



Clemas & Co Ltd

Industrial Cleaning Equipment
Sales - Hire - Service

WST100 WET & DRY VACUUM CLEANER OPERATOR MANUAL



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Instructions for use

Read the operating instructions and comply with the important safety recommendations identified by the word **WARNING!**

Operator's safety



WARNING!



Before starting the vacuum cleaner, it is absolutely essential to read these operating instructions and to keep them ready at hand for consultation.

The vacuum cleaner can only be used by people who are familiar with the way it works and who have been explicitly authorised and trained for the purpose. Before using the vacuum cleaner, the operators must be informed, instructed and trained on how to work it and for which substances its usage is permitted including the safe method for removing and disposing of the vacuumed material.



WARNING!

The use of vacuum cleaner by people (including children) with limited physical and mental capacities or lacking in experience and knowledge is strictly forbidden, unless they are supervised by a person who is experienced in the use and safe handling of the machine.

Children must be supervised to make sure they will not play with the machine.

General information for using the vacuum cleaner

Use of the vacuum cleaner is governed by the laws in force in the country where it is used. Besides the operating instructions and the laws in force in the country where the vacuum cleaner is used, the technical regulations for ensuring safe and correct operation must also be observed (Legislation concerning environmental and labour safety, i.e. European Union Directive 89/391/EC and successive Directives). Do not carry out any operation that could jeopardize the safety of people, property and the environment. Comply with the safety indications and prescriptions in this instruction manual.

Proper uses

This machine is suitable for vacuuming different kinds of (applicable) liquids.

With the appropriate optional accessories, it can also be used in workshops where metallic shaving machining is done. In these cases, the machine sucks and separates machining shavings from liquids (cutting fluid, emulsions, coolants, etc.) collecting them quickly.

Any other use is considered improper.

The vacuum cleaner has been designed to be used by one operator at a time.

General recommendations



WARNING!

Risk of fire outbreaks and explosions.

- *The vacuum cleaner can only be used when active sources of ignition are not going to be vacuumed.*
- *It is forbidden to vacuum the following materials:*
 - *burning materials (embers, hot ashes, lighted cigarettes, etc.);*
 - *flammable liquids, aggressive fuels (e.g. gasoline, solvents, acids, alkaline solutions, etc.).*
- *It is forbidden to vacuum the following materials: explosive dust or dust liable to spontaneous ignition (such as magnesium or aluminium dusts, etc.).*
- *The vacuum cleaner is not suitable for vacuuming explosive or similar substances, as established by the laws governing explosive substances, particularly: liquid fuels and mixtures of flammable dust and liquids.*



WARNING!

Emergency

If an emergency situation occurs:

- *filter breakage;*
- *fire outbreak;*
- *short-circuit;*
- *engine seizing;*
- *electric shock;*
- *etc.;*

Turn off the vacuum cleaner, unplug it and ask for assistance from qualified personnel.

[NOTE]

Check the place of work and substances tolerated.



WARNING!

The vacuum cleaners must not be used or stored outdoors, or in damp places.



WARNING!

If foam or liquid spills from the vacuum cleaner, switch it off immediately and check for the cause.

Vacuum cleaner description

Labels

Figure 1

- 1 Identification plate:
Code of the model, technical specifications, serial number, CE marking, year of manufacture
- 2 Liquid container
- 3 Controls (switches)
- 4 Inlet
- 5 Vacuum/blower units
- 6 Liquid container closing band
- 7 Flow deviation valve control (DV models)
- 8 Liquid level indicator tube
- 9 Liquid exhaust valve
- 10 Vapour filter
- 11 Float for stopping liquids

Vacuumping of liquids

The machine vacuumps the liquids and deposits them into the container (2).

Vacuumping of liquids and shavings (optional)

When the machine vacuumps the material (shavings and liquids) which was produced during the machining process, the solid part is kept in the shaving container (optional), whereas the liquid part flows into the liquid container underneath (2).

Before turning on the vacuum cleaner, fit the vacuum hose into the inlet (4) and then fit the required tool on to the end part (refer to the manufacturer's accessory catalogue or Service Centre).

The float (11) stops the vacuumping operation (the vacuumping units remain activated) when the liquid container (2) is full; it is then necessary to turn off the vacuum cleaner and to empty the liquid container (2).

Optional kits

Various optional kits are available for converting the vacuum cleaner:

- Shaving container kit
It keeps the shavings in the container.
- "Slush" kit for fine shaving retaining
It retains fine shavings into the shaving container.

On request, the vacuum cleaner can be supplied with optional kits already installed. However, they can also be installed at a later date.

Please contact the manufacturer's sales network for further details.

Instructions to install parts on request are included in the conversion kit.



WARNING!

Use only genuine optional kits supplied and authorized by the manufacturer.

Accessories

Various accessories are available; refer to the manufacturer's accessory catalogue.



WARNING!

Use only genuine accessories supplied and authorized by the manufacturer.

Packing and unpacking

Dispose of the packing materials in compliance with the laws in force.

Figure 2

Model	A (mm)	B (mm)	C (mm)	Kg
WSS 100	700	860	1,500	65
WST 100	700	1,200	1,500	75

GB

Setting to work - connection to the power supply



WARNING!

- *Make sure that the vacuum cleaner is in perfect condition before starting work.*
- *Before plugging the vacuum cleaner into the electrical mains, make sure that the voltage rating indicated on the data plate corresponds to that of the electrical mains.*
- *Plug the vacuum cleaner into a socket with a correctly installed ground contact/connection. Make sure that the vacuum cleaner is off.*
- *The plugs and connectors of the connection cables must be protected against splashed water.*
- *Make sure that connections to the electrical mains and plug are correct.*
- *Use the vacuum cleaners only when the cables that connect to the electrical mains are in perfect condition (damaged cables could lead to electric shocks!).*
- *Regularly check that the electric cable does not show signs of damage, excessive wear, cracks or ageing.*



WARNING!

When the vacuum cleaner is operating:

- *Do not crush, pull, damage or tread on the cable that connects to the electrical mains.*
- *Only disconnect the cable from the electrical mains by removing the plug (do not pull the cable).*
- *Only replace the electric power cable with one of the same type as the original (H05 VV-F); the same rule applies if an extension is used.*
- *The cable must be replaced by the manufacturer's Service Centre staff or by equivalent qualified personnel.*

Extensions

If an extension is used, make sure it is fit for the power draw and protection degree of the vacuum cleaner.

Minimum section of extension cables:

Maximum length = 20 m

Cable = H05 VV-F

Max power (kW)	3	5	15	22
Minimum section (mm ²)	2.5	4	10	16



WARNING!

Sockets, plugs, connectors and installation of the extension cable must maintain the IP protection degree of the vacuum cleaner, as indicated on the data plate.



WARNING!

The vacuum cleaner's power socket must be protected by a differential circuit-breaker with surge current limitation, that shuts off the power supply when the current discharged to the ground exceeds 30 mA for 30 msec. or an equivalent protection circuit.



WARNING!

Never spray water on the vacuum cleaner: this could be dangerous for persons and could short circuit the power supply. Consult the latest edition of the European Union Directives, the Laws in the country of use and the current standards in force (UNI - CEI - EN), in particular the European standard EN60335-2-69.

Liquids vacuuming



Comply with the safety regulations governing the materials for which the vacuum cleaner is used.



- Before vacuuming, check that the float is present.
- If foam forms, turn off the vacuum cleaner immediately and empty the container.
- Warning: switch off the vacuum cleaner immediately if foam or liquid leaks out.
- Warning: the dirty liquid collected by the vacuum cleaner must be considered conductive.



Do not use the vacuum cleaner without the float! If it's used without the float, the vacuum cleaner may be seriously damaged.

Maintenance and repairs



Disconnect the vacuum cleaner from its power source before cleaning, servicing, replacing parts or converting it to obtain another variant, the plug must be removed from the socket.

- Carry out only the maintenance operations described in this manual.
- Use only original spare parts.
- Do not modify the vacuum cleaner in any way. Failure to comply with these instructions could jeopardize your safety. Moreover, such action would immediately void the EC declaration of conformity issued with the vacuum cleaner.



To carry out maintenance operations which are not described in this manual contact the manufacturer's Service Centre or our sales network.

Technical specifications

Parameter	Units	WSS 100 / WST 100	
		WSS 100	WST 100
Voltage / frequency	V/Hz	230/50	110/50-60
Power rating	kW	2.4	1.6
Noise level	dB(A)	79	73
Protection	IP	44	44
Insulation	Class	I	I
Shaving capacity (optional)	L	25	25
Max liquid capacity	L	100	100
Inlet (diameter)	mm	50	50
Max vacuum	mbar	220	160
Maximum air flow rate (without hose and reductions)	L/min	4,500	3,690

Dimensions

Figure 3

Model	WSS 100	WST 100
A (mm)	580	580
B (mm)	800	880
C (mm)	1,230	1,230
kg ⁽¹⁾	50	60

(1) Net weight

[NOTE]

- Storage conditions:
Temperature: -10°C ÷ +40°C
Humidity: ≤ 85%
- Operating conditions:
Maximum altitude: 800 m
(Up to 2,000 m with reduced performances)
Temperature: -10°C ÷ +40°C
Humidity: ≤ 85%

GB

Controls, indicators and connections

Figure 4

- 1 ON/OFF switches of the vacuum units
- 2 Flow deviation valve control (WS...100DV models)

Inspection prior to starting

Figure 5

- 1 Inlet

Prior to starting, check that:

- All latches are tightly locked;
- The vacuum hose and tools have been correctly fitted into the inlet (1);
- The shaving container (optional) is installed, if applicable.
- The liquid container is not full.
- The float inside the liquid container is present and correctly installed.

Starting up

Figure 6

- 1 Castor brakes

Lock the castor brakes before starting the vacuum cleaner (1).

Starting the vacuum cleaner

- Push one of the switches or both of them (1 - figure 4) to start the vacuum cleaner. The related warning lights turn on.

Stopping - Emergency stopping

- Push the switches (1 - figure 4) once again to stop the vacuum cleaner.

Liquid vacuum stopping (fig. 1)

- When the tank is full, the float (11) stops the vacuuming operation; nevertheless, the vacuum units (5) remain activated.
- Switch off the vacuum units by pushing the switches (3).

Emptying the containers

Figure 7

- 1 ON/OFF switches of the vacuum units
- 2 Flow deviation valve control (WS...100DV models)
- 3 Liquid exhaust valve

Emptying the liquid container

- Open the exhaust valve (3) after putting a container in the position where the liquid will be discharged.
- After emptying it, close the exhaust valve (3).

Emptying the liquid container with the flow deviation valve (WS...100DV models)

- Open the exhaust valve (3) after putting a container or the drain hose (optional) in the position where the liquid will be discharged.
N.B. Drain by gravity the liquid left inside the suction hose.
- Activate the deviation valve (2), and take it to A position, in order to invert the vacuum flow.
- Push both switches (1) to start draining, holding the drain hose (4) firmly to prevent liquid splashes and leaks.
- At the end of the emptying operation push both switches (1) to stop the vacuum units.
- To start the vacuum operation, close the exhaust valve (3), take the valve (2) to B position, then push both switches (1).



WARNING!

***Do not operate on the deviation valve "2" when the vacuum units are activated.
If the flow is inverted when the vacuum units are activated, the machine may be damaged.***

- For more thoroughly cleaning the container, it can be removed with the nuts under the buffers (6).

Emptying the shaving container (optional)

Figure 8

- 1 Shaving container
- 2 Container closing band



Before proceeding with these operations, turn off the vacuum cleaner and remove the plug from the power socket.

Lift the container with a suitable lifting device.

- Open the container closing band (2) and lift the vacuum cleaner motor head.
- Sling the shaving container (1) and remove it.
- Empty the container and clean it (see "Cleaning the containers" paragraph).
- Place the shaving container back in position, making sure it is correctly positioned.

At the end of a cleaning session

- Turn off the vacuum cleaner and remove the plug from the socket.
- Wind the electric connection cable.
- Empty the container as described in the "Emptying the containers" paragraph. Clean the vacuum cleaner as described in the "Maintenance, cleaning and decontamination" paragraph.
- Store the vacuum cleaner in a dry place, out of reach of unauthorised people.

Maintenance, cleaning and decontamination



The precautions described below must be taken during all the maintenance operations, including cleaning and replacing of the safety filters.

- **To allow the user to carry out the maintenance operations, the vacuum cleaner must be disassembled, cleaned and overhauled as far as is reasonably possible, without causing hazards for the maintenance staff or other people. The suitable precautions include decontamination before disassembling the vacuum cleaner, adequate filtered ventilation of the exhaust air from the room in which it is disassembled, cleaning of the maintenance area and suitable personal protection.**

Compartments that are not dust-tight must be opened with suitable tools (screwdrivers, wrenches, etc.) and thoroughly cleaned.

- **Carry out a technical inspection at least once a year, for example: check the filters to find out whether the air-tightness of the vacuum cleaner has been impaired in any way and make sure that the electric control panel operates correctly. This inspection must be carried out by the manufacturer or by a competent person.**



Use only genuine spare parts supplied and authorized by the manufacturer.

Cleaning the containers



WARNING!

Before proceeding with these operations, turn off the vacuum cleaner and remove the plug from the power socket.

Shaving container (optional)

- Clean the container after each emptying (see “Emptying the shaving container” paragraph).
- Check that the holes are free of dirt; clean them if necessary.

Liquid container

Figure 9

- 1 Float and relative support
 - 2 Shaving container (optional)
 - 3 Container closing band
 - 4 Liquid exhaust valve
- Empty the liquid container (see “Emptying the containers” paragraph).
 - Open the liquid container closing band (3).
 - Lift the motor head.
 - Remove the float and its support (1) or the shaving container (2) (optional).
 - Wash the container with water to remove deposits.
 - Open the exhaust valve (4) to empty the container.
 - Close the exhaust valve (4).
 - Place the float and its support or the shaving container (if applicable) back into position.
 - **N.B. Make sure the float support is correctly positioned (fig. 9).**
 - Lock the motor head by using the liquid container closing band (3).

Cleaning or replacement of the vapour filters

Figure 10

- 1 Filters
 - 2 Baffle plate
 - 3 Filter box
- Remove the safety screw (4) and open the motor head clamp (5).
 - Lift the motor head.
 - Remove the filter box (3) by unscrewing the fixing screws.
 - Remove the filters (1) and the baffle plate (2), then clean the filters with water or replace them if necessary.
 - Reinstall the filters (1) and the baffle plate (2) making sure they are correctly positioned.
 - Install the filter box and secure it by screwing the fixing screws.
 - Reinstall the motor head and close the container with the appropriate closing band, then put the safety screw in place (4).

Tightness inspection

Figure 11

- 1 Vacuum hose
 - 2 Liquid level indicator tube
- Hoses check
Make sure that the suction connecting hose (1) and the level hose (2) are in a good condition and correctly fixed. If the hose is damaged, broken or badly connected to the unions, it must be replaced.

Figure 12

- 1 Gasket
 - 2 Liquid container
 - 3 Motor head
- Motor head tightness check
Replace the seal (1) between the container (2) and the motor head (3) if it is torn, cut, etc.

Vacuum cleaner disposal

Dispose of the vacuum cleaner in compliance with the laws in force.

Proper disposal (electric and electronic waste) (applicable in the European Union and in countries providing a separate collection system)

The above symbol (figure 13), which is present on the product or in its documentation, indicates that the product cannot be disposed of together with other domestic waste at the end of its life cycle.

To prevent damages to the environment or the health caused by improper waste disposal, please separate this product from other waste and recycle it responsibly in order to support the sustainable reuse of material resources.

Domestic users should contact the retailer or the local office providing information on separate collection and recycling of this product.

Companies should contact the supplier and check the purchase contract terms and conditions.

This product can not be disposed of together with other commercial waste.

Wiring diagrams

Wiring diagram list - fig. 14

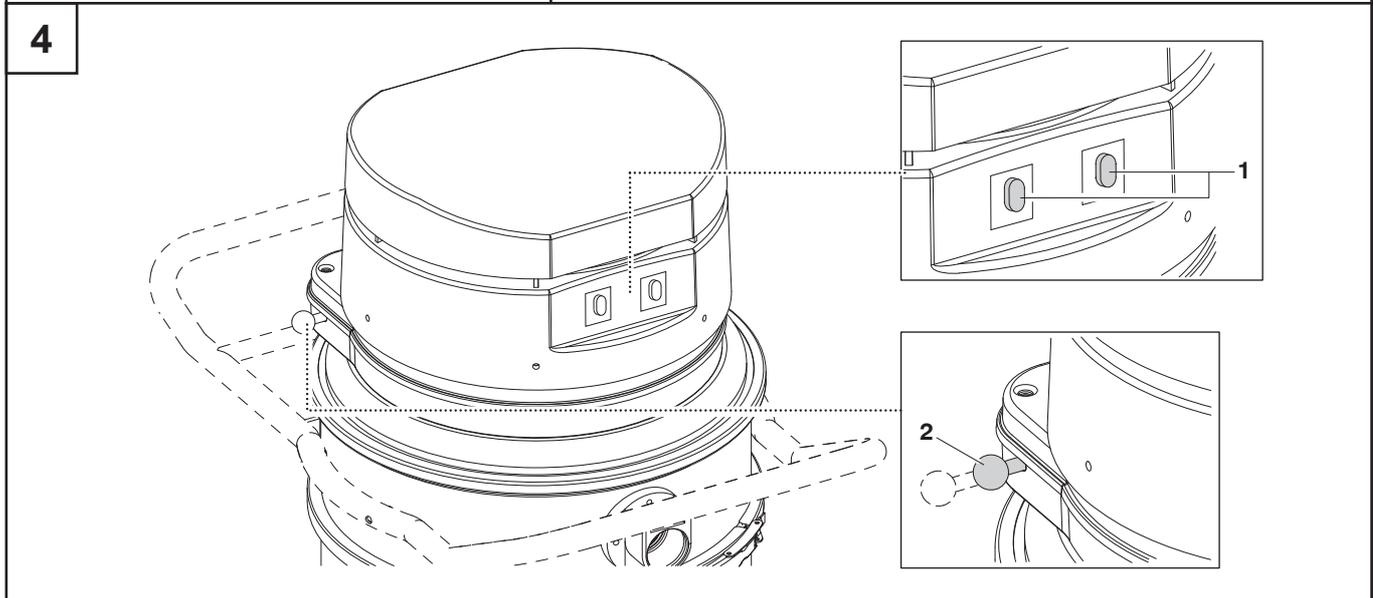
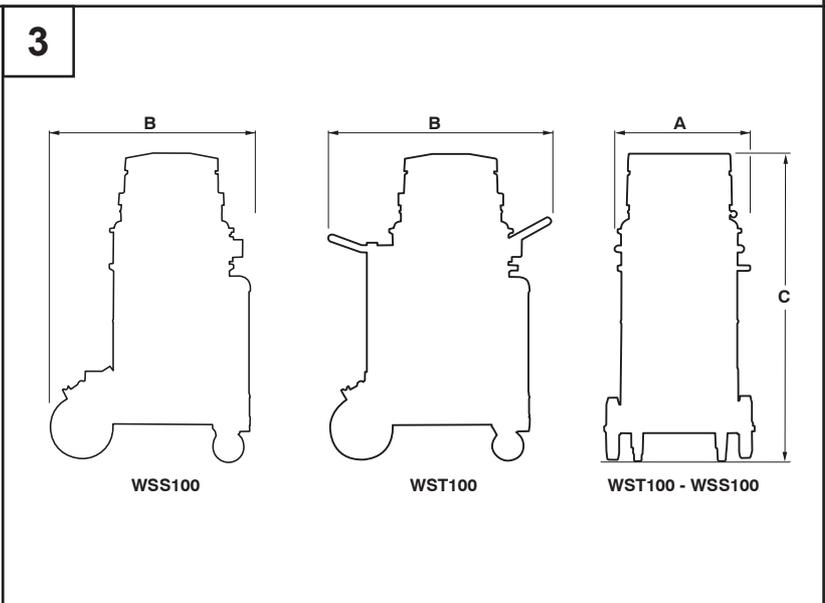
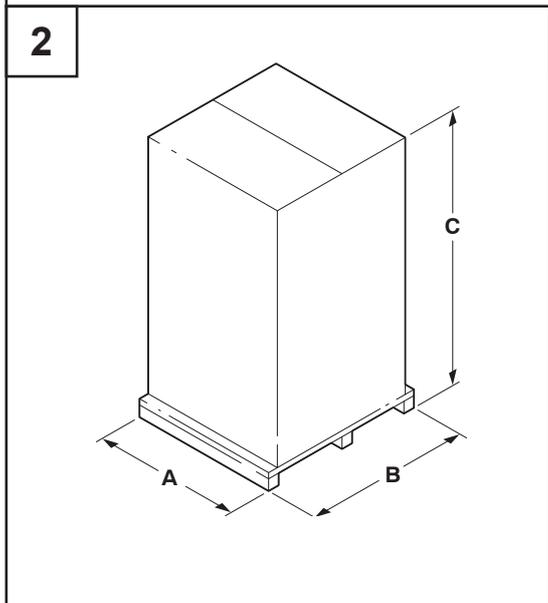
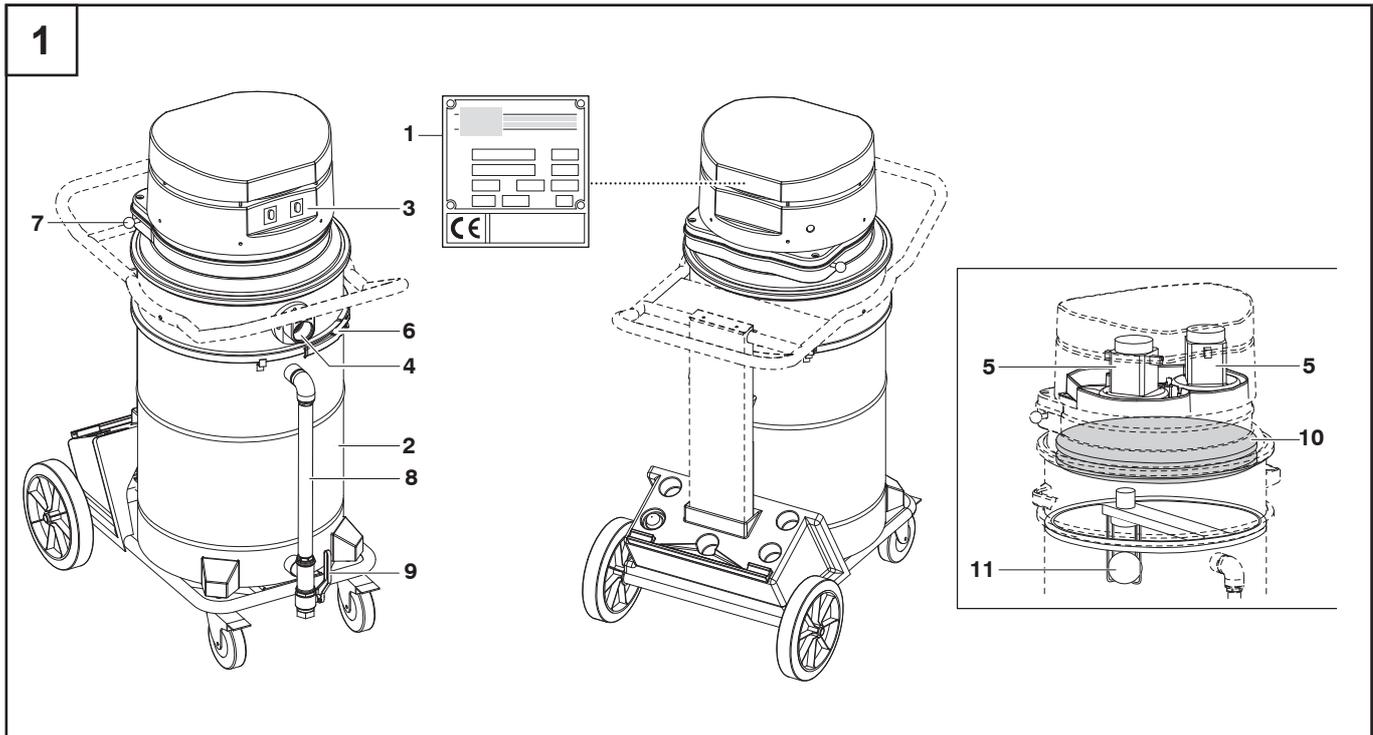
Reference number	Part
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2	Coil
3	Terminal strip
4	Condenser
5	Bipolar switch
6	Thermal protection
7	Grounding cable

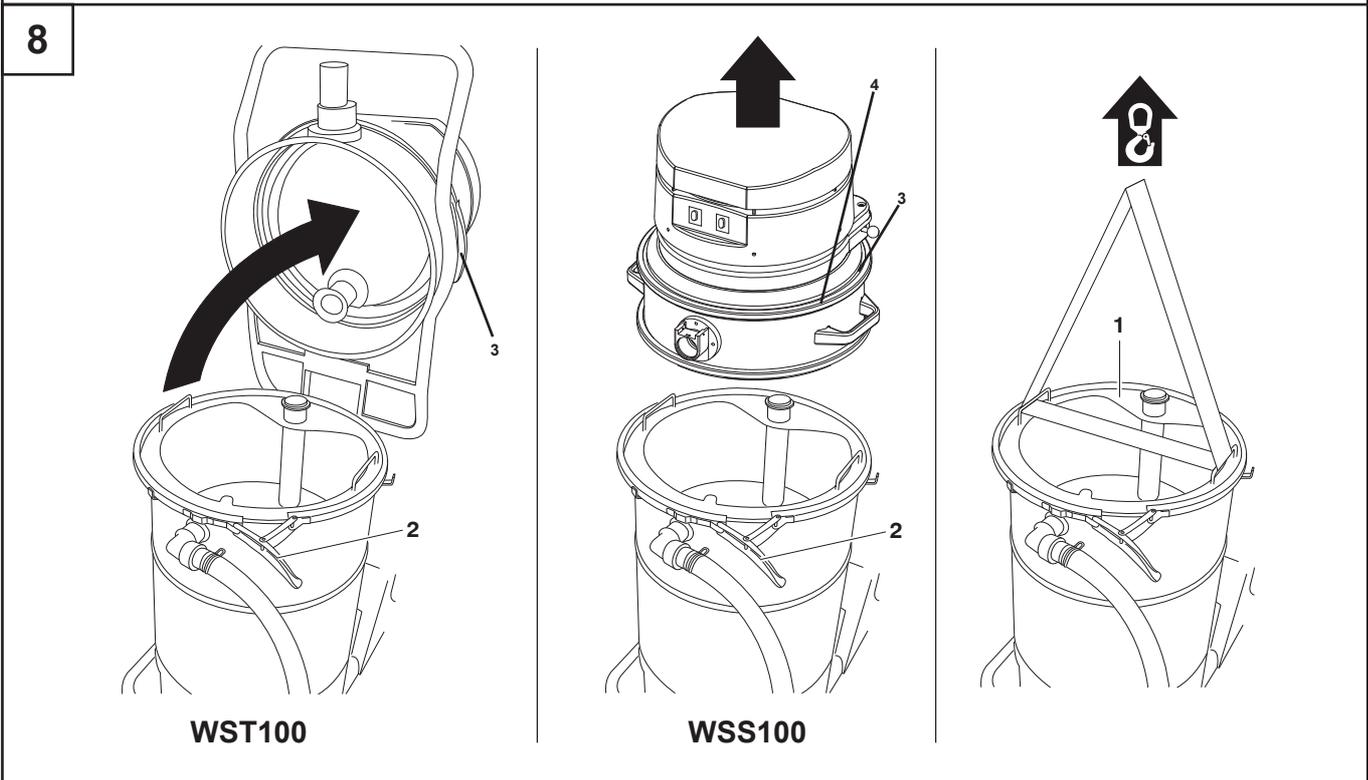
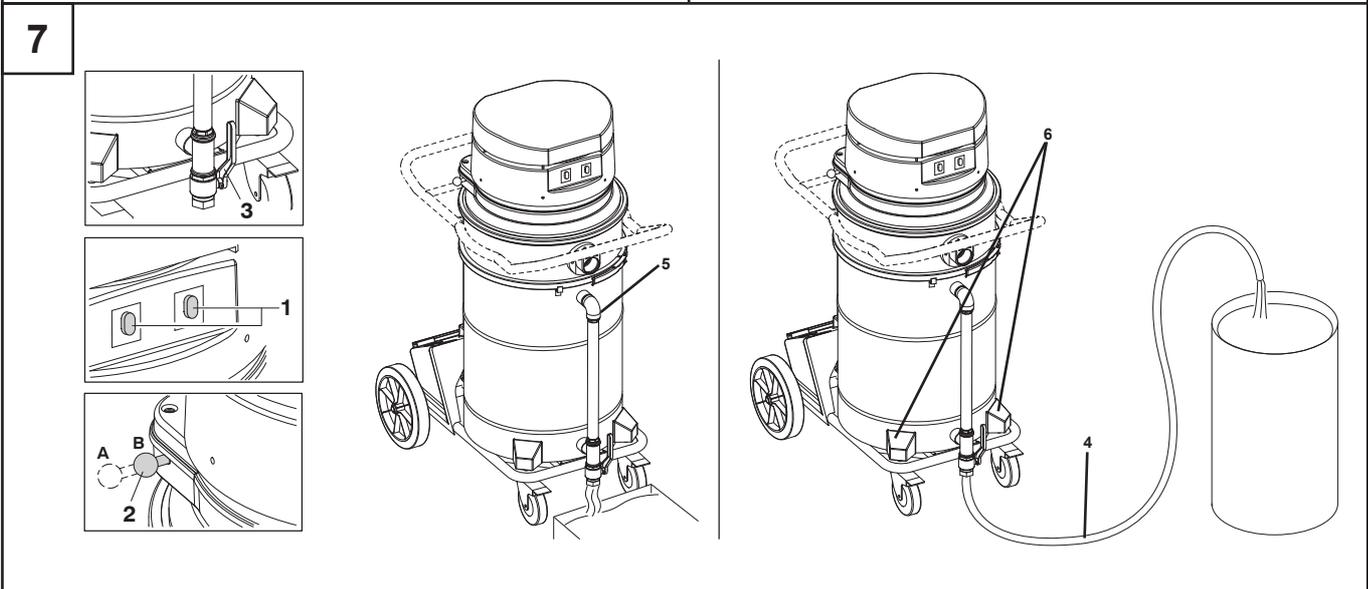
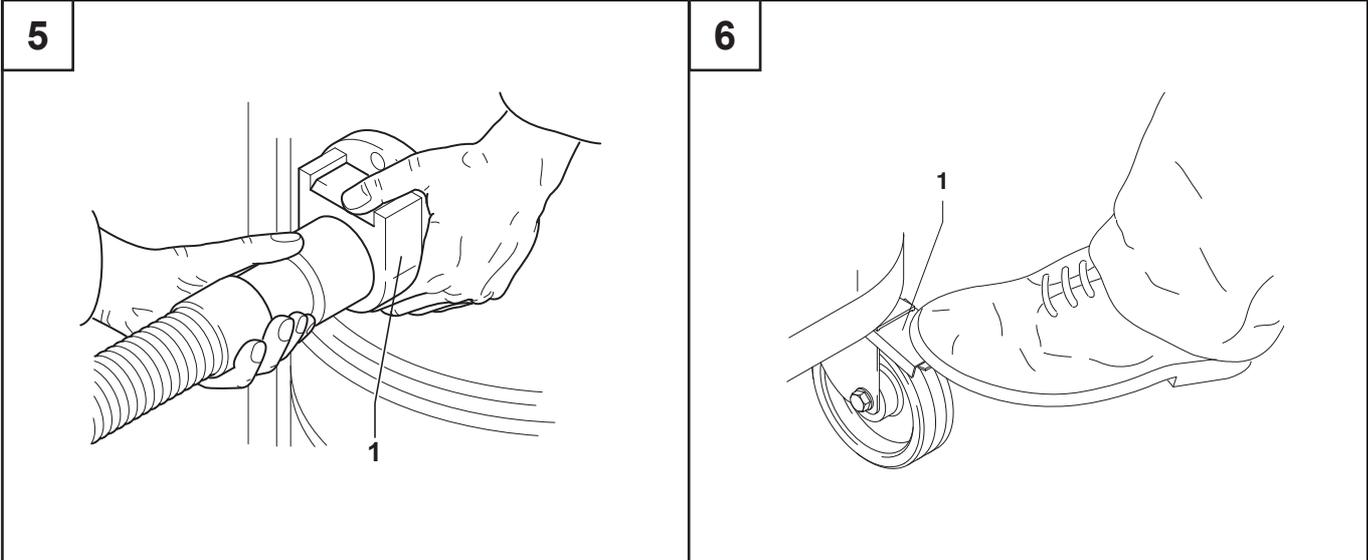
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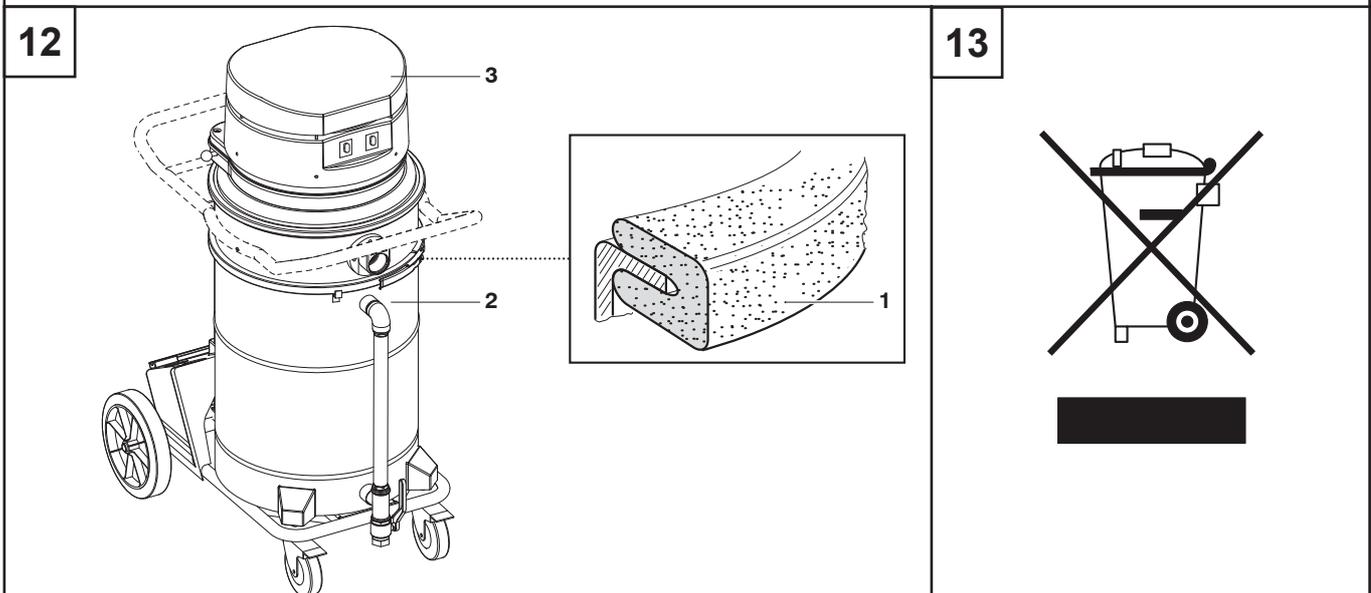
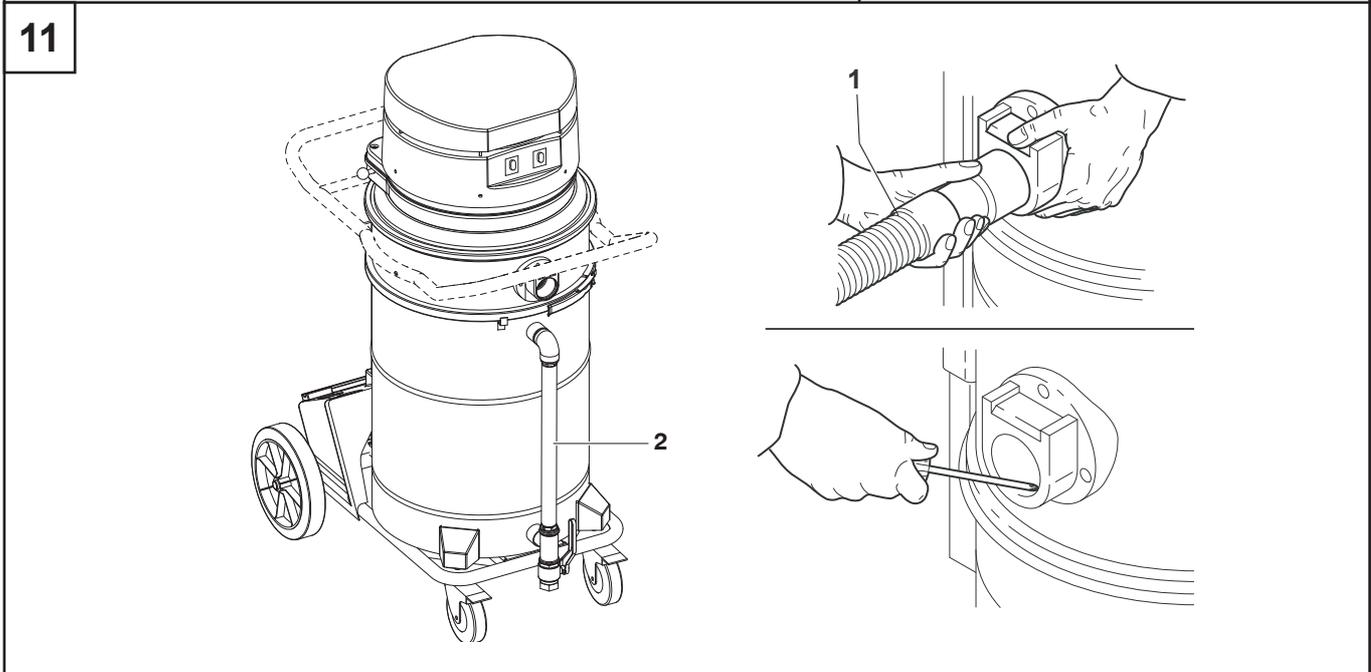
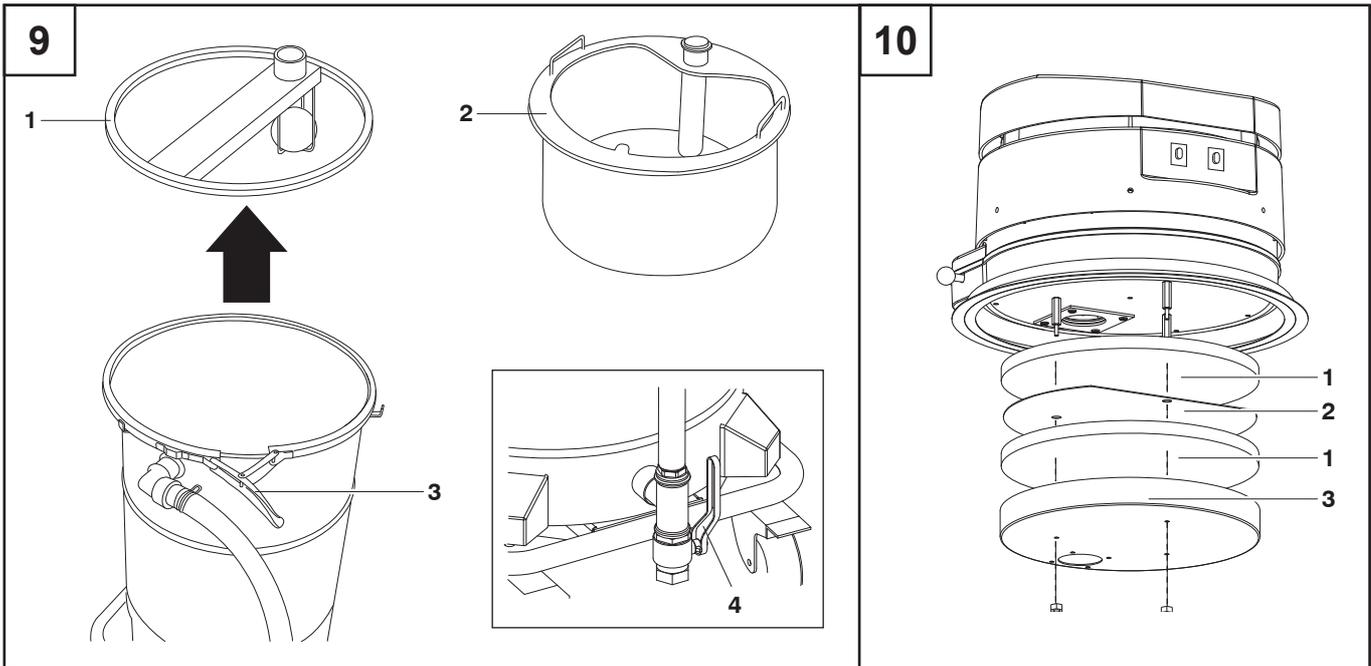
Cables 3 x 1.5 mm²

Troubleshooting

Problem	Cause	Remedy
The vacuum cleaner suddenly stops.	Activation of the level monitoring system.	Emptying of the liquid container.
	Intervention of thermal protection devices.	Push the switches to stop the vacuum cleaner, wait until the motors cool down, then start it again.
The vacuum cleaner performance has decreased.	Clogged filters.	Replace them.
	Clogged vacuum hose.	Check the vacuum hose and clean it.
Electrostatic current on the vacuum cleaner.	Non existent or inefficient grounding.	Check all grounding, particularly the union to the inlet.
The vacuum cleaner does not start after emptying the container.	The vacuum hose is not free from debris.	Make sure that the float does not close the hose and/or the hose is not clogged.
	The shaving container is full.	Empty the shaving container and check the seals.







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