

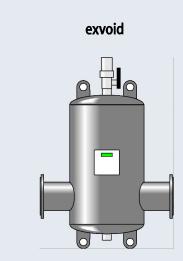
Reflex ex Abscheider

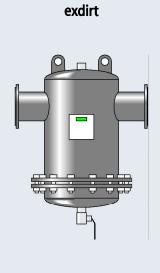
exvoid exdirt extwin

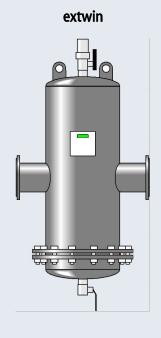
DE	Betriebsanleitung
GB	Operating manual
FR	Mode d'emploi
NL	Gebruiksaanwijzing
IT	Manuale d'uso
DK	Betjeningsvejledning
NO	Bruksanvisning
SE	Driftsinstruktioner
РО	Instrukcja obsługi
RU	Руководство по эксплуатации
CZ	Návod k použití
LV	Lietošanas instrukcija
LT	Naudojimo instrukcija
TR	Kullanım kılavuzu
SI	Navodila za obratovanje
GR	Εγχειρίδιο λειτουργίας

Üzemeltetési utasítás

HU







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1 Safety

1.1 Explanation of symbols

1.1.1 Symbols and notes used

The following symbols are used in this operating manual.



Danger

- Danger to life and/or severe damage to health
 - The corresponding warning symbol in combination with the "Danger" signal term indicates an imminent threatening danger which will result in death or severe (irreversible) injuries.



Warning

- Severe damage to health
 - The corresponding warning symbol in combination with the "Warning" signal term indicates a threatening danger which may result in death or severe (irreversible) injuries.



Caution

- Damage to health
 - The corresponding warning symbol in combination with the "Caution" signal term indicates a danger which may result in minor (reversible) injuries.



Attention!

- · Damage to property
 - This symbol in combination with the "Attention" signal word indicates a situation that may cause damage to the product itself or objects in its vicinity.



Notice!

This symbol in combination with the "Notice" signal word indicates useful tips and recommendations regarding the efficient use of the product.

1.1.2 Safety symbols used

The following safety symbols are used in this operating manual. They are also attached to the equipment or in its vicinity.



This symbol warns of a large weight.



This symbol warns of a hot surface.



This symbol warns of magnetic fields that may affect cardiac pacemakers for example.



This symbol warns of overpressure in conduits and connections.



1.2 Personnel requirements

Only specialist personnel or specifically trained personnel may install and operate the equipment.

1.3 Notes to personnel



Notice!

Every person installing this equipment or performing any other work at the equipment is required to carefully read this operating manual prior to commencing work and to comply with its instructions. The manual is to be provided to the product operator and must be stored near the product for access at any time.

- Modifications of the equipment are not permitted.
 - For example, welding at other points than the connection piece (in equipment with welded connection)
 - For example, mechanical deformations
- Use only original parts provided by the manufacturer when replacing parts.
- All required inspections must be ordered by the operator pursuant to the provisions of the applicable industrial safety regulations. Required inspections and tests are:
 - Inspections and tests prior to commissioning
 - Inspections and tests after significant modifications of the installation
 - Recurring inspections
- · The devices to be installed and operated must not exhibit any visible exterior damage at the pressure component.
- Ignoring this manual and the safety information in particular, may cause the destruction and defects of the equipment, endanger persons and adversely affect the functioning. Any contravention voids the guarantee and liability.

1.4 Intended use

- The devices are manufactured from steel with exterior coating; the interior is uncoated. The devices may be used only in systems that are sealed against corrosion and with the following water types:
 - · Non-corrosive
 - · Chemically non-aggressive
 - Non-toxic
- The ingress of atmospheric oxygen by permeation into the entire heating and cooling water system, make-up water and similar must be reliably minimised during operation.

1.5 Inadmissible operating conditions

The devices are not suited for the following conditions.

- · In drinking water systems
- For outdoors operation
- For the use with mineral oils
- · For the use with flammable media
- · For the use with distilled water

1.6 Residual risks

This device has been manufactured to the current state of the art. However, some residual risk cannot be excluded.



Warning – large weight!

- The devices are very heavy. Thus, there is a risk of physical damage and accidents.
 - Use only lifting gear suitable for transport and installation.



Caution – risk of burning!

- Excessive surface temperatures in heating systems can cause skin to burn.
 - Wait until surfaces have cooled down or wear protective gloves.
 - The operator is required to attach corresponding warning notes in the device vicinity.



Caution – risk of injury!

- Incorrect installation or service work may cause burns and other injuries at the connections when hot water or steam suddenly escape at pressure.
 - Ensure proper installation.
 - Ensure that the system is de-pressurised before performing service work at the connections.



2 Description of the device

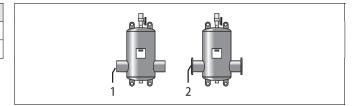
2.1 Devices

2.1.1 Exvoid

A gas/air separator with micro bubble separation removing circulating free air and gas bubbles.

The device is available in the following variants:

No.	Variant
1	Welded connection
2	Flange connection

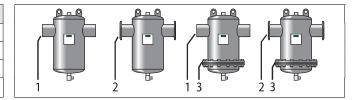


2.1.2 Exdirt

A dirt/sludge separator removing circulating free dirt and sludge particles.

The device is available in the following variants:

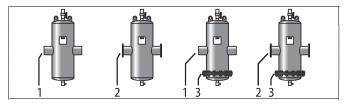
No.	Variant
1	Welded connection
2	Flange connection
1+3	Welded connection and service flange
2 + 3	Flange connection and service flange



2.1.3 Extwin

A combined dirt/sludge separator and gas/air separator removing circulating free air and gas bubbles and free dirt and sludge particles. The device is available in the following variants:

No.	Variant
1	Welded connection
2	Flange connection
1+3	Welded connection and service flange
2+3	Flange connection and service flange



2.2 Optional equipment

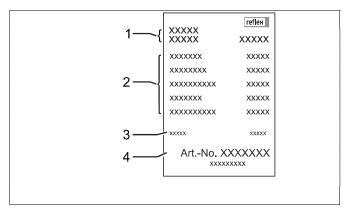
2.2.1 Sludge separator

The devices can be expanded with the following accessories:

· Magnet insert

2.3 Identification

No.	Information on nameplate	Meaning
1	XXX	Device name
2	Туре	Device type
	Connections	Connection
	Max. allowable pressure	Maximum allowable
		pressure
	Max. allowable	Maximum allowable
	temperature	temperature
	Year of manufacturing	Year of manufacturing
3	Serial no.	Serial number
4	ArtNo-	Article number

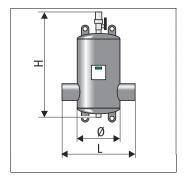


3 Technical data

3.1 Exvoid

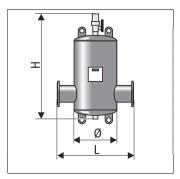
Steel with welded connection

Туре	Art. No.	Weight (kg)	Connection (mm)	V _{max} (m³/h)	L (mm)	Ø (mm)	H (mm)	Max. temp.(°C)	Max. pressure (bar)
A 60.3	8251100	9	60,3	12,5	260	132	629	110	10
A 76.1	8251110	9	76,1	20	260	132	629	110	10
A 88,9	8251120	18	88,9	27	370	206	743	110	10
A 114.3	8251130	18	114,3	47	370	206	743	110	10
A 139.7	8251140	42	139,7	72	525	354	767	110	10
A 168.3	8251150	42	168,3	108	525	354	767	110	10
A 219.1	8251160	48	219,1	180	650	409	1050	110	10
A 273.0	8251170	135	273,0	288	750	480	1157	110	10
A 323.9	8251180	200	323,9	405	850	634	1426	110	10



Steel with flange connection

	9								
A 50	8251300	14	DN50/PN16	12,5	350	132	629	110	10
A 65	8251310	15	DN65/PN16	20	350	132	629	110	10
A 80	8251320	25	DN80/PN16	27	470	206	743	110	10
A 100	8251330	27	DN100/PN16	47	475	206	743	110	10
A 125	8251340	54	DN125/PN16	72	635	354	767	110	10
A 150	8251350	57	DN150/PN16	108	635	354	767	110	10
A 200	8251360	106	DN200/PN16	180	775	409	1050	110	10
A 250	8251370	170	DN250/PN16	288	890	480	1157	110	10
A 300	8251380	250	DN300/PN16	405	1005	634	1426	110	10

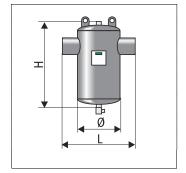




3.2 Exdirt

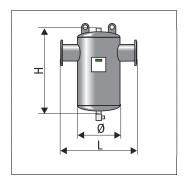
Steel with welded connection

Туре	Art. No.	Weight (kg)	Connection (mm)	V _{max} (m³/h)	L (mm)	Ø (mm)	H (mm)	Max. temp.(°C)	Max. pressure (bar)
D 60.3	8252100	9	60,3	12,5	260	132	469	110	10
D 76.1	8252110	9	76,1	20	260	132	469	110	10
D 88.9	8252120	17	88,9	27	370	206	583	110	10
D 114.3	8252130	17	114,3	47	370	206	583	110	10
D 139.7	8252140	41	139,7	72	525	354	607	110	10
D 168.3	8252150	42	168,3	108	525	354	607	110	10
D 219.1	8252160	83	219,1	180	650	409	890	110	10
D 273.0	8252170	135	273,0	288	750	480	997	110	10
D 323.9	8252180	200	323,9	405	850	634	1266	110	10



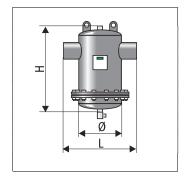
Steel with flange connection

D 50	8252300	13	DN50/PN16	12,5	350	132	469	110	10
D 65	8252310	15	DN65/PN16	20	350	132	469	110	10
D 80	8252320	25	DN80/PN16	27	470	206	583	110	10
D 100	8252330	26	DN100/PN16	47	470	206	583	110	10
D 125	8252340	54	DN125/PN16	72	635	354	607	110	10
D 150	8252350	56	DN150/PN16	108	635	354	607	110	10
D 200	8252360	105	DN200/PN16	180	775	409	890	110	10
D 250	8252370	170	DN250/PN16	288	890	480	997	110	10
D 300	8252380	250	DN300/PN16	405	1005	634	1266	110	10



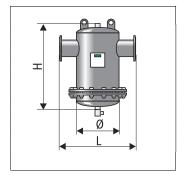
Steel with welded connection, service flange

		•	-						
D 60.3 R	8252200	23	60,3	12,5	260	132	469	110	10
D 76.1 R	8252210	23	76,1	20	260	132	469	110	10
D 88.9 R	8252220	36	88,9	27	370	206	583	110	10
D 114.3 R	8252230	37	114,3	47	370	206	583	110	10
D 139.7 R	8252240	85	139,7	72	525	354	607	110	10
D 168.3 R	8252250	86	168,3	108	525	354	607	110	10
D 219.1 R	8252260	129	219,1	180	650	409	890	110	10
D 273.0 R	8252270	230	273,0	288	750	480	997	110	10
D 323.9 R	8252280	340	323,9	405	850	634	1266	110	10



Steel with flange connection, service flange

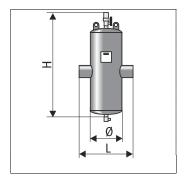
steel mange connection, service nange									
D 50 R	8252400	28	DN50/PN16	12,5	350	132	469	110	10
D 65 R	8252410	29	DN65/PN16	20	350	132	469	110	10
D 80 R	8252420	44	DN80/PN16	27	470	206	583	110	10
D 100 R	8252430	46	DN100/PN16	47	470	206	583	110	10
D 125 R	8252440	98	DN125/PN16	72	635	354	607	110	10
D 150 R	8252450	100	DN150/PN16	108	635	354	607	110	10
D 200 R	8252460	151	DN200/PN16	180	775	409	890	110	10
D 250 R	8252470	265	DN250/PN16	288	890	480	997	110	10
D 300 R	8252480	390	DN300/PN16	405	1005	634	1266	110	10



3.3 Extwin

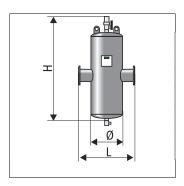
Steel with welded connection

Туре	Art. No.	Weight (kg)	Connection (mm)	V _{max} (m³/h)	L (mm)	Ø (mm)	H (mm)	Max. temp.(°C)	Max. pressure (bar)
TW 60.3	8253100	12	60,3	12,5	260	132	754	110	10
TW 76.1	8253110	12	76,1	20	260	132	754	110	10
TW 88.9	8253120	24	88,9	27	370	206	973	110	10
TW 114.3	8253130	24	114,3	47	370	206	973	110	10
TW 139.7	8253140	58	139,7	72	525	354	1210	110	10
TW 168.3	8253150	58	168,3	108	525	354	1210	110	10
TW 219.1	8253160	113	219,1	180	650	409	1492	110	10
TW 273.0	8253170	215	273,0	288	750	480	1896	110	10
TW 323.9	8253180	275	323,9	405	850	634	2206	110	10



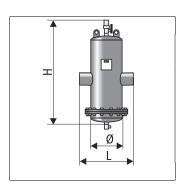
Steel with flange connection

Steel With hange connection									
TW 50	8253300	17	DN50/PN16	12,5	350	132	754	110	10
TW 65	8253310	18	DN65/PN16	20	350	132	754	110	10
TW 80	8253320	31	DN80/PN16	27	470	206	973	110	10
TW 100	8253330	33	DN100/PN16	47	475	206	973	110	10
TW 125	8253340	70	DN125/PN16	72	635	354	1210	110	10
TW 150	8253350	73	DN150/PN16	108	635	354	1210	110	10
TW 200	8253360	135	DN200/PN16	180	775	409	1492	110	10
TW 250	8253370	250	DN250/PN16	288	890	480	1896	110	10
TW 300	8253380	325	DN300/PN16	405	1005	634	2206	110	10



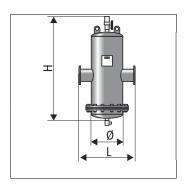
Steel with welded connection, service flange

TW 60.3 R	8253200	29	60,3	12,5	260	132	754	110	10
TW 76.1 R	8253210	29	76,1	20	260	132	754	110	10
TW 88.9 R	8253220	46	88,9	27	370	206	973	110	10
TW 114.3 R	8253230	47	114,3	47	370	206	973	110	10
TW 139.7 R	8253240	102	139,7	72	525	354	1210	110	10
TW 168.3 R	8253250	102	168,3	108	525	354	1210	110	10
TW 219.1 R	8253260	182	219,1	180	650	409	1492	110	10
TW 273.0 R	8253270	320	273,0	288	750	480	1896	110	10
TW 323.9 R	8253280	450	323,9	405	850	634	2206	110	10



Steel with flange connection, service flange

	steel mange connection, service hange								
TW 50 R	8253400	34	DN50/PN16	12,5	350	132	754	110	10
TW 65 R	8253410	35	DN65/PN16	20	350	132	754	110	10
TW 80 R	8253420	54	DN80/PN16	27	470	206	973	110	10
TW 100 R	8253430	55	DN100/PN16	47	475	206	973	110	10
TW 125 R	8253440	114	DN125/PN16	72	635	354	1210	110	10
TW 150 R	8253450	117	DN150/PN16	108	635	354	1210	110	10
TW 200 R	8253460	204	DN200/PN16	180	775	409	1492	110	10
TW 250 R	8253470	340	DN250/PN16	288	890	480	1896	110	10
TW 300 R	8253480	480	DN300/PN16	405	1005	634	2206	110	10



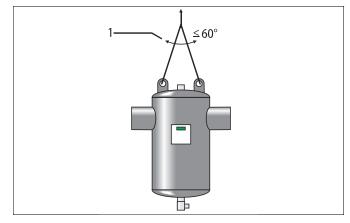


3.4 Installation and assembly

3.5 Notes

The following items must be considered when assembling and installing the equipment:

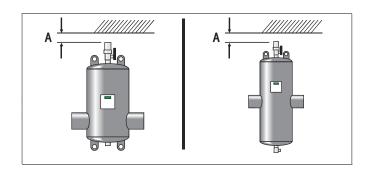
- · The flow direction is not pre-determined.
- Ensure a vertical and stress-free installation.
 - Any stresses that may occur in some cases must be countered by appropriate constructive actions. Stresses may be caused by temperature effects, for example.
- Ensure sufficient bearing capability of the installation site.
 - This applies to filling the separator with water in particular.
- The equipment is not a load-bearing construction element.
 - By default, the calculation of the vessels does not take lateral acceleration forces into account. Avoid alternating stresses such
 as pressure shocks, abrupt pressure changes, or strong vibrations.
- Use only approved transport and lifting gear.
 - The eyes provided on the device are intended solely as installation aids.
- The angle (1) of the lifting tackles must be maximum 60°.



3.6 Space requirements

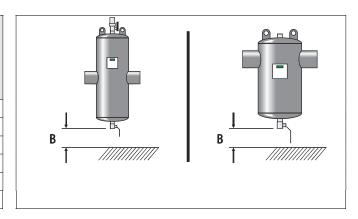
A: Minimum free space above the top part of the ventilation

Type: 82511 xx 82513 xx	Type: 82531 xx 82532 xx 82533 xx
	82534 xx
50 mm	50 mm



B: Minimum free space below the draw-off tap

Connection	Connection	Type:	Type:
		82531 xx	82521 xx
		82532 xx	82522 xx
		82533 xx	82523 xx
		82534 xx	82524 xx
DN 50/65	OD 60.3 / 76.1	400 mm	300 mm
DN 80/100	OD 88.9 / 114.3	550 mm	400 mm
DN 125 / 150	OD 139.7 / 168.3	750 mm	500 mm
DN 200	OD 219.1	1000 mm	700 mm
DN 250	OD 273.0	1350 mm	850 mm
DN 300	OD 323.9	1700 mm	1000 mm



3.7 exdirt / extwin

Properly install the draw-off tap at the devices.

3.8 exvoid / extwin

Comply with the following instructions:

- For a hydraulic pressure test at the equipment, install a blind cover (to be supplied by the user) at the blow-off opening of the venting mechanism.
- To drain the released air or gases (odour), you may connect an additional hose or pipe at the ½" thread of the blow-off opening.

4 Operation

Note the following for operation:

- The glycol portion of the water must be maximal 50 percent.
- When dosing additives, comply with the manufacturer specification regarding the permissible dosing quantities. This is important in particular to prevent corrosion.
- Chemical additives such as inhibitors must be used only after an impact assessment in respect to all the materials used in the system.
 - This impact assessment is the responsibility of the user.
- Keep the system free from foaming substances. Foam or dirt beyond a specific portion can cause a temporary leaking at the venting valve.

5 Maintenance



Caution – risk of burning!

- Excessive surface temperatures in heating systems can cause skin to burn.
 - Wait until surfaces have cooled down or wear protective gloves.
 - The operator is required to attach corresponding warning notes in the device vicinity.

The time intervals for maintenance work depend on the specific operating conditions.

5.1 Pressure test

During a hydraulic pressure test, the pressure must not exceed 1.5 times the maximum working pressure.

5.2 Cleaning

5.2.1 Sludge separator

- The cleaning interval depends on the accumulated dirt within the system.
- Provide a catching container and a pressure and temperature-resistant drain hose, if required.

For cleaning, proceed as follows:

- 1. Gradually open the desludging valve for a short time until sludge no longer drains off.
 - Make sure that not much water escapes.
- 2. Subsequently, check the system pressure and add water as required.



5.2.2 Sludge separator with removable floor flange

The separator element at the equipment can be cleaned and replaced, if required.

- The equipment must have cooled down, been emptied, and de-pressurised.
- Keep a suitable flange gasket at hand.

For cleaning, proceed as follows:

- 1. Use appropriate lifting gear to carefully lower the separator element and the bottom cover to the floor.
 - Ensure that the separator element can neither topple nor roll away or execute other unintended movements.
 - Avoid damage to the draw-off tap.
- 2. Remove any deposits from the separator element.
 - Use a water jet or low-pressure cleaner.

Reassemble in reverse order.

- 3. Insert a functioning gasket.
- 4. Tighten the flange screws with a suitable torque.
 - Tighten diagonally and step-by-step as per the state of the art.

5.2.3 Sludge separator with magnet insert



Caution – magnetic field!

- The device contains permanent magnets generating a static magnetic field. Magnets may affect the functioning of cardiac pacemakers and implanted defibrillators.
 - Persons with such medical devices or other metallic implants must maintain sufficient distance to magnets.
 - Provide warning information before people enter the sphere of influence of magnets.

The device can be emptied without the operation being shut down.

For emptying, proceed as follows:

- 1. Unscrew the magnet from the immersion sleeve.
- 2. Provide a vessel to capture the drained material.
- 3. Slowly or for a short time only open the draw-off tap.
- 4. Screw the magnet into the immersion sleeve.



6 Annex

6.1 Conformity and standards

6.1.1 Pressure Equipment Directive

This product has been designed and manufactured in accordance with the specifications for sound engineering practice as required by the Pressure Equipment Directive (97/23/EC).

The selected technical specification for the compliance with the underlying safety requirements of the Directive 97/23/EC is shown on the nameplate.

6.2 Guarantee

The respective statutory guarantee regulations apply.

6.3 Glossary

Defibrillator	Medical implanted device preventing cardiac arrest due to ventricular fibrillation.			
Inhibitor	Additive decelerating or preventing chemical, biological or physical reactions.			
Permeation	Process in which a substance (permeate) penetrates or migrates through a solid body.			



Thinking solutions.

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