

IWV 40/100

**Operating manual
Industrial vacuum cleaner**



Read these
instructions carefully
before operating the
machine!



This machine is
intended for
industrial and
professional use
only!

Introduction

This manual provides all the information needed to use and service your vacuum cleaner. Good operation and durability depend on proper maintenance and careful use.

Before leaving the factory, this particular model has undergone stringent tests to ensure utmost reliability. Always check however to make sure the vacuum cleaner has not been damaged during transport in such a way as to affect operation and safety.

This manual should be considered an integral part of the vacuum cleaner and must be kept together with the unit until this is scrapped. In case of loss of or damage to the manual, ask **columbus** for a new copy.

The technical details contained in this manual are the property of **columbus** and should be deemed of a confidential nature.

Even partial reproduction of the graphic project, the text and the illustrations is legally forbidden.

Some details shown in the illustrations in this manual may be different from those of your vacuum cleaner. Some component parts may have been removed for greater clarity.

For easier reference, this manual is split into sections, identifiable by specific graphic symbols.

The subjects dealt with in this manual are those expressly required by "**Machine Directive 2006/42/CE**" and the technical details shown are those provided by the manufacturer at the time of compilation.

This manual must be kept in a place accessible to all the personnel charged with operating and servicing the vacuum cleaner.

In case of any doubts, always immediately phone the **After-Sales Service**.

The competent Law Court for all disputes is that of Stuttgart.

Contents

1 Information	4
1.1 Identification of the main parts	4
1.2 Accessories provided	5
1.3 Identification details of manufacturer	6
1.4 Type plate	6
1.5 Intended uses	7
1.6 Allowed environmental conditions	7
1.7 Noise level	7
1.8 Storage	7
1.9 Scrapping	7
1.10 Technical details	8
2 Safety	9
2.1 Safety details	9
2.2 Safety warnings	10
2.3 Safety plates and symbols	13
2.4 Outstanding risks	14
2.5 Applied directives	14
3 Installation	15
3.1 Handling	15
3.2 Installation	16
4 Operation	18
4.1 Description of controls	18
4.2 Work cycle	19
4.3 Releasing and removing the removable container	21
5 Maintenance	22
5.1 Informative notes	22
5.2 General safety warnings	22
5.3 Maintenance operations	23
5.4 Replacing the filters	24
5.5 Troubleshooting	26
6 Recommended spare parts	27
7 Declaration of conformity	28

1 Information

1.1 Identification of the main parts

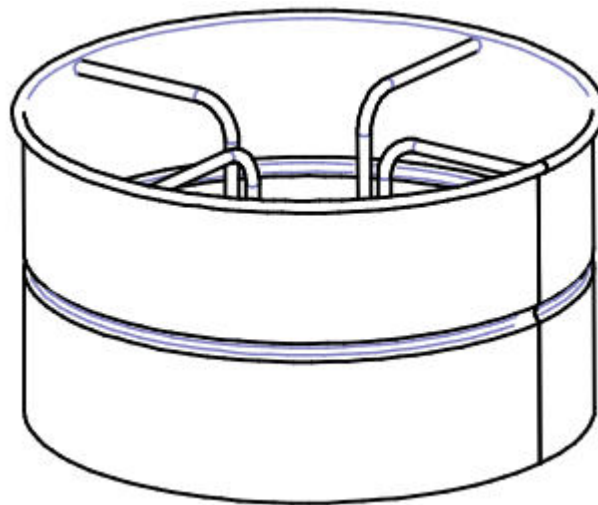


- 1) Suction unit
- 2) Release fastener
- 3) Push handle
- 4) Suction pipe coupling point
- 5) Filtering chamber
- 6) Level indicator
- 7) Castors
- 8) Fixed wheels
- 9) Container release lever
- 10) Container

1.2 Accessories provided



21478300 – POLYESTER FILTER Ø500 H100



21495000 – OIL SIEVE GRID

1.3 Identification details of manufacturer

G. Staehle GmbH u. Co. KG
columbus Reinigungsmaschinen
Mercedesstr.15
D - 70372 STUTTGART
Telefon +49(0)711 / 9544-950
info@columbus-clean.com
www.columbus-clean.com

1.4 Type plate

In compliance with the **Machine Directive 2006/42/CE** on vacuum cleaners, the machine is fitted with **CE** plates.

When contacting the manufacturer or dealer, always quote the details shown on the vacuum cleaner type plate.

columbus		CE	
MOD.	<input type="text"/>	S/N	<input type="text"/>
BESC.	<input type="text"/>	YEAR	<input type="text"/>
50 Hz	<input type="text"/>	FILTER	<input type="text"/>
60 Hz	<input type="text"/>		<input type="text"/>
<small>G. Staehle GmbH u. Co. KG Columbus Reinigungsmaschinen Mercedesstr. 15 70372 Stuttgart - GERMANY</small>		Made in Italy	

1.5 Intended uses

These specific vacuum cleaner models have been designed, built and protected for vacuuming dusts and solid materials only, using special filters.

Warning!

Always use specific filters for the type of dust or materials to be vacuumed.

Any other use is considered **IMPROPER**.

The vacuum cleaner is in any case intended for professional industrial use.

1.6 Allowed environmental conditions

To ensure the correct operation of the vacuum cleaner, this must be positioned protected against atmospheric agents (rain, hail, snow, fog, dusts in suspension, etc.) with an environmental running temperature between 5°C and 45°C and relative humidity not above 70%.

The work environment must be clean, well-enough lit and devoid of explosive atmosphere.

1.7 Noise level

Noise level readings were taken in accordance with the provisions of **Machine Directive 2006/42/CE** standards.

Sound tests performed on this specific vacuum cleaner model have been taken from a distance of 1 meter and from a height of 1,60 meters, showing an acoustic pressure no higher than:

76 dB (A)

The vibrations transmitted by the machine are lower than 2,5 m²/s.

Attention!

Pursuant to articles L.D. 81/08, workers exposed to sound pressure levels above 85 dB (A) must be protected by special individual protection devices.

It is therefore necessary, if such working conditions exist, to provide workers with such approved individual protection devices and to inform them of the risks relating to noise exposure.

1.8 Storage

Remove the filter and clean it, empty the container and store the vacuum cleaner in a place protected against atmospheric agents with a temperature between 0°C and 40°C. Cover with a nylon sheet to prevent accumulation of dust.

1.9 Scrapping

In case of scrapping, all the component parts of the vacuum cleaner will have to be disposed of through adequate disposal channels in accordance with applicable legislation.

Before scrapping, all plastic and rubber parts will have to be separated from the electrical material. Parts made of plastic, aluminium and steel only may be recycled if collected by special centres.

1.10 Technical details

Power	kW	3,45
Voltage	Volt	230-50/60
Max. vacuums rate	mm / H ₂ O	2.300
Max. air flow rate	m ³ / h	540
Noise level	dB (A)	76
Filter type	Polyester	
Capacity (swarf)	l	40
Capacity (liquid)	l	100
Suction inlet	Ø	80
Dimensions	cm	58 x 60 x 110

2 Safety

2.1 Safety details

The person in charge of safety shall be responsible for informing workers about the risks associated with vacuum cleaner operation.

The obligation also exists of training workers so they are able to protect themselves and others.

Failure to observe basic safety regulations and Warnings could cause accidents during vacuum cleaner operation, maintenance and repair. Accidents can often be avoided by recognising potentially dangerous situations before these occur. Operators should be aware of potential hazards and be trained and skilled enough. They should also have the tools necessary to perform these duties properly.

columbus shall under no circumstances be deemed liable for accidents or damage caused by use of the vacuum cleaner by personnel not properly trained or who use it in an improper manner, as well as by even partial failure to comply with the safety regulations and intervention procedures indicated in this manual.

The safety Warnings and warning notices are indicated in this manual and on the product.

Unless these hazard messages are heeded, the operator could become involved in accidents with serious consequences for him/herself and for other people.

The safety messages are highlighted by the following symbols:

Attention!

Unless these messages are heeded, operator injuries could occur.

Warning!

Unless these messages are heeded, vacuum cleaner damage could occur.

columbus cannot foresee all possible circumstances capable of representing a potential hazard. The warnings in this manual and on the products should not therefore be deemed exhaustive. In the event of tools, procedures, work or machining methods being used that are not explicitly recommended by **columbus**, make sure no hazards exist for operators and others.

Only ever use original columbus spare parts.

columbus declines all liability in the event of non-original spare parts being used.

2.2 Safety warnings

Attention!

The following indications are, by themselves, not enough to fully protect against all the hazards that could arise during vacuum cleaner operation. These will have to be integrated with common sense and the experience of the operator, both of which are crucial factors for preventing accidents. Each section of this manual lists further specific safety warnings for the various operations.

Maintenance jobs must always be performed with the power plug detached from the power point.

The employer must inform and train the user according to the provisions of applicable laws.

Before using the machine, prepare and train yourself by reading this manual carefully. Use of the machine by untrained and unauthorised persons is forbidden.

Using the machine to vacuum toxic substances is forbidden unless this has been equipped with special filters required for the specific type of dusts. Such filters must be explicitly requested by you.

If the machine is used to vacuum toxic-harmful substances, the container must be emptied and the filters cleaned using adequate individual protection devices, selected according to the type of substances to be vacuumed.

Do not vacuum flammable materials or substances or which could cause explosions (fuels, solvents, etc.). To vacuum such materials, the machine must be built with Anti-explosion Motor and Electric System and this must be requested by you explicitly.

Do not vacuum corrosive substances unless the machine is equipped with containers suitable for this purpose (***Stainless-steel AISI 304***).

Use of the machine without the supplied filters is not recommended.

If the filters are correctly fitted, the machine will not eject any objects.

Never rest miscellaneous materials on the horizontal protection guard.

The machine casing containing moving parts must not be removed by the user.

When using the machine, mind other people, especially children.

Use the machine cautiously on slopes and ramps.

Do not change direction on gradients.

Make sure the parked machine remains stable by operating the braked wheel.

During cleaning operations, maintenance jobs or when changing parts, the starter switch must be off and the machine must be disconnected from the power mains by removing the cable from the socket.

Only skilled persons should carry out repairs.

During use, mind the power supply cables and avoid crushing or pulling these.

Periodically check the mains power cable to ensure this is not damaged.

In the event of the cable being damaged, the machine must not be used.

In the event of the cable, plugs or couplings being replaced, make sure these are protected against water spray and check mechanical strength.

Never pull the machine by means of the power cable and the vacuum pipe.

Motor brushes and burnt-out fuses must be replaced by **columbus** or authorised dealers. Always use original spare parts.

The user is responsible for disposing of vacuumed substances in accordance with applicable laws.

After 10 years of use, we recommend sending the machine for a complete overhaul to **columbus**.

The machine is supplied with: instruction manual, Exploded Spare Parts drawing, Declaration of Conformity.

In the event of Customers fitting a tool to the machine not supplied by **columbus**, make sure the safety conditions required by **Machine Directive 2006/42/CE** are complied with and in any event, **columbus** is unable to accept liability for any problems arising from use of such tool.

The vacuum cleaner must not be operated in a corrosive or explosive environment.

Always make sure the vacuum cleaner is free of all foreign materials such as debris, oil, equipment and other objects that could affect operation and cause injury to persons.

Avoid using flammable or toxic solvents such as petrol, benzene, ether and alcohol for cleaning.

Avoid prolonged contact with solvents and inhaling their vapours. Avoid use close to open flames or sources of heat.

Never use the vacuum cleaner without the filter.

Do not vacuum lit cigarette ends. The filter could be damaged.

Do not vacuum petrol or flammable liquids in general.

Make sure all the guards and protection devices are in place and that all the safety devices are in place and working properly.

Do not wear loose or hanging clothing such as ties, scarves or torn garments that could become trapped and be sucked up by the cleaner

Do not open the vacuum container with the machine running.

The manual should always be kept handy for reference so the operating cycle can be checked every time there are doubts.

In the event of this manual being lost or damaged, ask **columbus** for a new copy.

Structural damage and improper alterations or repairs could change the protection capacity of the vacuum cleaner and therefore cancel this certification.

Any alterations to the appliance must only be made by **columbus** engineers.

During maintenance jobs, affix a notice to the appliance indicating **"MACHINE BEING SERVICED, DO NOT START"**.

Climbing on the cleaner is forbidden.

Never touch electric wires, switches, buttons, etc. with wet hands.

Before connecting to the power mains, make sure the power voltage and frequency are those shown on the machine plate.

Make power connections to a mains supply with efficient earth system.

In the event of an extension being used, make sure this is in perfect condition, marked **CE** and that the cross section of the cable is suitable for the vacuum cleaner power input.

When restoring original working conditions, the appointed personnel should make sure that at the end of the operating procedure, proper vacuum cleaner operation safety conditions are restored, especially the safety devices and the protective guards.

Only adult persons should use the vacuum cleaner.

During vacuuming operations, always brake the vacuum cleaner using the special revolving wheel lock.

2.3 Safety plates and symbols

Plates are affixed to the vacuum cleaner showing safety symbols and/or messages.

Attention!

Make sure all the safety messages are legible.

Clean these with a cloth, soap and water. Do not use solvents, diesel fuel or petrol.

Replace the damaged plates with new ones supplied by columbus.

If a plate is affixed to a replaced part, make sure a new plate is affixed to the new part.

Attention!

Read the operator's and maintenance manual carefully before using the cleaner or doing any maintenance jobs.

IMPORTANT

***DO NOT BREATHE IN INFLAMMABLE AND / OR EXPLOSIVE
LIQUIDS***

Warning!

Risk of crushing upper limbs while fitting and locking the material container on the vacuum cleaner.

Never place hands between the material container and vacuum cleaner while locking.

Do not place hands on sides of container near the guide pins while locking.

Perform the container locking operation by means of the levers located on the side, USING BOTH HANDS!

2.4 Outstanding risks

Careful analysis of risks performed by the manufacturer and stored in the technical file has made it possible to eliminate most of the risks associated with vacuum cleaner operation.

The manufacturer advises carefully following the instructions, procedures and advice contained in this manual as well as applicable safety regulations, including the use of the envisaged protection devices, both those integrated in the cleaner and individual.

Outstanding risks associated with the vacuum cleaner could be:

Electrical maintenance risks caused by the need to work under power.

Pursuant to **Presidential Decree 81/08**, only trained personnel should work on the machine with the power supply connected and this must have double earth insulation.

Risk of improper use in the presence of explosive and flammable substances.

The vacuum cleaner must not be used in environments containing substances in the form of liquids that could vaporise at room temperature and flammable dusts and gas.

Risks of operation in humid environments.

Keep to the limits shown in this manual at chap. 1.6 Allowed environmental conditions.

Risk of erroneous interpretation of the safety pictograms.

Having identified the various outstanding risks, the manufacturer has affixed to the cleaner a number of hazard labels in compliance with regulations relating to the graphic symbols to be used. The user must immediately replace any safety plates that become illegible due to wear or damage.

Attention!

Removing the safety plates on the vacuum cleaner is strictly forbidden. The manufacturer declines all liability in relation to vacuum cleaner safety in the event of failure to comply with the above indications.

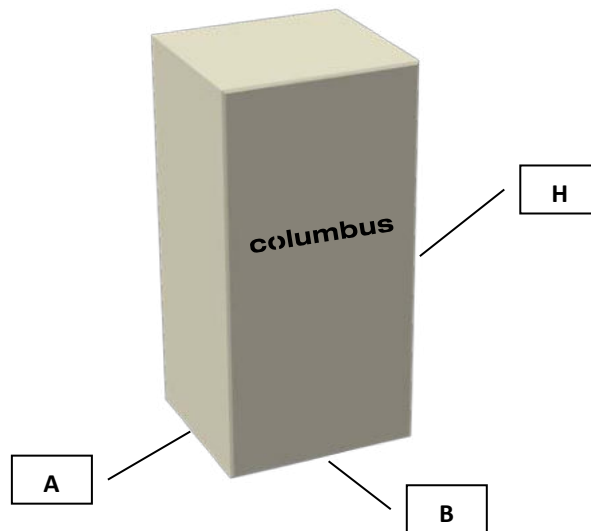
2.5 Applied directives

The following directives apply to the vacuum cleaner described in this manual:

- ***2006/42/CE Machine Directive***
- ***2014/30/EU Electromagnetic compatibility directive***
- ***2006/95/CE Low-voltage directive***

3 Installation

3.1 Handling



	A (cm)	B (cm)	H (cm)	Weight (incl. packaging) kg
IWV 40/100	73	85	150	75

The machine is supplied in a strong cardboard box secured with straps.

Transport the package using a fork-lift truck of adequate lifting capacity and make sure it is stable and that weight is properly distributed on the forks.

Before starting to move, make sure the transit area is free and that there are no moving objects on the packaging.

During movement, keep the load low for greater stability and safety.

When starting up the vacuum cleaner, move this by means of the wheels supplied.

The appliance must never be moved using fork-lift trucks or other equipment that lifts it off the floor.

If for any reason the need arises to lift and transport the vacuum cleaner, this operation must be performed under the responsibility of the user. The user is therefore invited to secure the load as he best thinks fit to ensure the operation is performed in total safety.

3.2 Installation

Warning!

Before installing the vacuum cleaner, carefully make a sight check to pinpoint any damage suffered during transport.

In the event of any component parts being damaged, do not proceed with installation. Notify the manufacturer and reach an agreement on how to proceed.

The vacuum cleaner already features a suction filter.

Fit the accessory required for the type of vacuuming operation on the opposite end of the hose.



Note: No standard accessories (reducers, hoses, nozzles) are included with the vacuum; accessories must be specified and ordered separately.

Contact your dealer for information relating to the different types of **optional accessories** available for this specific vacuum cleaner model.

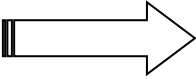
Fit the supplied connector on the pipe union



Fit the supplied pipe on the connector.



Make sure the power supply corresponds to the voltage and frequency indicated on the vacuum cleaner plate.



columbus		CE
MOD.	<input type="text"/>	S/N <input type="text"/>
BESC.	<input type="text"/>	YEAR <input type="text"/>
50 Hz	<input type="text"/>	FILTER <input type="text"/>
60 Hz	<input type="text"/>	<input type="text"/>
<small>G. Staehle GmbH u. Co. KG Columbus Reinigungsmaschinen Mercedesstr. 15 70372 Stuttgart - GERMANY</small>		
Made in Italy		

Warning!

Do not fit the plug in the power socket with wet hands.

In the event of an extension being used, make sure this is in perfect condition, in compliance with CE standards and with cable cross section suitable for the power input of the vacuum cleaner.

4 Operation

4.1 Description of controls



- 1) START / STOPP switch (Motor 1)
- 2) START / STOPP switch (Motor 2)
- 3) START / STOPP switch (Motor 3)
- 4) Power on – red light indicator
- 5) Vacuum meter

4.2 Work cycle

Warning!

Before fitting the plug, make sure the power voltage corresponds to that on the CE marking plate.

- Make sure the power plug is correctly fitted in the power socket.
- Make sure the flexible hose is properly fitted and locked in the vacuum pipe union.
- Make sure the power cable and any extension used are integral and in perfect condition.
- Block the vacuum cleaner by means of the retainer provided.



- Grip one end of the flexible hose complete with selected accessory.
- Press the **Start** button and start vacuuming.
- To stop the vacuum cleaner, press the **Stop** button.

Warning!

Before switching the vacuum cleaner back on, make sure the motors have come to a complete halt.

- After finishing work, disconnect the vacuum cleaner from the power socket.

- To move the vacuum cleaner, use the large handle.

**Warning!**

The vacuum can be moved only on flat ground!

If the vacuum is moved on inclined grounds, you can risk to lose the control, because of the weight and to damage persons or things.

Warning!

During vacuuming, avoid rolling up or bending the flexible hose.

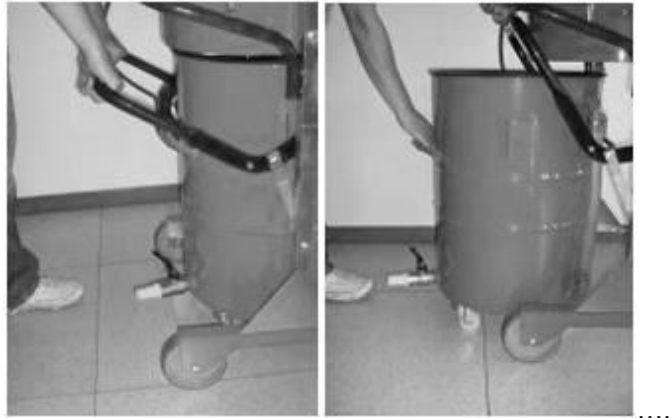
4.3 Releasing and removing the removable container

- Stop the vacuum motors by pressing the relevant **STOP** buttons.

Warning!

Disconnect the plug from the power socket.

- Lift the lever located in the bottom part of the cleaner to release and remove the container.



- Use the valve to empty the container.



- Empty the contents of the container and of the sieve grid into a special waste disposal container in accordance with laws applicable in the country where the vacuum cleaner is used.

Warning!

Perform the container release operation by means of the levers located on the sides or on the handle with BOTH HANDS!

Danger of crushing upper limbs when fitting and locking the container on the vacuum cleaner.

5 Maintenance

5.1 Informative notes

This section describes the control and special maintenance operations crucial for keeping the vacuum cleaner in perfect working condition.

Any other jobs which might be necessary to eliminate operating faults must be expressly authorised by the manufacturer. In such cases, always notify the identification details of the cleaner.

In the case of major repairs, it is best to contact an authorised dealer, whose skilled personnel, backed by all the technological experience relating to the original factory construction methods, are always available and ready to promptly intervene.

5.2 General safety warnings

Maintenance jobs must always be performed by skilled technicians, trained to carry out their specific jobs. In the case of this machine, these are:

- Mechanical maintenance
- Electrical maintenance

The Safety Manager has the precise duty of determining the professional capacities and skills of such persons.

Before doing any maintenance job, the safety manager must:

- Make sure there are no unauthorised persons in the work area.
- Make sure the necessary tools are on hand and that these are in good condition.
- Make sure that lighting is adequate and, if necessary, provide 24-V portable lamps.
- Make sure the maintenance engineer is equipped with all approved individual protection devices needed for the specific operation (gloves, eyewear, shoes, etc.).
- Make sure the maintenance engineer has carefully read the instructions contained in this manual and knows how the vacuum cleaner works.

Before carrying out a maintenance job, the maintenance engineer must:

- Disconnect the plug from the power socket.

Work done on motors or other electrical component parts must only be performed by a specifically trained electrician, authorised by the Safety Manager.

Always use tools that are in perfect condition and specifically made for the operation to be done. The use of unsuitable tools or tools not in good condition could cause serious damage.

5.3 Maintenance operations

Attention!

All the described operations must be done with the plug disconnected from the power socket. Before starting any maintenance or cleaning job, always wear adequate protective clothing, eyewear and/or gloves according to the type of job to be done.

For smooth vacuum cleaner operation, a number of controls are best made periodically:

- Check to see whether the filter is worn or has become too permeable.
- Make sure the sealing gaskets of the motor head base, of the filter-holder ring and of the container are working efficiently.
- The electrical parts (plugs, switches, cables, etc.) must not be faulty.
- The screws and nuts must always be tight.
- Make sure the container is not overfull. This should be emptied when the vacuumed material has reached 3/4 of maximum capacity.
- Check the integrity of the flexible vacuum hose and accessories to be used.
- If the flexible hose is perforated, the power of the cleaner will be reduced and dust and liquids will leak into the environment.

Warning!

All maintenance and repair jobs must be performed directly by columbus or its authorised dealers.

5.4 Replacing the filters

To replace the filters, proceed as follows:

- Turn off the vacuum cleaner by pressing the motor **STOP** buttons.
- Disconnect the vacuum cleaner plug from the power socket.

Important!

Wear individual protection devices.

- Block the vacuum cleaner by means of the retainer.



- Release the retainers that hold the motor head. Lift the motor head and rest this on a flat surface being careful not to damage the power cable.



- Lift the filter with its support.



- Loosen the clamp and remove the support ring with seal.



- Fit the new filter and put everything back in place, locking the cap.

Important!

All the material trapped by the filter and the filter itself must be disposed of through authorised channels in the country where the vacuum cleaner is used.

The container locking operation must be performed by one person only, who must lower the back side lever with both hands.

Caution!

Hand crushing hazard!.

5.5 Troubleshooting

Fault found	Possible fault	Recommended remedy
The cleaner fails to start	No power	Check the power mains supply. Check the integrity of the plug and power cable
Dust is leaking out	Perforated vacuum pipe	Replace the pipe
The vacuum cleaner does not work as it should	Pipe perforated or blocked	Check the pipe and, if necessary, replace it.
	Container full	Empty container.
	Filter blocked	Clean the filter and, if necessary, change it.
	Seals worn	Check the seals and, if necessary, replace it.
	Airleak	Check for any air leaks out of closing fasteners, tightening screws, container or filter chamber.
Motor very noisy		Contact columbus after-sales.

Warning!

For any other problems, contact the columbus after-sales service.

6 Recommended spare parts

Code	Description
21478300	POLYESTERFILTER Ø 500 H100
21479100	FILTERDICHTUNG Ø500
21487000	FILTERKLEMME Ø500

7 Declaration of conformity

in accordance with the EC Directive on Machines 2006/42/EC



Manufacturer G. Staehle GmbH u. Co. KG
 columbus Reinigungsmaschinen
 Mercedesstraße 15
 D-70372 Stuttgart

hereby declares that the following product conforms to the regulations of the above mentioned directive – as well as any modifications valid at the time the declaration was made.

Produkt: **Industrial vacuum cleaner**

Typ: **I WV 40/100**

The following related standards apply:

EN 13857
EN 60 204-1
EN 61000-3-2
EN 61000-3-3
EN 55 014
EN 60335-2-69

The following further EU Directive apply:

EMC-Directive 2014/30/EU
 2014/35/EU

Stuttgart, 01.09.2018 Dipl. Ing.(BA) Erich Stockmann, Head of Design and Development

Authorised Documentation Representative: Dr. M. Baumgärtel

Notes

Notes

G. Staehle GmbH u. Co. KG
columbus Reinigungsmaschinen
Mercedesstr.15
D - 70372 STUTTGART
Telefon +49(0)711 / 9544-950
info@columbus-clean.com
www.columbus-clean.com

columbus