



ESTA

Operating Instructions

Water pre-separator

Water pre-separator \varnothing 100 mm connection (order no.: 90.100)
Water pre-separator \varnothing 125 mm connection (order no.: 90.125)
Water pre-separator \varnothing 140 mm connection (order no.: 90.140)
Water pre-separator \varnothing 160 mm connection (order no.: 90.160)
Water pre-separator \varnothing 180 mm connection (order no.: 90.180)

and variations



Do not use this device unless you have read the user manual and understand it.

Translation of the original instructions
90180-08-01

Edition notice

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Type of device: Water pre-separator
Item no.: 90.100 // 90.125 // 90.140 // 90.160 // 90.180 and variants

Publisher

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1. General instructions

Before operation, all persons who are to use the device or perform maintenance on it must be provided with information, instructions and training in using the device and on the substances for which it is to be used, including the procedure for safe disposal of the collected material. Responsibilities must be clearly established for the following:

- **Installation**
- **Commissioning**
- **Operation**
- **Maintenance and repairs**



Read the operating manual carefully before working with the device.

The device must be used only by persons who have been instructed in its handling and are explicitly authorized to use it.

Always keep the operating manual at the place where the device is being used, so that it can be seen by personnel at all times.

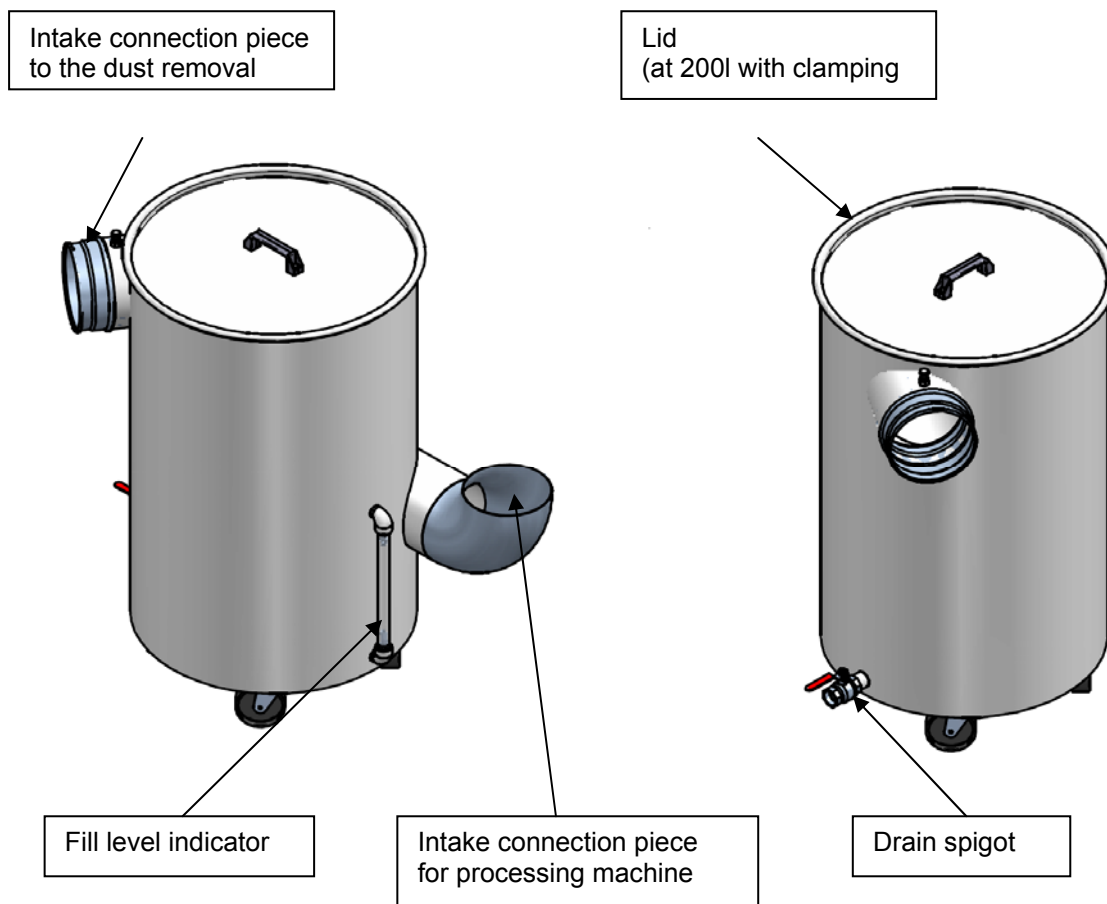
2. Product identification

2.1 Technical data

We reserve the right to make technical changes.

Item no.		90100	90125	90140	90160	90180
Intake connection piece - \emptyset	[mm]	100	125	140	160	180
Intake connection piece \emptyset (to the machine)	[mm]	100	125	140	160	180
Container volume	[l]	100	200	200	200	200
Drain spigot	["]	1 (IG)				
Dimensions (container \emptyset x H)	[mm]	470 x 840	605 x 1,010			
Weight (empty)	[kg]	approx. 20	approx. 30			
Production year		See model plate				

2.2 Device diagram



2.3 Intended application

2.3.1 Ambient conditions

Ambient temperature	[°C]	$5 \leq \vartheta \leq 40$
Rel. humidity	[%]	30–70

2.3.2 Intended use

The device has been manufactured according to recognised safety regulations and must be used as intended:

- for commercial use, such as in industrial enterprises and workshops.
- as a pre-separator for spark-producing treatment processes.
- to reduce fire hazards in the downstream dust extraction system.

Other applications are considered unintended use. ESTA is not liable for damages due to unintended use!

The manufacturer sets up the device according to the operator's information.

2.3.3 Unintended use

The device has been manufactured based on the very latest technology and recognized safety regulations. Unintended use may cause damage and accidents. The pre-separator is not intended for this!

Therefore,

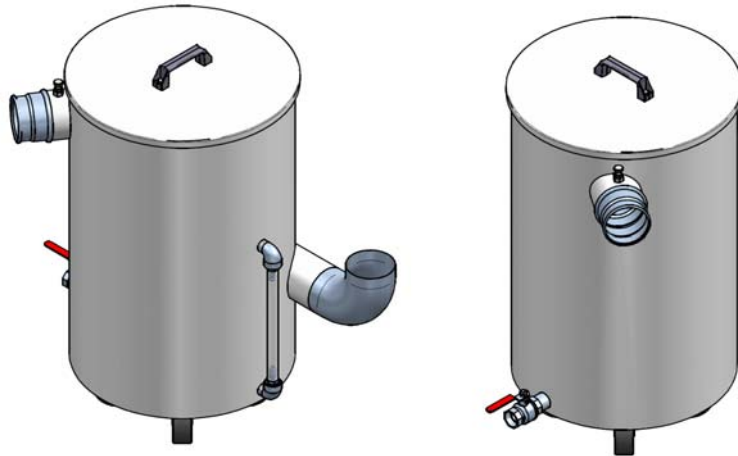
- **Do not** operate without the adequate liquid.
- **Do not** use or store outdoors or under wet conditions if the temperature falls below freezing point.
- **Do not** change the location of the device during suction operation.
- **Do not** set up or operate in gas-explosive areas.
- **Do not** use in painting operations.
- **Do not** suck up any dust that might create potentially explosive dust or gas-explosive zones.
- **Do not** suck up any materials that might create dangerous hydrogen mixtures (e.g. aluminium, aluminium alloys, etc.).
- **Do not** suck up liquids.
- **Do not** suck up any media that tends to form slag or foam.
- **Do not** suck up aggressive gases.

2.3.4 Reasonably foreseeable misuse

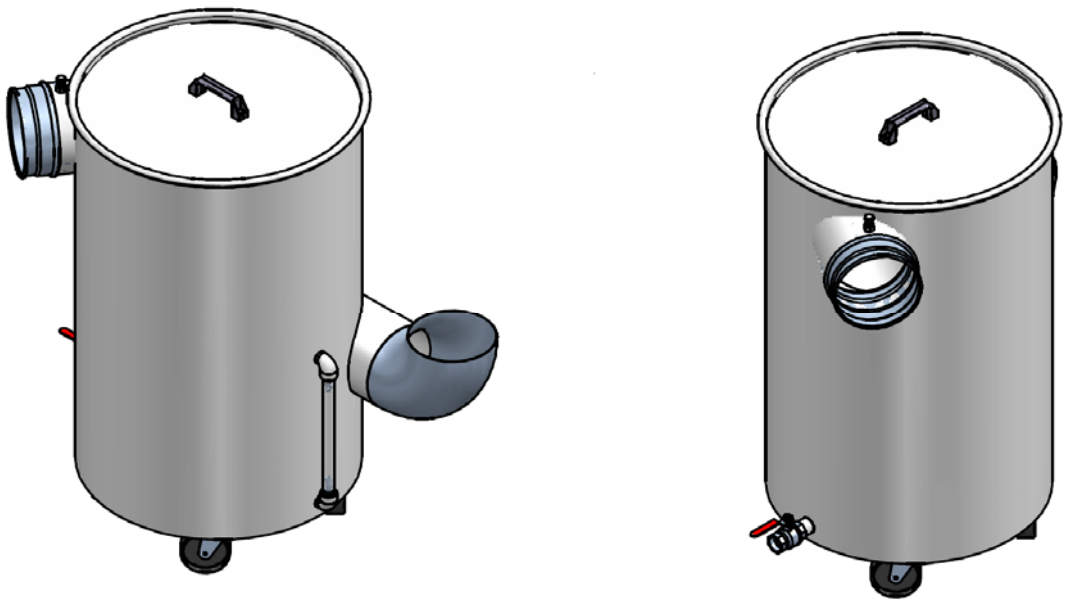
- **Do not** suck up hot embers, such as cigarette butts.
- **Do not** tilt.
- **Do not** operate without the mouldings (90° and 45° elbows).

3. Product description

3.1 Device diagram 100l



3.2 Device diagram 200l



3.3 Function description

The water pre-separator is used before a dust extraction system. It serves to catch sparks or chips in spark-producing treatment processes. The connection to the dust extraction system is performed by the operator using the supplied connecting hose or through a pipeline supplied by the operator himself.

The vacuum created by the dust extraction system draws air through the hose or pipeline connected to the intake connection piece of the pre-separator.

The water in the container binds to the dust and removes a large part of the suctioned sparks.

A fill level indicator that can be read from the outside, shows the optimum water level.




Dirty water can be easily disposed of by draining it through a drain spigot at the bottom of the container.

4. Safety instructions




4.1 Hazard categories

Safety instructions and cross-topic information are indicated in this manual by symbols.

Based on the severity of the hazard, the hazard warnings are categorized as follows:

	<p>DANGER</p> <p>Hazard warning about an immediate danger to people. Failure to comply can lead to severe injury or death.</p>
	<p>WARNING</p> <p>Warning about a recognisable hazard. Failure to comply can lead to severe injury or death, and can destroy the device or parts thereof.</p>
	<p>CAUTION</p> <p>Instruction about a hazard. Failure to comply can lead to mild injury and to damage to the device.</p>

4.2 Symbol explanation

	Further information
	Reference to ESTA customer service
	Reference to legal regulations

4.3 General safety instructions

In all emergencies, the suction operation must be stopped immediately.

If there is a fire, alert the fire department immediately, and contain the fire by appropriate means. Therefore keep a suitable extinguishing agent near the device before start-up and during operation.

4.4 Preventing static electricity



WARNING

Danger of electrostatic charging when used without the required water

- Only use the pre-separator if the optimum water level is kept.

The suction hoses used must be electrically conductive or have a proper electrical connection between the hose and the connection piece.

To do this:

- Strip the metal spiral from the suction hose.
- Slide the suction hose over the suction or connection piece.
- Press the bare wall of the connection piece with a pipe clamp.

4.5 Preventing mechanical hazards



WARNING

Crushing hazard, if the pre-separator is accidentally driven over body parts!

- Do not change the location of the pre-separator during operation.
- Wear safety shoes.



WARNING

Finger crushing hazard when putting on the lid

- Hold the lid by the handle and set it onto the device.
- Do not reach between the container and the lid.





WARNING


Crushing hazard for fingers when closing the clamping ring (only the 200l container)!

- Close the clamping ring carefully.

4.6 Preventing dust hazards


	HAZARD
	<p>Fire hazard from deposited sources of ignition in the pre-separator, pipeline or connected dust extraction system!</p> <ul style="list-style-type: none"> • Regularly check the pre-separator for dust accumulation. • Check the water level regularly and fill as necessary. • Regularly check the pre-separator and dust extraction system together with its pipeline for dust deposits and remove them if present.

	WARNING
	<p>Damage due to dust release</p> <ul style="list-style-type: none"> • Maintenance, cleaning, repair and emptying may only be performed by expert personnel. • Wear personal protective equipment. <ul style="list-style-type: none"> - Respirator mask (particle filter class P3) - Protective clothing - Safety gloves • Set up locally filtered forced-air ventilation when the device is being maintained, inspected or cleaned.

	<p>Even when using the water pre-separator, it cannot be completely ensured that no ignition source will settle in the device. It is therefore important to ensure that the dust extractor, the water pre-separator and the pipeline undergo regular inspection and monitoring</p>
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Maintenance procedures, including the removal and emptying of the pre-separation container, must be performed by expert personnel. Persons assigned to cleaning work must be instructed on the toxic materials that are sucked in. Harm to bystanders and the environment must be prevented by all means.

4.7 Preventing liquid hazards

	WARNING
	<p>Risk of slipping due to leakage from the drain spigot.</p> <ul style="list-style-type: none"> • Keep the drain spigot closed. • Empty only on suitable floor or directly into a container.

5. Delivery and commissioning

5.1 Delivery and transport



DANGER

Danger from falling device

- Do not walk under heavy loads.
- The lifting device must be designed for a minimum of 50kg.



HAZARD

Crushing hazard if the device falls during transport.

- Secure the device during transport.
- Wear safety shoes.

At delivery, the pre-separator is fastened to a pallet. Remove the protective cover and floor fixings. Lift the pre-separator with a crane or with a forklift. Pay attention to the weight of the device and its centre of gravity during all transport operations.

Upon delivery please inspect the device for transportation damage. Damage determined must be reported and documented immediately.



ESTA customer service: +49 (0) 7307 804 - 0



Make sure the floor has adequate weight capacity, is level and can be properly driven on when transporting the device.

5.2 Connection

The device must be placed as near as possible to the dust source and the dust extraction system.

Required floor conditions:

- level
- inclination $\leq 10^\circ$
- non-slip
- have a minimum weight capacity of 50kg/m²

5.3 Commissioning

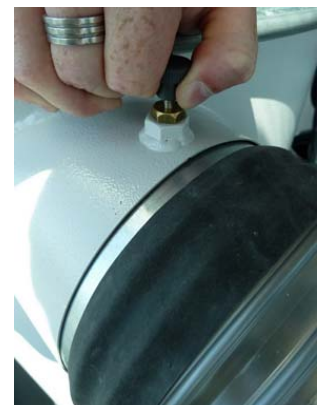


Use original ESTA accessories!

- Make sure that the drain spigot is closed at the pre-separator.
- With 200l containers → loosen the lid clamping ring.
- Remove the lid.
- Fill the pre-separator with water up to the mark on the fill level indicator (optimum level).



- Establish the connection between the processing machine or the suction element (e.g. exhaust arm) and the intake connection piece.
 - with a matching suction hose that meets the national requirements for this application.
 - with a matching pipe (such as a spiral duct) that meets the national requirements for this application.
- To create a connection with the dust extraction system, slide the supplied suction hose over the connection piece and secure it.
 - please note the hole for the locating pin in the connection piece of the hose



6. Operating instructions

6.1 Operating the device

After connecting the exhaust hose to the processing machine that is to be exhausted and making the connection between pre-separator and dust extraction system:

- Turn on the dust extraction system.
- Start the processing machine.
- Start the processing operation.

During operation, do not change the device's location.

When finishing the processing operation:


- End the processing operation.
- Turn off the processing machine.
- Turn off the dust extraction system.



When sucking up very fine particles of dust, sludge deposits very fast on the floor. Increase cleaning interval.

7. Maintenance & troubleshooting

7.1 Maintenance instructions

	WARNING
	<p>Damage due to dust release</p> <ul style="list-style-type: none"> • Maintenance, cleaning, repair and emptying may only be performed by expert personnel. • Wear personal protective equipment. <ul style="list-style-type: none"> - Respirator mask (particle filter class P3) - Protective clothing - Safety gloves • Set up locally filtered forced-air ventilation when the device is being maintained, inspected or cleaned.

For maintenance by qualified personnel, the device must be opened, cleaned and inspected at the given locations.

During maintenance or repair work, all soiled objects that can no longer be adequately cleaned must be disposed of. Dispose of such objects in compliance with the applicable regulations for disposal of such waste.

7.2 Inspection and maintenance intervals

Regular maintenance consists of the following intervals:

1. Daily inspection includes:

➤ **By the device user**

Visual inspection

- for damage to the pre-separator or its parts,
- check the water level of the container (it must always be filled up to the mark on the water fill level indicator)

2. Weekly maintenance includes:


➤ **By expert maintenance personnel**

Functional and visual inspection

- Drain the water.
- Clean pre-separator.
- Fill with water up to the mark on the fill level indicator.
- Check the pipeline and clean if necessary.
- Remove the dust residues.


7.2.1 Replacement and wear parts

 Use original ESTA replacement and wear parts!

 With the device model information and serial number, request the replacement parts you need from the ESTA replacement part service: **+49 (0) 7307 804 - 0**

Replacement parts	Container	
	100 l	200 l
Lid	30003258 1 piece	30008401 1 piece
Clamping ring	--	02002364 1 piece
View hose Fill level indicator	06002774 0.3m	06002774 0.3m

7.3 Replacing the water

 **WARNING**
Risk of slipping due to leakage from the drain spigot.

- Keep the drain spigot closed.
- Empty only on suitable floor or directly into a container.

If possible, water replacement must be done when there is no work going on. 1 person wearing personal protective equipment is needed for this operation.

- Ensure that the downstream dust extraction system is switched off and secured against unintentional restart.
- If necessary, interrupt the connection between the processing machine and pre-separator as well as the hose connection between the pre-separator and dust extraction system.
- Empty the pre-separator onto a suitable floor (e.g. floor-embedded water discharge) or emptied directly into a container.
- Then, open the drain spigot.
- Dispose of water and sludge in an environmentally sound manner.



7.4 Cleaning the device

Clean the device regularly and remove dust deposits. To do this:

- Drain the water and sludge as described.
- Loosen and remove the deposited dust mud or chips with a suitable tool (e.g. shovel).
 - Make sure that the coating is not damaged during this operation!!
- Wash the pre-separator with clean water.
 - You can also use a water jet for this purpose.
 - Do not use a high-pressure washer!
- Check the intake and connection pieces for deposits and remove them if present.
- Wipe the external surface thoroughly with a damp, disposable cloth.

7.5 Storing the device

If the device is not needed in its location of use for a long time, it must be stored in a dry room. The temperature should not be below 5°C or above 40°C.


Before the device is stored,

- Drain the water and sludge as described.
- Loosen and remove the deposited dust mud or chips with a suitable tool (e.g. shovel).
 - Make sure that the coating is not damaged during this operation!!
- Wash the pre-separator with clean water.
 - You can also use a water jet for this purpose.
 - Do not use a high-pressure washer!
- Check the intake and connection pieces for deposits and remove them if present.
- Wipe the external surface thoroughly with a damp, disposable cloth.

7.6 Eliminating faults

Failure	Possible cause	Possible solution
Overly weak suction	Blocked suction pipeline or connection hose	Check the pipeline or hose and remove deposits
	Non-optimal water level	Check the water level and refill or drain to attain an optimal water level (marking on the fill level indicator).
Foamy water	Unsuitable material being sucked up	Stop the system! Operation prohibited! Contact the ESTA customer service.
Water slags quickly	Cleaning interval too low	Increase cleaning interval.
Corrosion in the water pre-separator	The coating has been damaged from corrosive chips	Remove chips and increase the cleaning interval. Renew the coating if necessary.
The drain spigot is open but nothing comes out	The drain spigot is blocked from coarse chips or dust sludge	Remove chips or dust sludge with a shovel or similar tool before draining. Remove the blocking object from the drain spigot.

8. Disposal

	CAUTION
	<p>Damage due to dust release</p> <ul style="list-style-type: none"> • Emptying and disposal must be performed only by expert personnel. • Wear personal protective equipment. <ul style="list-style-type: none"> - Respirator mask (particle filter class P3) - Protective clothing - Safety gloves • Set up locally filtered forced-air ventilation when the device is being maintained, inspected or cleaned.

8.1 Removing dust, deposited sludge and water

Always make sure that you dispose of the collected water and the deposited sludge and dust according to local regulations.

8.2 Disposing of the device

Before disposing of the device

- Drain the water and sludge as described.
- Remove sludge deposited at the bottom with a suitable tool.
- Wash the pre-separator with clean water.
- Check the intake and connection pieces for deposits and remove them if present.
- Pack the device according to local regulations.

Dispose of everything according to local regulations.

	<p>Due to contamination of the device with toxic dust, ESTA cannot take the device back.</p>
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9. Optional equipment

9.1 Electrically conductive throughout

The device can optionally be built electrically conductive throughout. This creates potential equalization between the processing machine and the workstation.


Perform the following work at least every 2,000 hrs, or after every reorganisation as part of inspection by an electrical specialist:

- Checking and recording the potential equalisation of the system and pipeline system to prevent electrostatic charging

	DANGER
	<p>Risk of explosion due to insufficient conductivity</p> <ul style="list-style-type: none"> • Conductive extraction and recording equipment (e.g. extraction hoods, piping) and conductive processing machines (e.g. devices of protection category II) which are not earthed through the device must be grounded in another way by the user in order to prevent electrostatic charging.

9.2 Exhaust valve

Optionally, the water pre-separator can also be equipped with an exhaust valve. This is compulsory for suctioning materials that may form combustible and explosive air mixtures or hydrogen gases when mixed with water (see BGR 109). The valve opens when the water pre-separator stops.

	<p>Check the valve regularly for its proper functioning (open and close), remove deposits if needed!</p>
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10. EC Declaration of Incorporation

Name of manufacturer: ESTA Apparatebau GmbH & Co. KG
Address of manufacturer: Gotenstraße 2 - 6
 89250 Senden

Name of person in charge of documentation: Ramona Pflum
 Gotenstraße 2 - 6
 89250 Senden

We hereby declare that the design of the incomplete machine

Machine: Pre-separator used in spark generating applications to remove dry dust.

Series: Water pre-separator
Model: 100l water pre-separator with ø 100 connection
 200l water pre-separator with ø 125 connection
 200l water pre-separator with ø 140 connection
 200l water pre-separator with ø 160 connection
 200l water pre-separator with ø 180 connection

conforms to the following regulations:

2006/42/EC EC Machinery Directive

Reconciled norms used:

EN ISO 121002011-03 "Safety of Machinery – Basic concepts, general principles for design

Safety and health protection requirements according to 2006/42/EC Appendix I that are applied and observed:
 1.1.1; 1.1.2; 1.1.3; 1.1.5; 1.1.6; 1.3; 1.3.1; 1.3.2; 1.3.3; 1.3.4; 1.3.9; 1.5; 1.5.2; 1.5.4; 1.5.6; 1.5.7; 1.5.11; 1.5.13; 1.6; 1.6.1; 1.6.2; 1.6.4; 1.6.5; 1.7; 1.7.1; 1.7.1.1; 1.7.2; 1.7.3; 1.7.4; 1.7.4.1; 1.7.4.2; 1.7.4.3

Note: The incomplete machine can be operated only once it has been determined that the building's capacities meet the specifications in the directives mentioned above.

Technical documentation was created according to Appendix VII Part B of this guideline. We agree to provide the responsible authorities with this documentation in electronic form upon justified request.

Senden, 14/03/2014



Dr. Peter Kulitz
 Managing Director



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