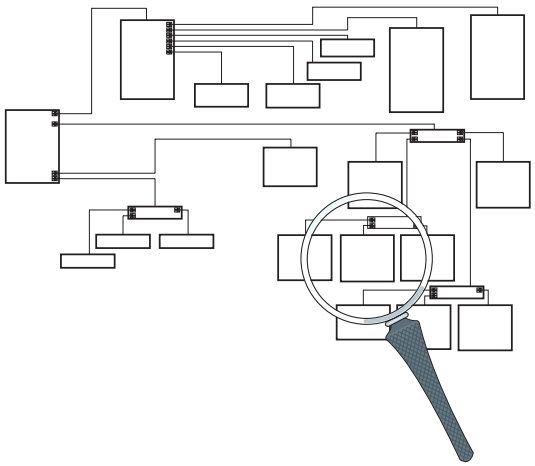
Manual control / Dryer

F1 Dryer LIFT for as long as button pressed	**F2** Dryer LOWER for as long as button pressed	**F5** Blower motor roof nozzle 1 (left) ON/OFF	**F6** Blower motor roof nozzle 2 (right) ON/OFF
F3 –	**F4** Blower flap SWIVEL/ SWIVEL BACK	**F7** Blower motor side nozzle 3 (left) ON/OFF	**F8** Blower motor side nozzle 4 (right) ON/OFF



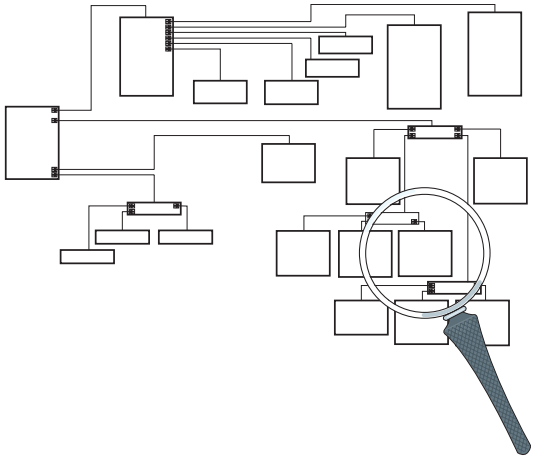
Manual control / Water / High pressure

F1 High-pressure nozzles forwards ON/OFF	**F2** High-pressure nozzles backwards ON/OFF	**F5** High-pressure nozzles side bottom ON/OFF	**F6** High-pressure nozzles wheel washers ON/OFF
F3 High-pressure nozzles side top ON/OFF	**F4** High-pressure nozzles side middle ON/OFF	**F7** High-pressure tilting roofnozzle TILT TOWARDS, AWAY / STOP	**F8** HP foampump ON/OFF



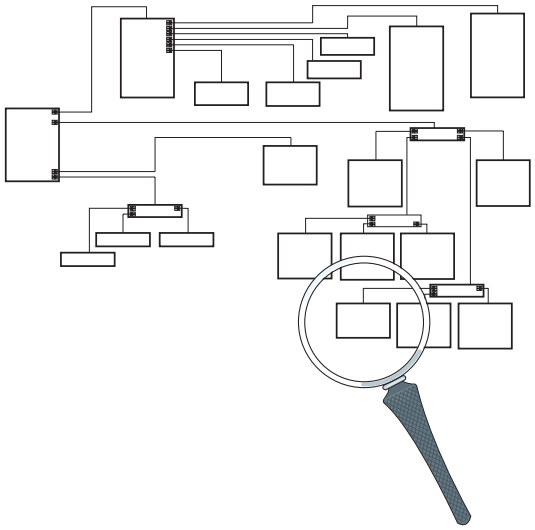
Manual control / Water / Water

F1 Final rinse arch ON/OFF	**F2** Hotwax arch ON/OFF	**F5** Doserpump prespray ON/OFF	**F6** Doserpump shampoo ON/OFF
F3 Foam arch ON/OFF	**F4** Prespray arch ON/OFF	**F7** Doserpump drying ON/OFF	**F8** Doserpump hot wax ON/OFF



Manual control / Water / Pumps

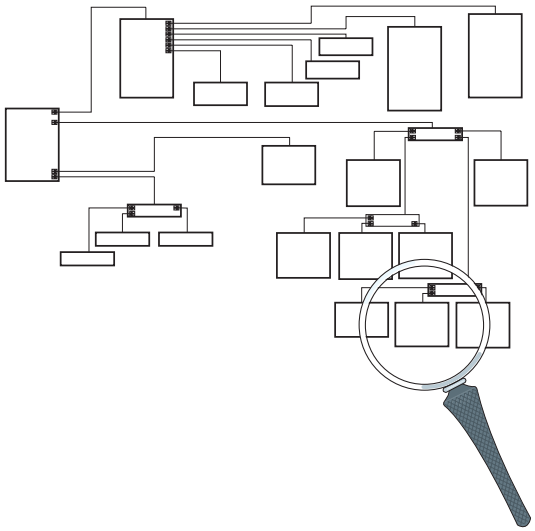
F1 Osmosis water pump ON/OFF	**F2** Hot water pump ON/OFF	**F5** Used water pump ON/OFF	**F6** High-pressure pump 1 ON/OFF
F3 Microemulsion side ON/OFF	**F4** Fresh water pump ON/OFF	**F7** High-pressure pump 2 ON/OFF	**F8** Underbody wash START



Manual control / Machine / Gantry

F1 Gantry forwards for as long as button pressed	**F2** Gantry backward for as long as button pressed	**F5** Speed 4 ON/OFF	**F6** Speed 8 ON/OFF
F3 Speed 1 ON/OFF	**F4** Speed 2 ON/OFF	**F7** –	**F8** –

Gantry speed	Speed 1	Speed 2	Speed 4	Speed 8
1	**1**	0	0	0
2	0	**1**	0	0
3	**1**	**1**	0	0
4	0	0	**1**	0
5	**1**	0	**1**	0
6	0	**1**	**1**	0
7	**1**	**1**	**1**	0
8	0	0	0	**1**
9	**1**	0	0	**1**
10	0	**1**	0	**1**
11	**1**	**1**	0	**1**
12	0	0	**1**	**1**
13	**1**	0	**1**	**1**
14	0	**1**	**1**	**1**
15	**1**	**1**	**1**	**1**



Important!

If no gantry speed is selected with buttons F3–F6, the following applies:

- *If all system components are in the outer end position, the gantry moves at speed 12.*
- *If one system components is not in the end position, the gantry moves at speed 4.*

Manual control / Machine / Wheelwash / Positioning light

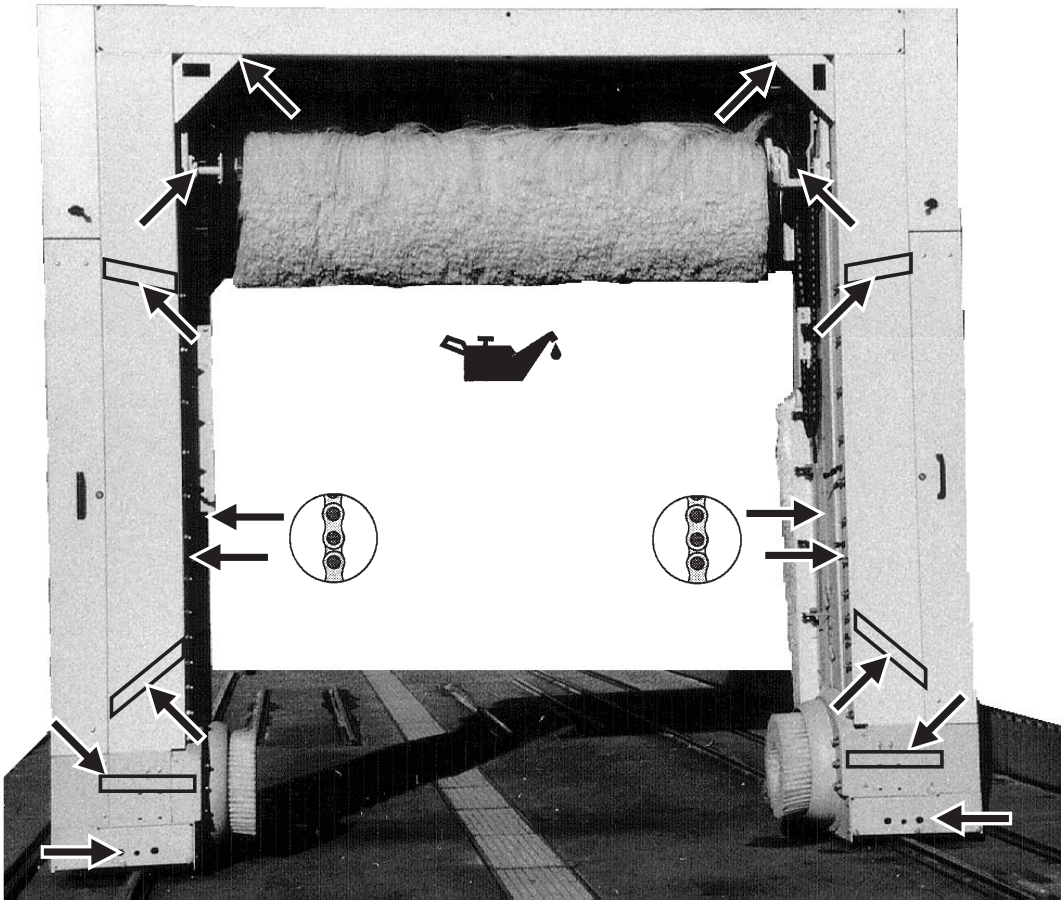
F1 Wheelwash rotate ON/OFF	**F2** Wheelwash MOVE IN/ MOVE OUT
F3 Positioning light Forwards ON/OFF	**F4** Positioning light Stop ON/OFF

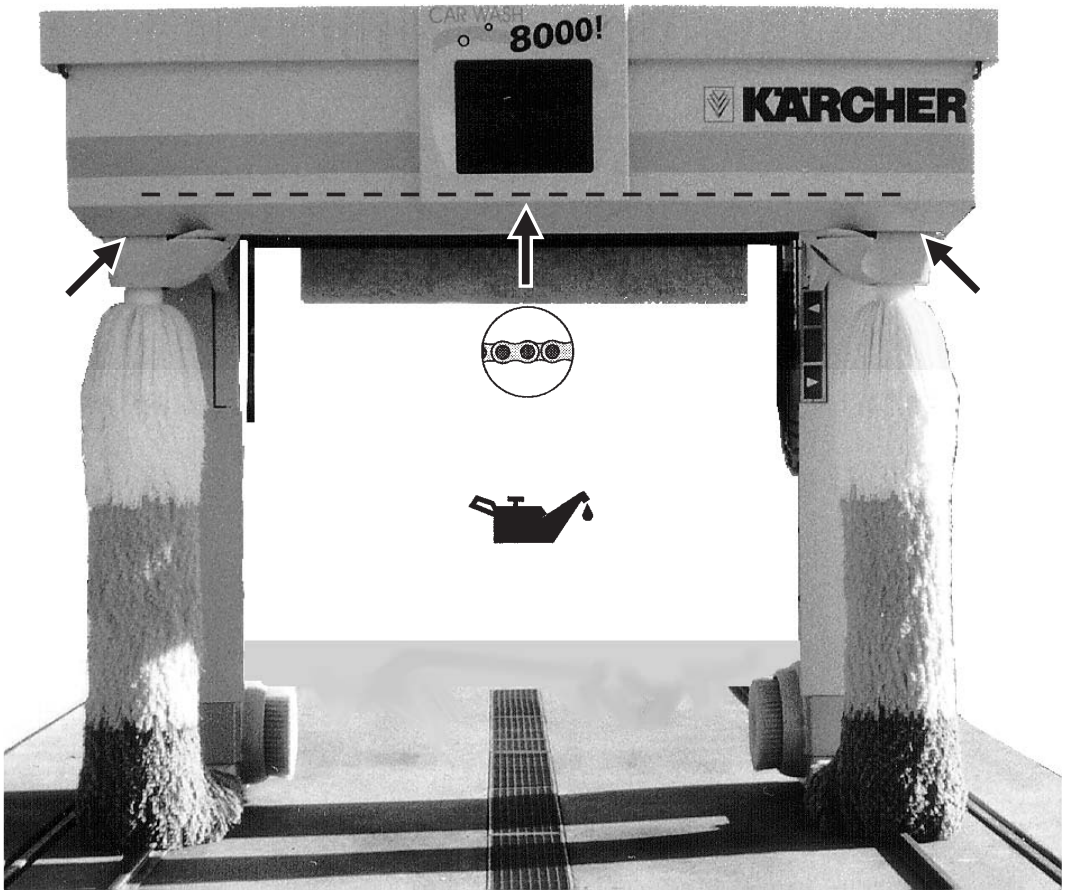
F5 Positioning light Back Up ON/OFF	**F6** Blow down ON/OFF
F7 Spotlight side brush ON/OFF	**F8** Roofbrush, dryer fast mode up/down (1.6x) ON/OFF

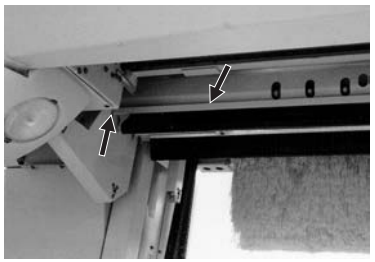
Manual control / Machine / Display

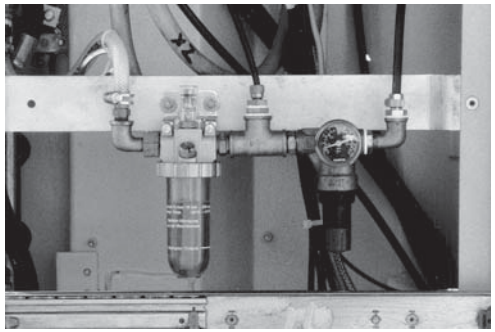
The functions in this menu are for qualified technical personnel only.

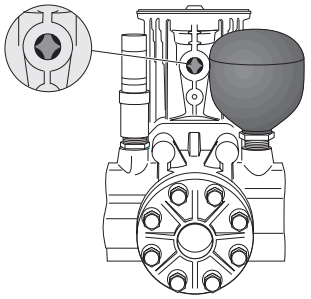
Lubrication Plan

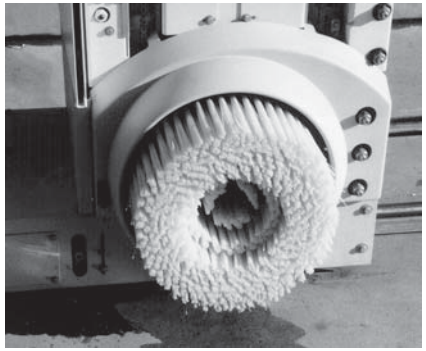




Inspection and maintenance				
Interval	**Task**	**Location**	**Tools and materials**	**By whom**
Daily	Check "NOT-AUS" (EMERGENCY STOP) buttons and switches	Manual remote control Wash card reader All other "NOT-AUS" (EMERGENCY STOP) switches in the system	Start system (see page G1) Press "NOT-AUS" (EMERGENCY STOP) button System must stop immediately Restart system – press "EIN nach NOT-AUS" (ON after EMERGENCY STOP) button	Operator
	Check cleaning agent levels	Cleaning agent reservoirs in gantry column 2	Fill up, if required	Operator
	Check that spray nozzles are not blocked	Nozzles: in dryer blower bars in gantry columns in front panels	Visual check. Clean, if required Attention! Do not mix up nozzles! List of nozzle distribution see spareparts list. Remove and clean each nozzle individually Replace immediately	Operator
	Remove loose objects	Whole wash bay	Brush, shovel	Operator
	Wipe faces of light barriers	LH and RH dryer blower bars LH and RH columns LH and RH running gear	Soft lint-free cloth moistened with glass cleaning liquid or water Do not use tools with sharp edges!	Operator
	Check water drain at dryer blower bar if dirty	dryer blower bar frontside and backside 	Check drain if dirty and clean if necessary. Keep gaps between drain and light barrier holder free of dirt.	Operator
	Check that no debris or other obstacle is entangled in the brushes	Vertical side brushes Roof brush Wheel brushes	Visual check	Operator

Inspection and maintenance				
Interval	**Task**	**Location**	**Tools and materials**	**By whom**
Daily	Check oil level	Compressed air lubricator in column 1 	Fill up, if required, with one of the following: AVIA Avilub RSL 10 BP Energol HLP 10 ESSO Spinesso 10 SHELL Tellus Oil C 10 Mobil DTE 21 Blaser Blasöl 154 FESTO Special Oil (207 872 OFSW-1)	Operator

Inspection and maintenance				
Interval	**Task**	**Location**	**Tools and materials**	**By whom**
Weekly, or after 500 washes	Lubricate drive chains	See Lubrication Plan: Column 1 and 2 Gantry superstructure Running gear 1 and 2	Chain spray 6.288-051	Operator
	Lubricate guide rollers and tracks	See Lubrication Plan: Column 1 and 2 Dryer blower bar (roof bar) Side brush rails	Grease 6.288-059	Operator
	Check oil level	High-pressure water pump 	The glass indicator must be full! See high-pressure system handbook for oil type	Operator
	Check high-pressure water pumps for leakage	High-pressure modules	Visual check	Operator
	Check high-pressure water pump operating pressure	High-pressure modules	Switch high-pressure module ON, Read level on high-pressure module	Operator
	Lubricate all bearings	See Lubrication Plan: In running gear 1 and 2 On LH and RH side brush flanges am Laufwagen der Dachbürste an den Hubwellen im Oberteil	Tools for removing metal panels, Grease gun filled with Grease 6.288-051	Operator
	Check for leaks in hoses, pipes, pipes, etc.	Hoses In the energy chain In the gantry	Visual check	Operator

Inspection and maintenance				
Interval	**Task**	**Location**	**Tools and materials**	**By whom**
Monthly, or after 2000 washes	Lubricate telescopic rails	Wheel washing assembly 	Grease 6.288-059 Tools for removing panels Move wheel washing unit in / out: See end of chapter. Move wheel washing unit out. Remove column panels. Lubricate telescopic rails. Replace panels Move wheel washing unit back in.	Operator
		Sliding doors	Grease 6.288-059	Operator
	Kettenspannung überprüfen Hubketten Dachbürste Hubketten Trockner Ketten Seitenbürsten verfahren	in der Säule 1 und 2, hinter der Frontverkleidung	Tighten, if required	Operator
	Clean filters	In compressed air maintenance unit		Operator
		Filters in hoses leading from detergent reservoirs to metering pumps	Unscrew container lids, wash filters in clean water	Operator
	Check if limit switches are fixed well	Limit switches: in runnig gear (3 pcs.) in column 1 (4 pcs.) in side brush track (4 pcs.)	Check if limit switches are fixed well. Tighten loose limit switches without tools by hand	Operator
	Check mounting bolts on rail tracks, and tighten if required	Wash bay, rail track mounting bolts	Spanner	Operator

Repairs

⚠ *Attention should be given to the safety information on Page D1!*

Servicing the system

Switching the system OFF

- Before commencing work, set the master switch to “AUS” (OFF), and protect against inadvertent reactivation.

Work on the system

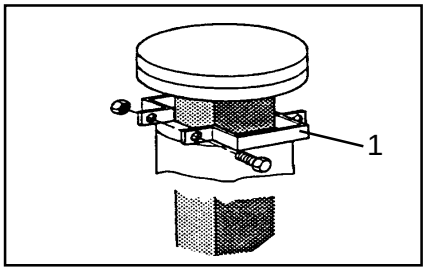
- Carry out repairs.

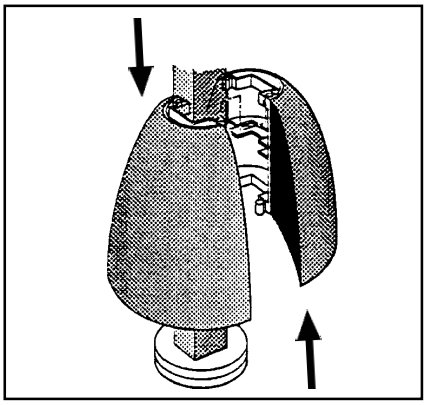
Switching the system ON

- To start up the system, set the master switch to “EIN” (ON).

If necessary, move the gantry into the rest position.

Replacing roof and side brushes



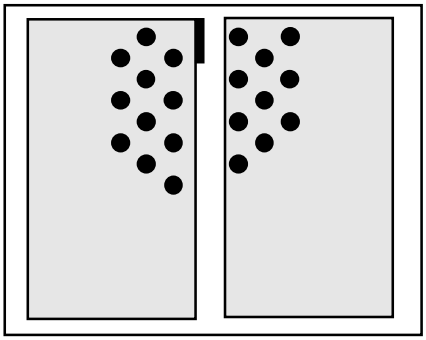


The brush consist of individual segments, whereby each segment is made up of two brush elements. Each brush element is connected with its opposite number by tongue and groove (interlocking). At the end of each brush shaft there is an end clamp (1) which prevents the individual segments from moving on the shaft.

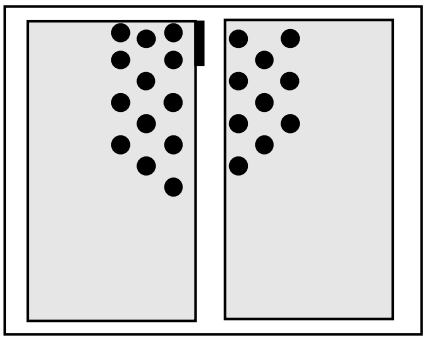
⚠ *Accident hazard during maintenance work. Switch system off at the master switch, and ensure that it cannot be switched on again unintentionally.*

- Remove bolts in end clamp.
- Push two opposing brush elements in opposite directions so that they can be lifted off shaft.
- After old brush elements have been removed, fit replacements as follows.

Replacing roof and side brushes



type 1



type 2

⚠ *Accident hazard! There are two different types of brush element in use which should under no circumstances be mixed. The brush elements could otherwise become detached from the shaft while the system is operating.*
The two types differ by the configuration of the fiber bundles at the end and beginning of the brush element. In order to avoid the brush elements becoming unbalanced, and any damage that would follow from this, the following must be observed:
Brush elements should always be replaced in pairs, that is a whole segment at one time.
Along the joint the fiber bundles must always be offset from those on the opposite brush element.

- Assemble brush elements so that they correspond to configuration shown in spare parts list.
- Fit first pair of brush elements by pushing both halves together (analogous to disassembly).
- Fit second pair offset by 90° to first, and push tight against first pair.
- Continue in same way until brush shaft is fully equipped.
- Refit end clamp. Push it up tight against last segment, and bolt in position.

⚠ *Accident hazard! After assembling the brush elements, check to ensure that they have been fitted correctly and the bolts in the end clamp are properly tightened.*

Fit new wheel-washing brush

Move wheel washers in (washing position) with the manual control.

⚠ *Turn system OFF at the master switch!*
Protect against inadvertent reactivation!

The brush is secured by three bolts.

Unscrew the screws and take off worn brush.

Fix the new brush into place with the three screws.

Troubleshooting

⚠ *For your own safety, and that of third parties, please pay attention to chapter C "Safety Regulations".*

Who is permitted to remedy faults?

- **Operator**
  Tasks which are indicated "Operator" may only be carried out by suitably instructed personnel who have the capability of servicing and maintaining the washing system properly.

- **Customer Service**
  Tasks which are indicated "Customer Service" may only be carried out by Kärcher Customer Service maintenance personnel.

Switching the system OFF

- Before commencing work, set the master switch to "AUS" (OFF), and protect against inadvertent reactivation.

Fault repairs

- Repair the indicated and/or identified fault.

Switching the system ON

- Start the system; turn the master switch to "EIN" (ON).

Return the gantry to the rest position, if required.

Fault diagnosis

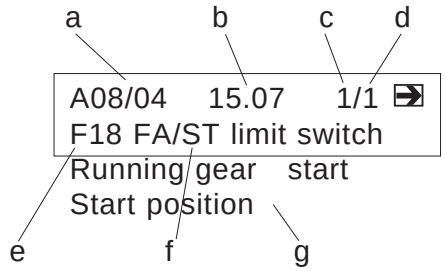
There are two types of fault that can occur with the Automotive Gantry Washing System CWP 8000:

- Faults which are detected by the control system of the installation and as far as possible remedied you will find listed in Table 1.

- Faults which are not detected by the control system of the installation and therefore are neither automatically remedied nor displayed you will find listed in Table 2.

Display of faults

Faults detected by the control system are shown on the display of the control unit. The control system classifies faults in three groups.

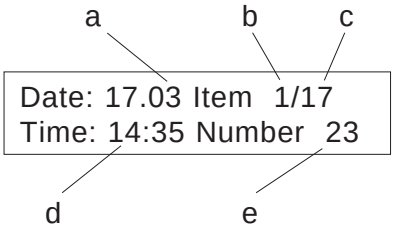


Fault message of critical faults or less critical faults:

- a Date of fault occurrence
- b Time of fault occurrence
- c Displayed fault
- d of ... faults
- e Fault number
- f Fault text in display
- g Fault text accessible with button –1

F5/1 Roof brush is not up

Position faults



Faults list:

- a Date of fault occurrence
- b Number of fault list:
  - 1 Gantry 1
  - 2 Gantry 2
  - 3 Pumps/water shortage
- c Fault number
- d Time of fault occurrence
- e Current number in the list

- critical faults:
  - the washing sequence has stopped
  - the lights of the positioning light are flashing alternately
  - the LED “ALARM” on the control unit is blinking
  - the fault is shown on the display
  - the fault is in the list of faults “Faults display / gantry 1” or “Faults display / gantry 2”

- Less critical faults:
  - the “ALARM” LED on the control unit blinks
  - the fault is displayed on the screen
  - the fault is in the list of faults “Fault display / pumps / water shortage”

- Position fault:
  - The fault is indicated on the display

Procedure when faults are displayed

- Read off the fault shown on the display
  - Displayed faults which take up more than 2 lines can be viewed using the button -1
  - When several faults have appeared at the same time, you can use the ➔ to scroll through them
- Faults according to the data in Table 1. Remedying detected and displayed faults
- Acknowledge fault message by pressing the “ENTER” button for longer than 3 seconds. Acknowledgment is not required for position faults.

Fault lists

Faults occurring are stored in three different lists:

critical faults Gantry 1	Faults display / gantry 1
critical faults gantry 2 *)	Faults display / gantry 2
less critical faults	Faults display / pumps/water shortage
position fault	–
*) only with tandem or cycling systems	

The most recent 40 faults are stored in each list.

The following function buttons are active for viewing the list and making deletions

F1 Scroll UP	**F2** –	**F5** –	**F6** –
F3 Scroll DOWN	**F4** –	**F7** –	**F8** Current faults list DELETE (Press for 10 sec.)

Table 1: Faults Detected by the System, and Shown in the Display

Detected and displayed faults (less critical faults)			
Display	**Possible Cause**	**Remedy**	**By whom**
F1...	Control voltage failed	Press “On” button	Operator
F2...	Side brushes are not in outer position	Move system into start position (see below)	Operator
F3...	Side brush 1 not in outer position		
F4...	Side brush 2 not in outer position		
F5...	Roof brush is not in top position		
F6...	Dryer is not in top position		
F7...	Wheelwashers are not retracted		
	Wheelwasher is dirty or jammed, lack of compressed air	Clean, grease guide rails. Restore compressed air supply	Operator
F8...	Wheelwasher 1 is not retracted	Move system to start position (see below)	Operator
	Wheelwasher is dirty or jammed, lack of compressed air	Clean, grease guide rails. Restore compressed air supply	Operator
F9...	Wheelwasher 2 is not retracted	Move system to start position (see below)	Operator
	Wheelwasher is dirty or jammed, lack of compressed air	Clean, grease guide rails. Restore compressed air supply	Operator
F10...	Gantry has been moved out of start position	Move system to start position (see below)	Operator
F11...	After switching on, no start position move made		
F12...	Side brush 1 (left) is caught Safety switch blocked	Release side brush Check switch	Operator
F13...	Side brush 2 (right) is caught Safety switch blocked	Release side brush Check switch	Operator
F14...	Dryer pressure switch is operated	Check safety switch	Operator

This is how you move the gantry into the start position:

- On the control unit, select the main menu (press “SHIFT” and “ESC”) and
- then press button “F5”

Detected and displayed faults (critical faults)			
Display	**Possible Cause**	**Remedy**	**By whom**
F17...	Metal object on ground,limit switch or cable defective	Clear ground, check limit switch, cable, replace	Operator/ Customer Service
F18...			
F19...			
F20...	Limit switch roof brush top/bottom dirty or defective, cable defective	Check limit switch, if required replace, check cable	Operator/ Service
F21...	Limit switch side brush 1 outer/inner dirty or defective, cable defective		
F22...	Limit switch side brush 2 outer/inner dirty or defective, cable defective		
F23...	Limit switch dryer top/bottom dirty or defective, cable defective		
F30...	Travel path counter loose or defective, cable defective	Check output signal of the travel path counter when gantry moving, if required replace	Customer Service
F31...	Travel path counter wrong direction	Change connections a/b	Customer Service
F32...	Roof brush lift path counter or cable defective	Check output signal of lift path counter when brushes move up and down, if required replace	Customer Service
F33...	Roof brush lift path counter wrong direction	Change connections a/b	Customer Service
F34...	Dryer lift path counter or cable defective	Check output signal of lift path counter when dryer moves up and down, if required replace	Customer Service
F35...	Dryer lift path counter wrong direction	Change connections a/b	Customer Service
F36...	Roof brush overload/underload	Check power meter	Customer Service
F37...	Side brushes overload/underload	Check power meter	
F42...	Flow switch (no water)	Check water supply	Operator

Detected and displayed faults (Position fault)			
Display	**Possible Cause**	**Remedy**	**By whom**
F81...	High pressure pump 1 overloaded or too hot	Check motor protection switch, adjust through-flow of cooling water	Customer Service
F82...	High pressure pump 2 overloaded or too hot		
F83...	Filter dirty	Start back wash cycle. Note maintenenace instructions from filter manufacturrer	Operator
F84...	Waste water tank is empty	Check waste water system	Operator
F86...	Used water tank is empty	Check used water system	Operator
F87...	Fresh water tank is empty	Check fresh water system	Operator
F90...	Frost protection level 1	–	–
F91...	Frost protection level 2		
F92...	Entrance door 1 is not closed	Check door limit switch	Customer Service
F93...	Entrance door 1 is not open		
F94...	Exit door 2 is not closed		
F95...	Exit door 2 is not open		
F96...	Exit door 3 is not closed		
F97...	Exit door 3 is not open		

Faults detected by the system, and shown in the display	
Traffic lights signal	**Fault**
Forward flashes once	Overload switch side brush 1 activated
Forward flashes twice	Overload switch side brush 2 activated
Forward flashes three times	Wheel washing unit 1 not in outer position
Forward flashes four times	Wheel washing unit 2 not in outer position
Forward flashes five times	Security switch dryer activated
Forward flashes six times	Safety switch vehicle width/position (optional) activated
All lights on permanently	Washing cycle or waiting time too long. Restart with button "Weiter" (resume)

Table 2: Faults Not Detected by the System, Nor Shown in the Display

Faults not detected by the system, nor shown in the display			
Problem	**Possible cause**	**Remedy**	**By whom**
Gantry does not move into the rest position	“NOT-AUS” EMERGENCY STOP function has been activated No supply voltage	Check “NOT-AUS” EMERGENCY STOP indicators adjacent to control module. Release corresponding “NOT-AUS” EMERGENCY STOP button.	Operator
System stops during washing process	“NOT-AUS”" EMERGENCY STOP function has been activated No supply voltage	Check “NOT-AUS” EMERGENCY STOP indicators adjacent to control module. Release corresponding “NOT-AUS” EMERGENCY STOP button.	Operator
Inadequate cleaning results	No, or insufficient, detergent supply No, or insufficient, air pressure in the supply line Worn-out brushes	Check reservoir levels, and fill up if required. Check air pressure, and adjust if required (See “Air Connections”, Chapter F). Clean suction filter. Check supply lines for damage. Check condition of brushes, and replace if required.	Operator
Insufficient or no water ejected from nozzles	Blocked dirt trap Insufficient water pressure Blocked nozzles Defective solenoid valve or cable	Clean dirt trap. Check pumps and water pressure. Clean nozzles with compressed air. Check solenoid valves and supply lines electrical and water, and repair if required.	Operator
After washing is completed, water is still ejected from nozzles	Dirty solenoid valve	Clean solenoid valves	Customer Service
Inadequate drying results	Not enough drying agent Wrong drying agent No, or insufficient, air pressure	Increase dosage. Check levels. Clean suction filter. Use solely original KÄRCHER drying agents. Check air pressure, and adjust if required	Operator
Wheel cleaning brush does not rotate in both directions	Contact pressure too high	Adjust wheel wash pressure reducer to lower contact pressure	Operator
Wheel cleaning brush is extended slowly, or not at all	No, or insufficient, air pressure	Check air pressure, and adjust if required Adjust wheel wash pressure reducer to increase contact pressure	Operator
Wheel cleaning brush extends at the wrong time	Lichtschranken verschmutzt	Lichtschranken reinigen, ggf. Einstellung überprüfen	Operator/ Customer Service
Brushes become soiled too quickly	Drying agent and/or hot-wax dosage too high Shampoo dosage too low	Adjust shampoo dosage Reset water volume for best results	Operator

Faults Not Detected by the System, Nor Shown in the Display			
Problem	**Possible cause**	**Remedy**	**By whom**
Incorrect underbody washing function	No, or insufficient, air pressure	Check air pressure, and adjust if required	Operator
Strong odours from recycled water	Too little or no disinfecting agent Circulation pump is either not working at all or pumped volume is too low	Check disinfecting agent level, and fill up if required Increase dosage Check circulation pump, and increase capacity if required	Operator/ Customer Service