

English

Product:	Vacuum cleaner for wet and dry applications
Type:	ISP iPulse AR (L)-1435 / ISP iPulse ARD (L)-1435 / ISP iPulse AR (L)-1635 / ISP iPulse ARD (L)-1635 including special vacuum cleaner: ISP iPulse ARW-1435 / ISP iPulse ARH-1035 / ISP iPulse ARH-1435 Asbestos
The structure of the equipment is in accordance with the following relevant regulations:	EC Machinery Directive 2006/42/EU EMC Directive 2004/108/EC
Harmonised standards used:	EN 12100-1, EN 12100-2, EN 60335-1, EN 60335-2-69, EN 55014-1, EN 55014-2, EN 61000-3-2
National standardised regulations and technical specifications used:	DIN EN 60335-1, DIN EN 60335-2-69

Vacuum cleaners from classes M and H have been successfully tested in accordance with IFA Test Certificate

- GS-BIA-MO2 (07/02),
- DIN EN 60335-2-69 (including) Appendix AA,
- DIN 60335-2-69/A1 (11/05).



IP24 CE

We declare, with exclusive responsibility, that this product complies with the EU Directive and the relevant standards: Machinery Directive 2006/42/EU with modifications, EMC Directive 2004/108/EC with modifications.

⚠ DANGER!

- ▶ Danger of suffocation
 - Keep packaging material such as plastic bags away from children.
 - ▶ Never stand or sit upon the vacuum device.
 - ▶ Particular caution is advised when ascending stairs. Pay attention to standing safely.
 - ▶ Do not pull the suction hose and connection line over sharp edges, kink it or shut it.
 - ▶ Always lay the suction hose and connection line so that nobody may trip over them.
 - ▶ In case of any leakage of foam or liquid, immediately switch off the vacuum device.
 - ▶ Always keep dry the inside of the lid.
 - ▶ Do not start the vacuum device including its accessories if:
 - the vacuum device shows detectable damage (fissures/cracks);
 - the power connection line is defective or shows fissuring or ageing; or
 - any invisible defect is suspected (after a fall).
 - ▶ Do not allow the rotating brushes to get into contact with the power connection line.

⚠ DANGER!

- ▶ Do not operate the vacuum device where there is danger of explosions.
- ▶ Keep away the vacuum device from inflammable gases and substances.

⚠ DANGER!

- ▶ Do not aspirate any combustible or explosive solvents, materials soaked in solvents, explosive dusts, liquids such as petrol, oil, alcohol, diluents or materials hotter than 60 °C (140 °F).
- ▶ Otherwise there will be danger of fire and explosions!

⚠ DANGER!

- ▶ Have repairs been made only by experts, e. g. the producer's service. Use original spare parts only.
- ▶ Improperly repaired devices pose a hazard for the user.

⚠ DANGER!

- ▶ Use the socket of the vacuum device only for the purposes defined in the instruction manual.
- ▶ In case of any inappropriate usage, improper operation or repair, the producer shall be exempt from liability.
- ▶ Do not use any damaged extension lines.
- ▶ If the connector line of the vacuum device has been damaged, it must be replaced with a special connector line which is available from the producer or their service.
- ▶ Electric brushes: Do not allow the rotating brushes to get into contact with the power connection line.
- ▶ The voltage on the type sign must correspond to the grid voltage.
- ▶ After every use and before any maintenance, switch off the vacuum device and pull the power plug.
- ▶ Pull on the plug only, not on the line.
- ▶ Never plug or pull the power plug with wet hands.
- ▶ The socket must be secured via a household fuse with a suitable current rating.
- ▶ Never open the vacuum device outdoors in rain or storm.

⚠ WARNING!

- ▶ ISP-AR and ISP-ARD-vacuum devices are not suitable for aspiration/clearing of toxic dusts.
- ▶ Class **M** vacuum devices are suitable for aspiration/clearing of dry, non-combustible dusts, non-combustible liquids, wood dusts and hazardous dusts with workplace limit values of $\geq 0.1 \text{ mg/m}^3$.
- ▶ Class **H** vacuum devices are suitable for aspiration/clearing of dry, non-combustible dusts, carcinogenic and pathogenic particles as well as non-combustible liquids, wood dusts and toxic dusts with workplace limit values of $< 0.1 \text{ mg/m}^3$.
- ▶ Vacuum cleaner for dust class **L** suitable for up / exhausting of dry, non-flammable, hazardous dust with occupational exposure limit values (AGWS) $> 1 \text{ mg/m}^3$.

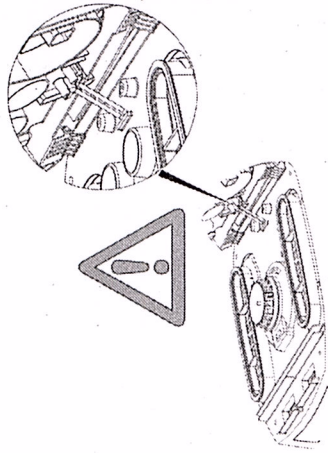
⚠ WARNING!

- ▶ Persons (including children) who are, due to their physical, sensory or intellectual abilities or lack of experience or knowledge, unable to safely use the vacuum device should not use it without supervision or instruction by a responsible person.
 - ▶ Particular caution is advised with children, elderly or infirm persons.
 - ▶ Do not point nozzle, tube or hose at people or animals.
- ### ⚠ WARNING!
- ▶ Use only the brushes supplied with the vacuum device or defined in the instruction manual. Use of any other brushes may pose a safety hazard.
 - ▶ Clean and disinfect the vacuum device immediately after use to prevent microbial contamination due to long-term failure to clean it, especially when using the device in food-processing.
 - ▶ Do not use any steam jets or high-pressure cleaners for cleaning.
 - ▶ Acids, acetone and solvents may corrode parts of the vacuum device.
 - ▶ Do not leave the device without supervision. In case of longer interruptions of work, pull the power plug.
 - ▶ Do not clean filter cassettes with compressed air

Read the operating manual carefully before starting to use the vacuum cleaner. It provides important instructions for the operation, safety, care and maintenance. Keep the operating manual in a safe place and, in case you sell the unit, hand it on to the next owner. The manufacturer reserves the right to carry out modifications to the design and equipment. Any other work not covered by this operating manual must not be carried out.





1 Before use

- ▶ When unpacking, check that the delivery is complete and that there is no transport damage.
- ▶ Before using, the operators should be provided with information, instructions and training for the use of the vacuum cleaner and the substances that it is to be used for, including the safe procedure for the removal of the gathered material.



2 Indicator and operating elements

Select from the following functions and settings:

0	 OFF	Vacuum cleaner is switched off	- Plug socket current-conducting
I	 ON	Vacuum cleaner is running	- Plug socket current-conducting - Automatic shaker function off
IR	 ON+IR	Vacuum cleaner is running	- Plug socket current-conducting - Automatic shaker function on
AR	 AR	Ready for operation	- Plug socket current-conducting - Automatic shaker function on - The vacuum cleaner is switched on and off via the connected electrical/compressed air tool* at the plug socket.
		Automatic shaker function	- During suction, the folding filter cassettes are cleaned alternately when a specific negative pressure is reached, at which there is still adequate suction air.
		Fill level indicator*	- When the container is full and/or there is a blockage in the suction hose, the full indicator lights up. On the M and H vacuum cleaners, an acoustic signal is also emitted.
		Speed regulation*	- The suction performance can be regulated using the speed regulator.
		Setting the suction hose diameter*	- Determine the maximum negative pressure for automatic shaking. (* depending on the equipment variant of your vacuum cleaner)

3 Commissioning

3.1 Switching on and off

The plug socket on the vacuum cleaner will always be live when the mains plug is plugged in, irrespectively of the position of the switch.

⚠ CAUTION!
Electric tools and compressed air tools must be switched off when they are connected

NOTE
If the switch is in the >O< position, the plug socket on the vacuum cleaner can be used as an extension lead.

⚠ Connection value: Vacuum cleaner + connected unit, maximum 16 A.

- ▶ Insert the plug into socket
- >O< Vacuum cleaner is switched off
- >I< Vacuum cleaner switched on without shaker function
- >IR< Vacuum cleaner switched on with automatic shaker function

>AR< Vacuum cleaner on standby
The vacuum cleaner only switches on when the tool is switched on.

After the tool is switched off, the vacuum cleaner runs on for approx. 10 sec to prevent any residue from collecting in the hose.

- ▶ Set the vacuum cleaner to the switch position >O<.
- ▶ Pull out the plug after you have finished.
- ▶ Fix the suction hose in the accessory storage location* on the back of the container for storage.
- ▶ The ends of the hose can be pushed into each other to prevent particles of dirt from coming out.

⚠ CAUTION!
Selector switch for minimum material flow (horn and light) on vacuum cleaners classes "M" and "H"

In the modes >AR< and >IR< the following setting is made, depending on the diameter of the hose:

Inside diameter of the hose	Switch position
Ø 35 mm	70 m³/h
Ø 27 mm	40 m³/h
Ø 21 mm	20 m³/h

No speed regulation is carried out.
The vacuum cleaner always runs at max. speed.

- ▶ Push the plug of the vacuum cleaner into the plug socket.
- ▶ Set the switch for normal operation without shaker function to "I" and set it to "IR" for normal operation with shaker function and to "AR" for standby mode.
- ▶ The vacuum cleaner is ready for suction.
- ▶ After vacuum cleaning, set the switch to "O".

- ↳ The vacuum cleaner is switched off.
- ▶ Pull the mains plug of the vacuum cleaner out of the plug socket.
- ▶ Secure the mains cable.
- ▶ Remove the electric/compressed air tool.

(* depending on the equipment variant)

4 Operating modes

- ▶ When using the grip handle you can adapt the suction performance by using the slider to control access of air into the hose.

4.1 Dry vacuum cleaning

You should only use the vacuum cleaner with a dry filter and appropriate accessories to prevent dust from accumulating and forming encrustations.

When using the vacuum cleaner to remove soot, cement, plaster, flour or similar dust we recommend using fleece filter bags. Always use filter bags in combination with folding filter cassettes.

NOTE

M, H and H Asbestos class vacuum cleaners should be preferably used as dry vacuum cleaners.

4.2 Wet vacuum cleaning

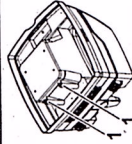
⚠ CAUTION!

Switch the vacuum cleaner off immediately if foam or liquid starts to come out.

- ▶ Empty the container and, if necessary, the folding filter cassette.

NOTE

Clean the water level sensors (1) regularly and examine for signs of damage.



- ▶ Vacuum cleaning without paper filter bags.
The folding filter cassettes are designed for wet vacuum cleaning.
The fitted sensor switches the motor off when the container is full. The handling of the vacuum cleaner can be compromised by a full container.
- ▶ Empty the vacuum cleaner (see "6 Emptying the container").

⚠ CAUTION!

If the vacuum cleaner is not switched off, the re-start protection unit remains operative. Only after switching off and re-starting is the vacuum cleaner ready for use again.

- ▶ Remove the suction hose from the liquid before emptying.
- ▶ After switching off, a small quantity of water can flow back out of the hose, as a result of the high suction level and the favourable flow condition in the container.
- ▶ If you use it as a dry vacuum cleaner, you must insert dry filters.

NOTE

If you change between dry and wet vacuum cleaning frequently, we recommend using a second set of filters, preferably polyester folding filter cassettes.

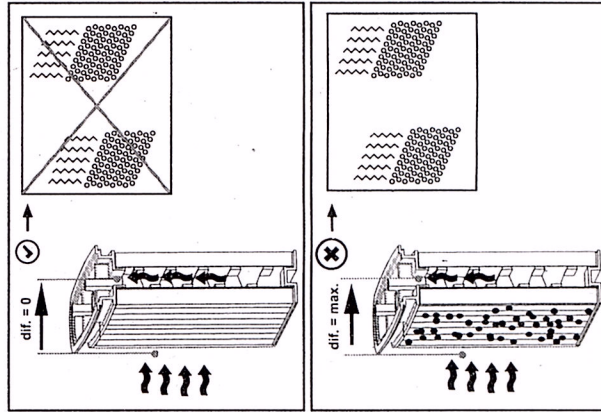
5 Permanent filter cleaning

The vacuum cleaner is fitted with an electromagnetic filter cleaning unit which can be used to shake the dust off the folding filter cassettes.

The folding filter cassettes are cleaned alternately so that continuous working can be guaranteed.



- Continuous monitoring of the filter filling level through differential pressure measurement, for an absolutely precise on-demand filter cleaning during the operation
- Thereby constant high air flow cleaning guaranteed during the operation, even for critical types of dust



6 Emptying the container

NOTE

Only permitted for dust with AGW's > 1mg/m³

- Switch the vacuum cleaner off, pull the mains plug out.
- ▶ Open the latches.
- ▶ Remove the cover and suction hose from the container.
- ▶ Empty the container by pouring out.

6.1 Dispose of the fleece filter bag

- ▶ Pull the mains plug out (see short-form instructions).
- ▶ Fit mouth protection.
- ▶ Remove suction hose, close off the suction spigot with a plug*.
- ▶ Open the side latches, remove the top section.
- ▶ Carefully pull the flange off the suction spigot and close off the flange.
- ▶ Dispose of the vacuumed up material in accordance with legal requirements.

6.2 Dispose of the PE emptying and disposal bag

- ▶ PE emptying and disposal bag: Switch the vacuum cleaner on, shake the folding filter cassettes. Switch off the vacuum cleaner (see short-form instructions).
- ▶ Fit mouth protection.
- ▶ Remove suction hose, close off the suction spigot with a plug*.
- ▶ Open the side latches, remove the top section.
- ▶ Before setting aside the top section, switch to >IR< position, to draw up any floating dust which may exist.
- ▶ Close off the PE emptying and disposal bag carefully with the tape provided.
- ▶ Carefully pull the flange off the suction spigot and close it off
- ▶ Remove the PE emptying and disposal bag carefully from the container
- ▶ Dispose of the vacuumed up material in accordance with legal requirements.

6.3 Insert fleece filter bag

NOTE

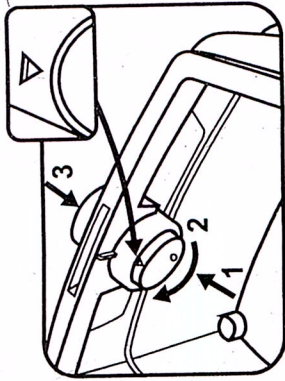
Only use fleece filter bags for dry vacuum cleaning.

- ▶ Slide the flange completely over the suction aperture (see short-form instructions).

NOTE

- ▶ Operating the rotary slider*
 - ▶ Push the rotary slider* from the inside to the outside, turn through 180° (see mark) and then push inwards again from the outside through the suction spigot
 - ▶ Place the rotary slider* in the suction aperture with the mark ▲ pointing upwards.

(* depending on the equipment variant)



- ▶ Place the upper section on the container and close the side latches.

6.4 Insert PE emptying and disposal bag*

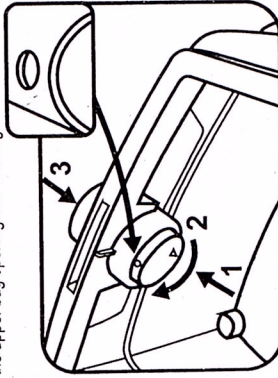
NOTE

Only the vacuum cleaners class M and H with special containers and rotary slider in the suction aperture of types ISP, ARM, ISP-ARH and ISP-ARH-Asbestos are suitable for the use of PE Emptying and disposal bags.

NOTE

- ▶ Operating the rotary slider*
 - ▶ Push the rotary slider* from the inside to the outside, turn through 180° (see mark) and then push inwards again from the outside through the suction spigot
 - ▶ Place the rotary slider* in the suction aperture with the mark ● pointing upwards.

- ▶ Slide the flange completely over the suction aperture and place the upper bag opening over the edge of the container.



- ▶ Place the upper section on the container and close the side latches.

(* depending on the equipment variant)

7 Changing the filter

7.1 Changing the folding filter

(See short-form instructions)

- ▶ Shake the folding filter cassettes before changing them.

- ▶ Turn the lock on the latch through 90° in a counter-clockwise direction with a coin or similar object and push the latch to the rear.
- ▶ Fold the hood up
- ▶ Immediately isolate the folding filter cassettes that you have removed in a dust-tight plastic bag and dispose of properly in accordance with the stipulations.
- ▶ Insert new folding filter cassettes.
- ▶ Lift the locking bracket up, fold the hood down and click in place with light pressure.

8 Changing the motor protection filter

(See short-form instructions)

NOTE

- If the motor protection filter is contaminated this indicates defective filter cassettes.
 - ▶ Replacing the folding filter cassettes.
 - ▶ Replace the motor protection filter or wash the motor protection filter under flowing water, dry and re-insert...

9 Transport

- ▶ Insert the closing plug* of the vacuum cleaner into the suction aperture.
- ▶ The motor head must be securely fixed to the container (close the latches).
- ▶ Place the accessories in a suitable plastic bag and seal the plastic bag or place it in the tool storage compartment.
- ▶ Plug the ends of the suction hose into each other.
- ▶ Place the hose around the vacuum cleaner and clamp onto the handle (see short-form instructions).

10 Maintenance

NOTE

Switch the vacuum cleaner off and pull out the mains plug before any maintenance work.

For maintenance by the user, the vacuum cleaner must be

- dismantled,
 - cleaned and
 - maintained,
- as far as possible without creating any danger to the maintenance personnel or other.

Precautionary measures

Suitable precautionary measures include

- Cleaning before dismantling,
- Provide local filtered positive ventilation where the vacuum cleaner is to be dismantled,
- Clean the maintenance area and
- suitable personal protection equipment.

Precautionary measures with vacuum cleaners class H and M
The outside of the vacuum cleaner should be cleaned and wiped down or should be treated with a sealing agent before being

removed from the dangerous area. All parts of the vacuum cleaner must be considered to be contaminated when they are removed from the danger area and suitable handling must be used to prevent dust distribution.

Contaminated items

When carrying out maintenance or repair work, all contaminated items which have not been adequately cleaned must be disposed of. Such items must be disposed of in impermeable bags in accordance with the applicable regulations concerning the disposal of such waste.

Testing the effectiveness of the vacuum cleaner

NOTE: In addition, the effectiveness of the vacuum cleaner class H must be checked at least once a year.

There must be an adequate air exchange rate L in the room if the exhaust air returns to the room. Further information can be taken from your national regulations.

If the suction of the vacuum cleaner reduces and the cleaning procedure of the folding filler cassettes increases, the suction performance is not adequate (provided that the container is empty and the fleece filter bag has been replaced) then it is necessary to replace the folding filler cassettes (see short-form instructions and Section 7.1).

11 First aid in the event of a fault

Malfunctions cannot always be traced back to defects in the vacuum cleaner.

Fault	Possible cause	Remedy
Reduction in suction	Filter contaminated fleece filter full Container full	Clean. Change. Empty.
Vacuum cleaner will not start	Nozzle, pipes or hose blocked Mains plug plugged in? Mains power missing? Mains cable OK? Cover closed properly? Water sensor switched off? Vacuum cleaner in readiness for operation "AR"?	Clean. Clean. Empty. Clean. Set to "I" or "IR" (see "2. Display and Operating Elements").
The vacuum cleaner does not start when the tool is switched on in the >AR< mode	Is the mains plug of the unit in the plug socket? Solenoid valve of compressed air automatic switch-on* contaminated?	Put the mains plug in the vacuum cleaner plug socket Flush the compressed air automatic switch-on* with alcohol
PE employing and disposal bag is sucked against the filter	Position of rotary slider incorrect	Set rotary slider to ● position (see "6.4 Inserting PE employing and disposal bag").
Vacuum cleaner classes M or H: with inserted paper filter dust in filter	Position of rotary slider incorrect	Set rotary slider to ▲ position (see "6.3 Inserting fleece filter bag").

Do not take any other action and contact the central customer service workshop.

12 Genuine accessories

NOTE

Use genuine accessories.

Article designation	Properties/material	Order quantity (1 set)
fleece filter bag FBV 25/55	for 30 litre plastic container, BGIA class M approved	5/10 Number
Filter cassette FK 4300	Cellulose material, BGIA class M approved	2 Number
Filter cassette FKP 4300	Polyester material, BGIA class M approved	2 Number
Filter cassette FKP 4300 HEPA (H 14)	3 layer filter cassette, BGIA class H approved	2 Number
PE employing and disposal bag	only for IS vacuum cleaners class M and H	5 Pieces
PE employing and disposal bag ASBESTOS	only for IS vacuum cleaner H ASBESTOS	5 Pieces

Additional accessories can be found in the special accessory list which can be obtained on request from the Starmix Service Team on the internet: www.starmix.de.

13 Technical Data

	ISP iPulse ARD (L)-14...	ISP iPulse ARD (L)-16...	ISP iPulse ARM-14.../ISP iPulse ARM-16...	ISP iPulse ARH-14.../ISP iPulse ARH-16...	ISP iPulse ARH-10... Asbest
Voltage	220-240 V~	220-240 V~	220-240 V~	220-240 V~	220-240 V~
Frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated power	1200 Watt	1400 Watt	1400 Watt	1200/1400 Watt	1000 Watt
Max. power	1400 Watt	1600 Watt	1600 Watt	1400/1600 Watt	1000 Watt
Air flow*	m ³ /h/MG 220	m ³ /h/MG 230	m ³ /h/MG 248	m ³ /h/MG 230	m ³ /h/MG 225
Negative pressure*	hPa/MG 248	hPa/MG 259	hPa/MG 248	hPa/MG 259	hPa/MG 225
Air flow**	m ³ /h/SE --	m ³ /h/SE --	m ³ /h/SE --	m ³ /h/SE 140	m ³ /h/SE 140
Negative pressure**	hPa/SE --	hPa/SE --	hPa/SE --	hPa/SE 225	hPa/SE 225
Noise level	db(A) 69,5	db(A) 69,5	db(A) 69,5	db(A) 69,5	db(A) 69,5
Weight	kg 17,1	kg 17,1	kg 17,1	kg 17,1	kg 17,1

* at the fan, ** at the hose

Connection line on vacuum cleaners with plug socket: H05WF 3 x 1.5

14 Tests and approvals

Electro-technical tests must be carried out in accordance with the accident prevention regulations (BGV A3) and in accordance with DIN VDE 0701 Part 1 and Part 3. These tests are required in accordance with DIN VDE 0702 at regular intervals and after repair or modification.

The vacuum cleaners are successfully tested in accordance with IEC/EN 60335-2-69.

NOTE

Old equipment contains valuable materials which are designed for re-processing. The vacuum cleaners must not be thrown away in the normal household waste, but should be disposed of at a suitable proper collection system, e. g. via your communal disposal location.

10.1 Cleaning

NOTE

Acids, alkalis and solvents can corrode the vacuum cleaner parts.

- ▶ Clean the container and accessories with water.
- ▶ Wipe the top section with a damp cloth.
- ▶ Allow the container and accessories to dry.

10.2 Repair

⚠ DANGER!

- ▶ Inappropriately repaired vacuum cleaners present a danger to the operator.
- ▶ Have repairs carried out by specialists, e. g. customer service. Use only genuine spare parts.