

Translation of the original instructions with installation instructions
Filter aid dosing device
SDG-100

Mat. No. of original instructions
79792383



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2 General safety instructions

2.1 Safety instructions for installation and operating personnel

This translation of the original instructions contains important safety information which must be heeded at all times during installation, normal operation and maintenance.

Non-observance can result in the following risks to persons and the environment as well as in damage to the machine or system:

- ⇒ Failure of critical functions of the machine or system or of its component parts.
- ⇒ Danger to persons from electrical or mechanical effects as well as from chemical reactions.
- ⇒ Danger to the environment owing to the leakage of hazardous substances.

Before installation / start-up:

- Read this translation of the original instructions carefully.
- Make sure that installation and operating personnel are adequately trained.
- Make sure the contents of the original instructions are fully understood by the responsible persons.
- Define areas of responsibility and competence.
- Prepare a maintenance schedule.

During operation of the system:

- Keep this translation of the original instructions handy at the place of use.
- Heed the safety instructions. Always operate the machine or system in accordance with its ratings.

If in doubt:




- Consult the manufacturer.

2.2 Warning structure







Where possible, warnings are structured according to the following system:

Signal word	
Possibly with symbol	Nature and source of the danger <ul style="list-style-type: none">⇒ Potential consequences of non-observance• Action to avert the danger.

2.3 Warning symbols used

 DANGER!
Immediate danger! ⇒ Non-observance will result in serious or fatal injury.
 WARNING!
Potentially dangerous situation! ⇒ Non-observance can result in serious or fatal injury.
 CAUTION!
Potentially dangerous situation! ⇒ Non-observance can result in minor or moderate injuries.
CAUTION! (without a symbol)
Potentially dangerous situation! ⇒ Non-observance can result in property damage.

2.4 Other symbols used

	Danger: High voltage!
	Information about environmental protection
	Wear protective clothing!
	Eye protection must be worn!
	Respirator must be worn!
	Hand symbol: Indicates general information and recommendations
•	Bullet: Indicates the order in which actions are to be carried out
⇒	Arrow: Indicates responses to actions

3 Glossary

System:

Customer's complete system in which the FG dosing device is integrated.

Pressure difference / differential pressure:

Pressure difference between the dirty and clean air sides of the filter in [mbar] or [Pa].

Velocity:

Flow rate through the filter surface. Calculated as the volume flow divided by the filter area [$\text{m}^3/\text{m}^2 \text{ min}$].

Residual dust content:

Amount of particulate matter on the clean air side [mg/m^3].

Dew point:

Temperature at which a gas is saturated with moisture. Mist droplets form at temperatures below the dew point.

Filter aid:

Powdery aid to facilitate the separation of problem dusts.

Injector nozzle:

Used to add filter aid to the dust-laden air prior to filtration.

4 General information

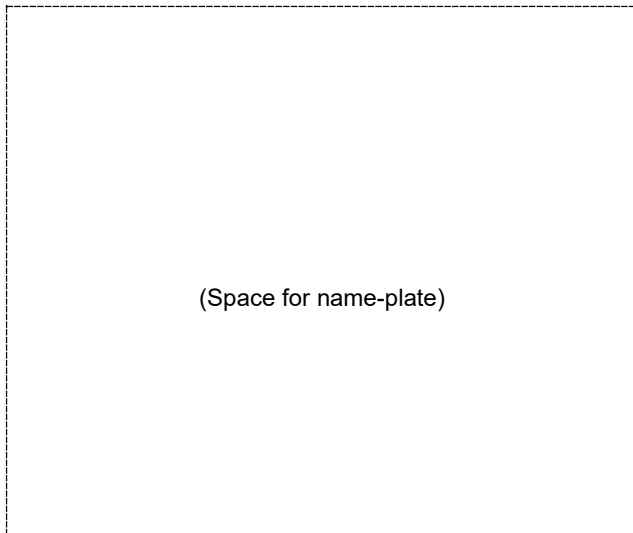
4.1 Manufacturer

Filtration Group GmbH
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D-74613 Öhringen
Phone +49 7941 6466-0
Fax +49 7941 6466-429
fm.de.sales@filtrationgroup.com
www.industrial.filtrationgroup.com

4.2 Information about the original instructions

FG Mat. No. 79792383
Date: 16.01.19
Version: 04

4.3 Model code



5 Intended use

⚠ DANGER!
PROHIBITED: <ul style="list-style-type: none">• Use for other purposes without prior consultation with the manufacturer.• Use with smouldering, burning or sticky particles.• Use with highly explosive dusts (e.g. aluminium dust, explosives, etc.).
⚠ CAUTION!
This FG dosing device is only allowed to be used in accordance with the operating conditions specified in the contract documentation and in the original instructions. All forms of use which deviate from or exceed the limits of use described above are considered to be contrary to the intended purpose. The manufacturer is not liable for any damage resulting from such use.
CAUTION!
Conditionally allowed: <ul style="list-style-type: none">• Use in connection with foodstuffs, provided this is explicitly confirmed by the manufacturer in the contract documentation (offer / order confirmation).

The FG dosing device is used in conjunction with an FG dust collector to separate sticky or very fine dusts. A filter aid is added to the dust-laden air. The filter aid surrounds the problem dust and forms a layer on the cleaned filter elements. The dust is not in direct contact with the filter element and is thus no longer able to block it or clog it. The element has a much longer service life as a result.

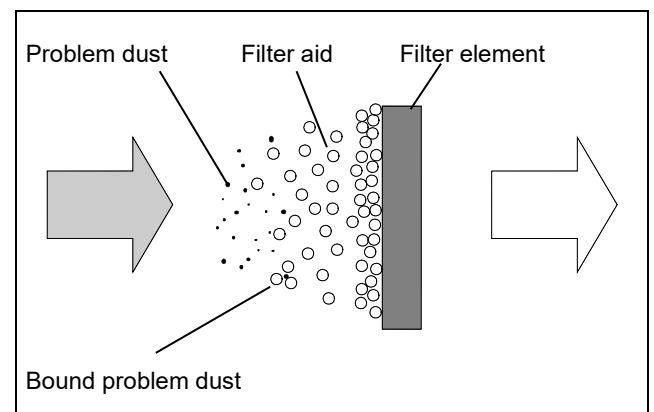


Fig. 1: Principle of the filter aid

6 Functional description

6.1 Principle of the process

CAUTION!

Abrasive filter aid must NOT be aimed at the wall when it is added to the dirty air side.

- 1 The dust-laden air flows into the dirty air side.
- 2 The dust particles are separated on the filter elements.
- 3 The cleaned air enters the clean air side.

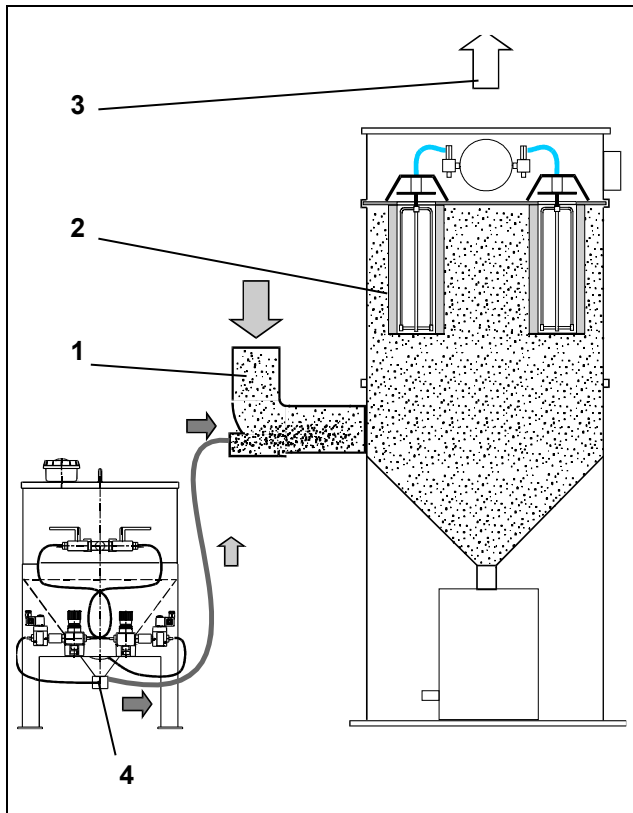


Fig. 2: Filtration principle

- 4 Compressed air is applied to the injector nozzle. A mixture of filter aid and air is fed into the air inlet pipe. The filter aid forms a layer over the problem dust and the filter elements.

The filtration process does not need to be interrupted for cleaning (EXCEPTION: Dust collectors with only one cleaning valve).

During intermittent operation, the filter aid is added as soon as the fan is switched on.

6.2 Main components

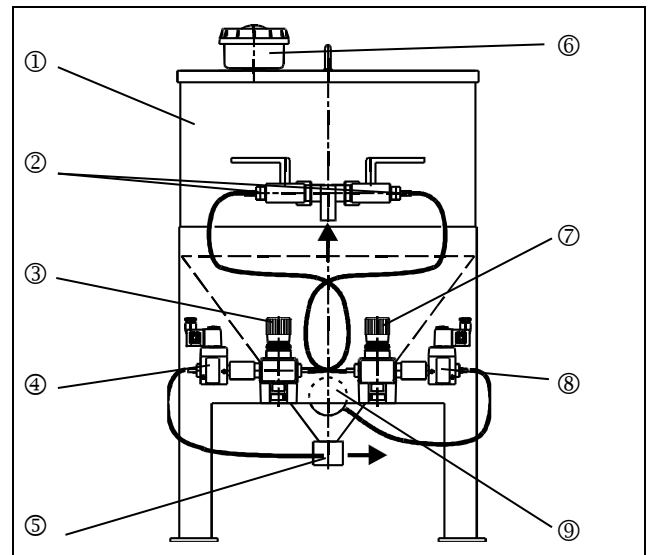


Fig. 3: Main components

1	Housing
2	Ball valves for shutting off the compressed air
3	DRV 1: Pressure regulating valve for the injector nozzle
4	Magnetic valve 1/4"
5	Injector nozzle
6	Air breather / vent filter
7	DRV 2: Pressure regulating valve for the piston vibrator
8	Magnetic valve 1/4"
9	Piston vibrator (concealed)

Level sensor (optional):

Sensor for monitoring the minimum level in the filter aid tank. An electrical signal is output if the level falls below this minimum value.

Air injector loosening system



The air injector loosening system is used to fluidise powdery products. Bridging is prevented in this way and the powder is discharged uniformly.

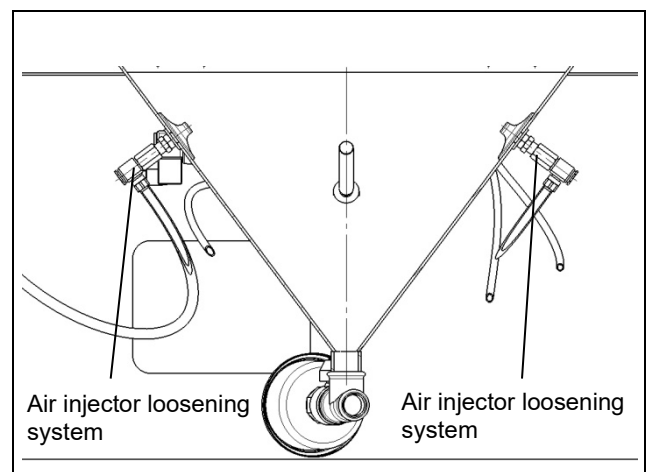


Fig. 4: Accessories for the dosing device

7 Technical data

7.1 General data (excluding optional equipment)

Dosing device housing (standard version):

Material:	Sheet steel
Surface finish:	EPS plastic coating
Colour:	RAL 7035 (light grey)
Seals:	Natural rubber
Max. operating temperature:	40°C
Max. operating pressure:	7 bar
Capacity:	100 l
Dosing rate:	Approx. 10 g/s (see Appendix)

Other materials available for special applications.

Pneumatic power consumption:

Compressed air:	6 bar, dry
Consumption per dosing cycle:	Approx. 2 m³N*

Electrical power consumption:

Magnetic valves:	24 VDC / 4.5 W
Cyclic duration factor:	100%

Noise emission (partially optional):

Continuous sound pressure level:	< 70 dB(A)**
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Ambient conditions:

Ambient temperature:	5 to 40°C
Floor:	Level surface, free from vibration
Atmosphere:	Non-corrosive

7.2 Order-specific data

FGC.com Made in Germany		Filtration Group GmbH Schleifbachweg 45 D-74613 Öhringen fm.de.service@filtrationgroup.com	
Typ			
Type			
Auftrags-Nr. Order No.		Mat.-Nr. No. Id.	
Nr. Cde.		Part number	
Temp. max. °C		Herst.-Dat. Date-Product	J M
		Manufacturing date	
Element		Betr. Druck Suppression oper. pressure (mbar)	

The order-specific data can be taken from the name-plate.

8 Transport and storage

Transport

- The transport lock must not be removed until the system has reached its place of use.
- Do not lift the dosing device by the handles.

Storage

- Always store in the original packaging.
- Always store in a dry, frost-free room.



Seaworthy packaging is specified in the contract documentation as an option.

9 Installation

WARNING!

If the system is installed by unauthorised persons:

- ⇒ Risk of injury.
- ⇒ All warranty claims are rendered invalid.
- The system must be installed by a suitably trained person!

* N = Normal conditions (roughly equivalent to the "suction capacity" of a compressor)

** Test set-up: Distance from the dust collector: 1 m, height above floor: 1.60 m

9.1 Installation

CAUTION!

- Do not install in the vicinity of devices which are sensitive to vibration.
- Do not lift using the handles!



- Install the dosing device as close as possible to the dust collector.
- Avoid long distances (> 5 m).

- Lift the dosing device off of the pallet and place it in position.
- Align the dosing device so that it is exactly level.
- Bolt the dosing device tightly to a firm surface (use dowels).
- Do not install the dosing device outdoors or in damp areas.

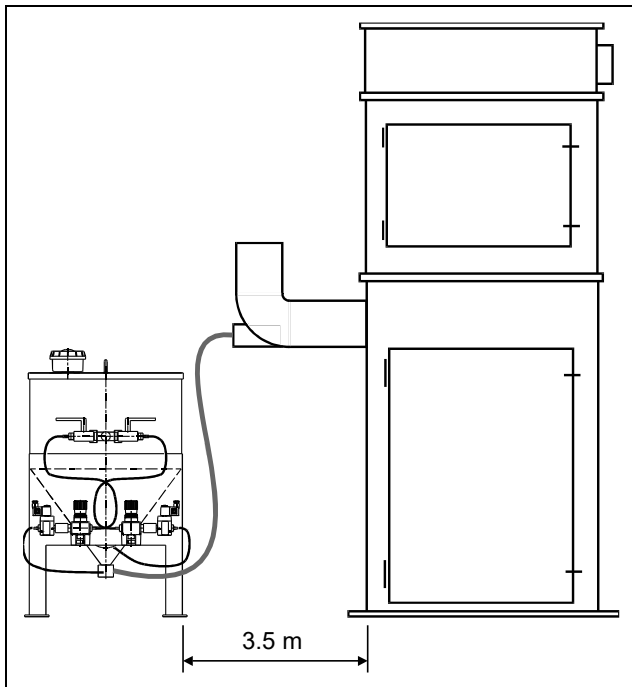


Fig. 5: Installation

9.2 Installing the piping / pump selection

- All connections must be properly secured (e.g. with clamps, clamp rings, flange joints, etc.).
- Check that all connections are tight.

9.3 Compressed air supply

CAUTION!

- Lay pipes WITHOUT STRESS!
- Lay hoses so that they CANNOT BE KINKED!
- Keep hoses clear of aisles!

Compressed air quality:

- Oil and water-free
- Free of debris
- Pressure $p = 6$ bar
- For quality grades, refer to PNEUROP 2001

Connection of the 2/2-way valves:

A: Piston vibrator, filter aid valve

P: Compressed air supply

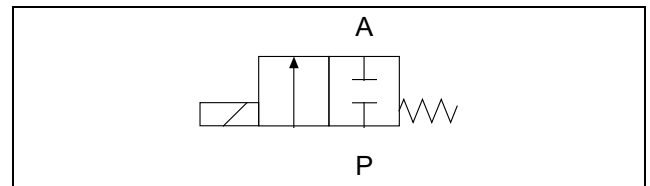




Fig. 6: Pneumatic connections of the 2/2-way valves



- Install a separate air pressure reducer and possibly a filter close to the dosing device.
- Install a suitable compressed air shut-off valve in a readily accessible position (for maintenance work, etc.).

- Connect the dosing hose to the air inlet pipe.
- All connections must be properly secured (e.g. with clamps, clamp rings, flange joints, etc.).
- Check that all connections are tight.
- Supply compressed air (1/2") to the dosing device.

9.4 Electrical connections

 DANGER!	
	Danger of electric shock!
	⇒ Risk of serious or fatal injury in case of contact with electrical components. All electrical installation work must be carried out by a qualified electrician!

9.4.1 Connection of the 2/2-way valves

DC power supply: 24 VDC, 4.5 W
AC power supply (optional): 230 VAC, 16 VA

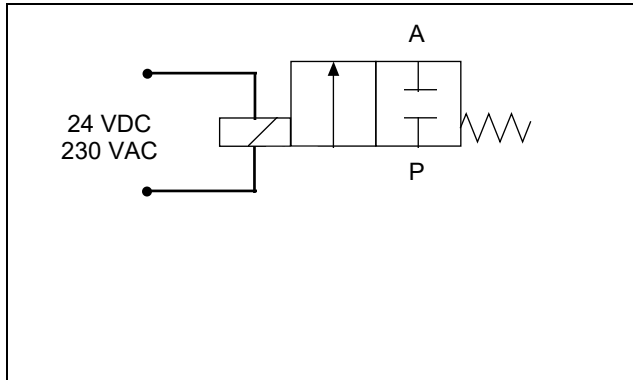


Fig. 7: Electrical connections of the 2/2-way valves

9.4.2 Calibrating the level sensor (optional)


- Refer to the separate instructions.

9.4.3 Dosing device controller (optional)

⇒ The dosing device is controlled by means of an FG controller.

- Refer to the separate instructions.

10 Start-up

 DANGER!
This device must not be put into service until the relevant machinery into which it is to be incorporated has been declared in conformity with the applicable EC directives, harmonised standards, European standards or equivalent national standards.



10.1 Initial start-up or start-up after prolonged shut-down

- Inspect all system components.
- Remove all parts that do not belong (e.g. tools, installation waste, etc.).
- Check the pipe connections (e.g. clamps).
- Tighten all screws and bolts.


10.2 Starting up the dosing device

- Connect the compressed air supply.
- Switch on the controller.
- Check the level in the filter aid tank.

11 Normal operation

 DANGER!	
Danger due to high pressure in the dust collector! ⇒ Risk of injury to persons or damage to property. Shut off the compressed air and vent the system prior to working on devices with an air injector loosening system!	
	Always dispose of the concentrate in an environmentally responsible way! Consult the responsible authorities before deciding upon the most suitable disposal method.

The dosing device works largely automatically during normal operation.

	<ul style="list-style-type: none">• Check the dosing device in accordance with the inspection and maintenance schedule (refer to section 14.1).
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Topping up the filter aid



- Wear protective clothing and equipment appropriate to the hazard potential of the medium (e.g. eye protection, respirator, protective clothing, etc.).
- Shut off the compressed air and vent the system prior to working on devices with an air injector loosening system!

12 Shutting down the dust collector

12.1 Temporary shut-down

- Switch off the fan or shut down the dusty system.
- Switch off the dosing device controller.
- Switch off the compressed air supply.

12.2 Prolonged shut-down (> 48 h)

- Empty the filter aid tank.
- Blow the injector nozzle clean several times (either manually or by means of the controller).
- Switch off the fan or shut down the dusty system.
- Switch off the dosing device controller.
- Switch off the compressed air supply.
- Disconnect any electrical connections.
- Carry out the maintenance work.

12.3 Emergency shut-down

- Activate the EMERGENCY STOP device (e.g. mushroom button, to be provided by the customer).

12.4 Transporting the dosing device

- Shut down the dosing device as described in section 12.2.
- Disconnect the compressed air supply.
- Disconnect the electrical connections.
- Transport the dosing device as described in section 8.

13 Troubleshooting

Fault	Possible cause	Remedy
No filter aid supplied	Tank empty	Top up the filter aid (refer to section 11)
	Not enough compressed air	Check the air pressure (6 bar)
Filter elements clogged	Injector clogged	Blow out the injector
	Dosing rate too low	Select a shorter interval time
		Select a longer pulse time

- For all other faults, please contact FG Customer Service.

14 Maintenance

⚠ WARNING!
If the system is maintained by unauthorised persons:
⇒ Risk of injury.
⇒ All warranty claims are rendered invalid.
All maintenance work must be carried out by a suitably trained person!

Before all maintenance work:


- Shut down the dust collector / system / dosing device.
- Switch off the compressed air supply.
- Take steps to prevent the machine / system from being switched on again by unauthorised persons.



- Wear protective clothing and equipment appropriate to the hazard potential of the medium (e.g. eye protection, respirator, protective clothing, etc.).
- Carry out the maintenance work.
- Start up the dust collector / system / dosing device again.
- Observe the dust collector / system / dosing device.
- Does it operate normally?

14.1 Inspection and maintenance schedule

- See also contract documentation.

Interval	Component	Activity
Daily	Storage tank	Check the level
Weekly	Dosing device	Visual inspection
	Compressed air maintenance unit	Visual inspection Empty the water separator
	Tank	Visual inspection, top up if necessary ¹
Monthly	Connections	Tighten
Yearly (or whenever necessary)	Compressed air connections	Check
	Air breather	Replace the filter element
Regularly	Filter mat in cover	Clean
		The necessary inspection and maintenance work is dependent on the particular application. Please consult the manufacturer if necessary.

¹ Check more often with short cleaning cycles.

15 Appendix: Dosing device parameters

[illegible]

16 Declaration of incorporation

As defined by the EC Machinery Directive

EU – Einbauerklärung
EU Declaration of incorporation
Déclaration relative au montage UE



Der Hersteller
The manufacturer
Le producteur

Filtration Group GmbH
Schleifbachweg 45
74613 Öhringen
Telefon 07941 6466-0
Telefax 07941 6466-429

erklärt hiermit, dass das folgende Produkt
hereby declares that the following product
déclare par la présente que le produit suivant

Produktbezeichnung:
Product designation:
Désignation du produit :
Funktionsbeschreibung:
Machine description:
Description du fonctionnement :

Dosiergerät Z
Dosage equipment Z
Système de dosage Z
Dosierung von Feststoffen
dosage of solids
dosage de solides

den in der Anlage dargestellten grundlegenden Anforderungen der Richtlinie 2006/42/EU entspricht.
conforms to the essential requirements of the Machinery Directive 2006/42/EU pursuant to the Annex.
répond aux exigences fondamentales de la directive 2006/42/UE, décrites en annexe.

Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn festgestellt wurde, dass die Maschine, in die die unvollständige Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EU über Maschinen entspricht.
The partly completed machinery must not be put into service until the relevant machinery into which this partly completed machinery is to be incorporated has been declared in conformity with the Machinery Directive 2006/42/EU.
La machine incomplète ne doit être mise en service qu'après avoir déterminé que la machine, dans laquelle la machine incomplète doit être montée, correspond aux dispositions de la directive machines 2006/42/UE.

Folgende harmonisierten Normen wurden angewandt:

DIN EN ISO 12100:2011-03, DIN EN ISO 4414:2011-04

The following harmonised standards have been used:
Les normes harmonisées ci-dessous ont été appliquées :

Der Hersteller verpflichtet sich, die speziellen Unterlagen zur unvollständigen Maschine, einzelstaatlichen Stellen auf Verlangen schriftlich zu übermitteln. Die zur Maschine gehörenden speziellen technischen Unterlagen nach Anhang VII Teil B wurden erstellt.
The manufacturer undertakes to transmit any specific documentation on the partly completed machinery to the appropriate national authorities in writing on request. All specific technical documentation belonging to the machinery has been compiled pursuant to Annex VII Section B.
Le fabricant s'engage à transmettre les documents spécifiques à la machine incomplète par écrit aux administrations nationales respectives sur leur demande. Les documents techniques spécifiques selon Annexe VII partie B faisant partie de la machine ont été établis.

Dokumentationsverantwortlicher/Abteilung:
Responsible for documentation/department:
Responsable de la documentation/Service :

Filtration Group GmbH
Schleifbachweg 45
74613 Öhringen

Unterzeichner:
Signatory:
Signataire :

Wolfram Zuck
Dipl.-Ing. (FH) Industrial Engineering
Managing Director, Plant Manager Öhringen

Öhringen,

Datum/Date/Date

Unterschrift/Signature/Signature

Anlage/Annex/Annexe

3 Seiten/pages/pages

Anlage zur Einbauerklärung gemäß Richtlinie
2006/42/EU für Entstaubungsgeräte
Annex to the Declaration of Incorporation pursuant to
the Machinery Directive 2006/42/EU for dust collectors
Annexe à la déclaration de montage selon la directive
2006/42/UE pour les dépoussiéreurs
Beschreibung der grundlegenden Sicherheits- und Gesundheits-
schutzanforderungen (soweit zutreffend) gemäß 2006/42/EU, An-
hang 1, die zur Anwendung kommen und eingehalten wurden.
List of the essential health and safety requirements (where applicable)
pursuant to 2006/42/EU, Annex 1, applied and fulfilled.
Description des exigences fondamentales relatives à la sécurité et à
la protection de la santé (si applicables) selon 2006/42/UE, annexe 1,
appliquées et respectées.



Grundlegende Anforderung Essential requirements Exigence fondamentale	Erfüllt Fulfilled Remplie
Grundsätze für die Integration der Sicherheit Principles of safety integration Principes d'intégration de la sécurité	ja yes oui
Materialien und Produkte Materials and products Matériaux et produits	ja yes oui
Konstruktion der Maschine im Hinblick auf die Handhabung Design of machinery to facilitate its handling Construction de la machine au regard de sa manipulation	ja yes oui
Steuerungen und Befehlseinrichtungen Control systems Commandes et dispositifs de commande	nein no non
Risiko des Verlusts der Standsicherheit Risk of loss of stability Risque de perte de la stabilité statique	ja yes oui
Bruchrisiko beim Betrieb Risk of break-up during operation Risque de rupture en fonctionnement	ja yes oui
Risiken durch herabfallende oder herausgeschleuderte Gegenstände Risks due to falling or ejected objects Risques dus à la chute ou à l'éjection d'objets	ja yes oui
Risiken durch Oberflächen, Kanten und Ecken Risks due to surfaces, edges or angles Risques dus aux surfaces, arêtes et angles	ja yes oui
Risiken durch Änderung der Verwendungsbedingungen Risks related to variations in operating conditions Risques dus à la modification des conditions d'utilisation	ja yes oui
Risiken durch bewegliche Teile Risks related to moving parts Risques dus à des parties mobiles	ja yes oui
Wahl der Schutzeinrichtung gegen Risiken durch bewegliche Teile Choice of protection against risks arising from moving parts Choix du dispositif de protection contre les risques dus à des parties mobiles	ja yes oui
Risiko unkontrollierter Bewegungen Risks of uncontrolled movements Risque de mouvements incontrôlés	ja yes oui
Anforderungen an Schutzeinrichtungen Required characteristics of guards and protective devices Exigences relatives aux dispositifs de protection	nein no non
Elektrische Energieversorgung Electricity supply Alimentation électrique	ja yes oui
Statische Elektrizität Static electricity Electricité statique	ja yes oui

Nichtelektrische Energieversorgung Energy supply other than electricity Alimentation en énergie non-électrique	ja yes oui
Montagefehler Errors of fitting Erreurs de montage	ja yes oui
Extreme Temperaturen Extreme temperatures Températures extrêmes	ja yes oui
Brand Fire Incendie	ja yes oui
Explosion Explosion Explosion	ja yes oui
Lärm Noise Bruit	ja yes oui
Vibrationen Vibrations Vibrations	ja yes oui
Strahlung Radiation Rayonnement	ja yes oui
Strahlung von außen External radiation Rayonnement depuis l'extérieur	ja yes oui
Emission gefährlicher Werkstoffe und Substanzen Emissions of hazardous materials and substances Emission de substances et matériaux dangereux	ja yes oui
Risiko, in eine Maschine eingeschlossen zu werden Risk of being trapped in a machine Risque de se faire enfermer dans une machine	nein no non
Ausrutsch-, Stolper- und Sturzrisiko Risk of slipping, tripping or falling Risque de dérapage, de trébuchement et de chute	nein no non
Blitzschlag Lightning Foudre	nein no non
Wartung der Maschine Machinery maintenance Entretien de la machine	nein no non
Zugang zu den Bedienungsständen und den Eingriffspunkten für die Instandhaltung Access to operating positions and servicing points Accès aux postes de commande et aux points d'intervention pour la maintenance	nein no non
Trennung von den Energiequellen Isolation of energy sources Séparation des sources d'énergie	nein no non
Eingriffe des Bedienungspersonals Operator intervention Interventions des opérateurs	ja yes oui
Reinigung innen liegender Maschinenteile Cleaning of internal parts Nettoyage de parties internes de la machine	nein no non
Informationen und Warnhinweise an der Maschine Information and warnings on the machinery Informations et avertissements sur la machine	ja yes oui
Warnung vor Restrisiken Warning of residual risks Avertissement quant aux risques résiduels	ja yes oui
Kennzeichnung der Maschinen Marking of machinery Marquage des machines	nein no non

Betriebsanleitung Instructions Mode d'emploi	ja yes oui
Nahrungsmittelmaschinen und Maschinen für kosmetische oder pharmazeutische Erzeugnisse Foodstuffs machinery and machinery for cosmetics or pharmaceutical products Machines pour denrées alimentaires et machines pour produits cosmétiques ou pharmaceutiques	nein no non
Handgehaltene und/oder handgeführte tragbare Maschinen Portable hand-held and/or hand-guided machinery Machines tenues à la main et/ou portables guidées à la main	ja yes oui

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