These operating instructions apply to:

Maintenance Unit	**series NWE**
Filter Regulator Unit	**series NFR**
Lubricator Unit	**series NOE**

NWE 1/4" and 1/2"

NWE 1"

NFR

NOE

Contents

Scope of delivery

Please refer to the delivery note for the scope of delivery.
Check the packaging for possible transport damage. In the event of damage to the packaging, check the contents for completeness and possible damage. Inform the carrier in the case of damage.

Designation

The maintenance units NWE/NFR/NOE are hereafter referred to as "maintenance units".

Version of document

Document no.	2123E
Version no.	1
Date of issue	Feb. 2023

1 General information

Use and storage

Before installing the maintenance units read these instructions carefully. It is the basis for any action when dealing with the maintenance units, and may be used for training purposes. The instructions should be subsequently stored at the operation site.

Target group

The target group for these instructions is technical staff, who have basic knowledge in pneumatics and mechanics.

Only complying technical staff may work on the maintenance units.

The maintenance units may only be installed, put into operation, maintained, troubleshot and disassembled by persons authorised by the operator.

Copyright

Limitation of liability

All technical information, data and instructions for installation, operation and maintenance in these instructions are based on the latest information available at the time of printing and take our past experience to the best of our knowledge into account.

No claims can be derived from the information, illustrations and descriptions in these operating instructions.

The manufacturer does not assume liability for damages resulting from:

- failure to observe the instructions,
- improper use,
- unauthorised repairs,
- technical modifications,
- use of non-permissible spare parts.

Translations are made to the best of our knowledge.

Netter*Vibration* does not assume liability for translation errors, even if the translation was made by us or on our behalf. Only the original German text remains binding.

Directives observed

The observed directives can be found in the manufacturer's declaration in the appendix.

Manufacturer declaration

The maintenance units are built exclusively for ***Netter****Vibration* by: Knocks Fluid-Technik GmbH, Otto-Hahn Straße 4, DE 59379 Selm-Bork.

Observe the information in the manufacturer's declaration in the appendix.

For use in potentially explosive atmospheres, also observe the "Statement for an apparatus not containing an own potential ignition source" in the aapendix.

Instruction and warning symbols

The following instruction and warning symbols are used in these instructions:

Personal injuries

⚠ WARNING	
	indicates a potential danger. Disregard of this notice can result in death or severe personal injuries.

⚠ CAUTION	
	indicates a potentially dangerous situation. Disregard of this notice can result in minor or moderate personal injuries.

Material damages

NOTICE
indicates potential material damage. Disregard of this notice can result in material damage.

Notes

IMPORTANT
indicates actions, methods or notes that are not relative to safety, e.g. useful information and tips.

	**Environmentally safe disposal** indicates the obligation of environmentally safe disposal.

2 Safety

Intended use

The maintenance units are intended for maintenance of compressed air systems in the industrial field. They may be operated in dusty and wet environments.

Any other use is considered improper.

Qualification of qualified personnel

Installation, commissioning, maintenance and troubleshooting of the maintenance units may only be performed by authorised qualified personnel, who have basic knowledge in pneumatics and mechanics.

All handling of the maintenance units is the responsibility of the operator.

Compressed air

⚠ WARNING

Compressed air

A loosened hose which is under pressure can lead to personal injuries. Opening the maintenance unit under pressure can result in damage to the maintenance unit and serious injury.

- ➢ Screw the hose lines on carefully.
- ➢ Check the hose lines and connections after one hour of operation and thereafter regularly (generally monthly).
- ➢ Retighten the hose lines, if necessary.
- ➢ Ensure that the compressed air is disconnected from the supply lines during all work on the maintenance units.
- ➢ Prevent the maintenance units from being switched back on during all work.

Oil mist

⚠ WARNING

Damage to health due to oil mist

Oil mist is generated in the lubricator unit. Escaping oil mist can be harmful to health.

- ➢ The operator must ensure that people do not come into contact with or breathe in escaping oil mist.
- ➢ Suitable measures, such as the discharge of the oil-containing exhaust air or the installation of a suitable suction system, must be implemented.
- ➢ The operator must warn of the dangers of escaping oil mist.

Cleaning agents

NOTICE

Solvents and aggressive cleaning agents damage the maintenance units.

For cleaning, use only a slightly damp cloth with water and, if necessary, a mild cleaning agent without chemical additives.

3 Technical data

Permissible operating conditions

Parameter	Description
Operating medium	Compressed air
Operating pressure	0,5 bar to 10 bar
Inlet pressure	Max. 10 bar
Permissible ambient temperature	-10° C to +50° C

Technical data NWE

Type	Nominal size/ Connection thread (P)	Pressure range [bar]	Max. inlet pressure [bar]	Flow rate [l/min]	Weight [kg]	Filter [µm]
NWE 1/4	G 1/4	0,5 - 10	10	1,750	1.20	5
NWE 1/2	G 1/2			3,500	2.00	
NWE 1	G 1			10,500	4.55	

All NWE with mounting bracket.

Technical data NFR

Type	Nominal size/ Connection thread (P)	Pressure range [bar]	Max. inlet pressure [bar]	Flow rate [l/min]	Weight [kg]	Filter [µm]
NFR 1/4	G 1/4	0,5 - 10	10	1,750	0.90	5
NFR 1/2	G 1/2			3,500	1.47	
NFR 1	G 1			11,000	2.53	

All NFR with mounting bracket.

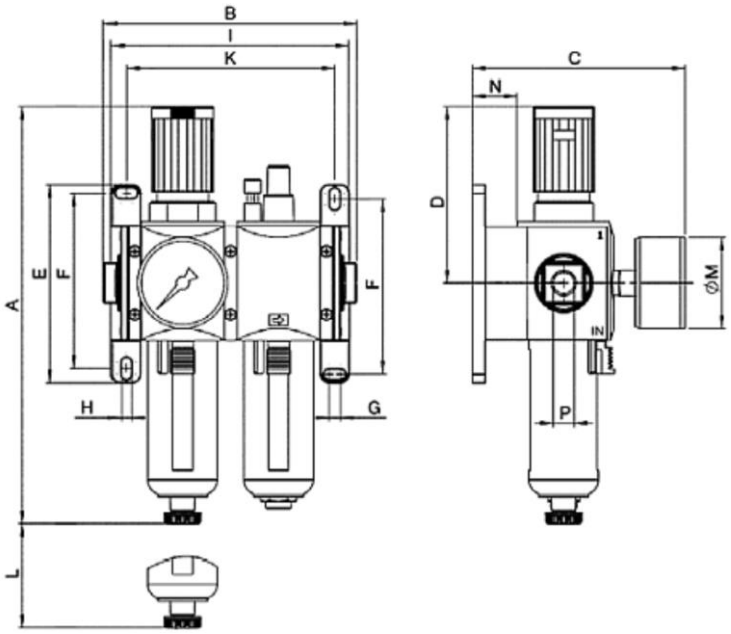
Technical data NOE

Type	Nominal size/ Connection thread (P)	Pressure range [bar]	Max. inlet pressure [bar]	Flow rate [l/min]	Weight [kg]
NOE 1/4	G 1/4	0,5 - 10	10	1,750	0.72
NOE 1/2	G 1/2			3,500	1.20
NOE 1	G 1			18,000	2.03

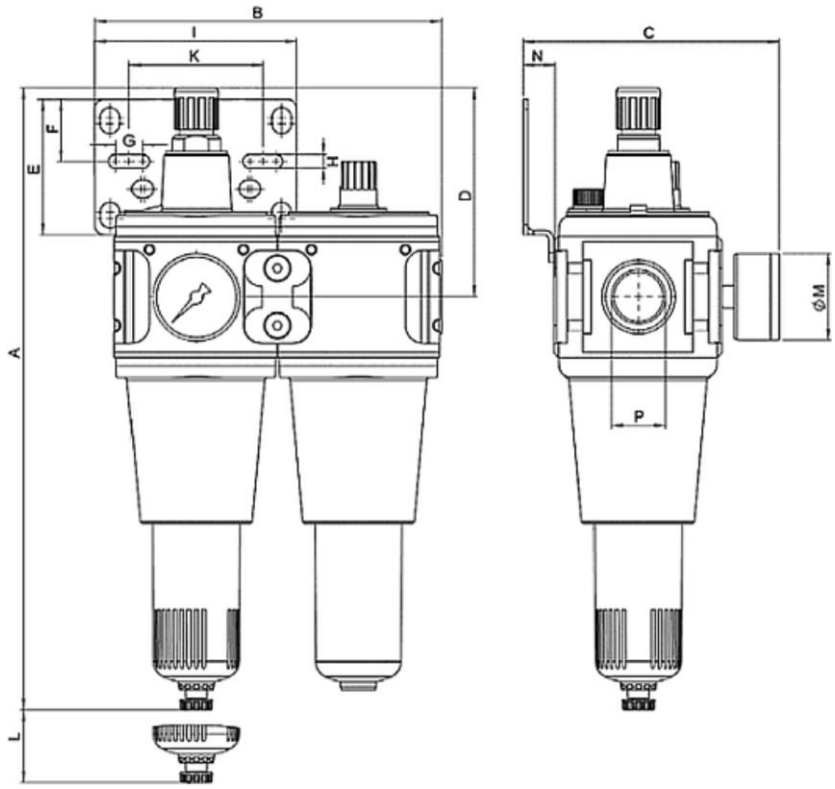
All NOE with mounting bracket.

Dimensions NWE [mm]

Type	A	B	C	D	E	F	G	H	I	K	L	M	N
NWE 1/4	226	137	114	96	108	95,4	6,4	5,4	128	113,0	50	49	24
NWE 1/2	257	163	144	110	120	104,0	8,0	6,4	155	136,5	36	49	41
NWE 1	382	214	164	128	83	38,0	16,0	8,4	124	82,0	20	62	19



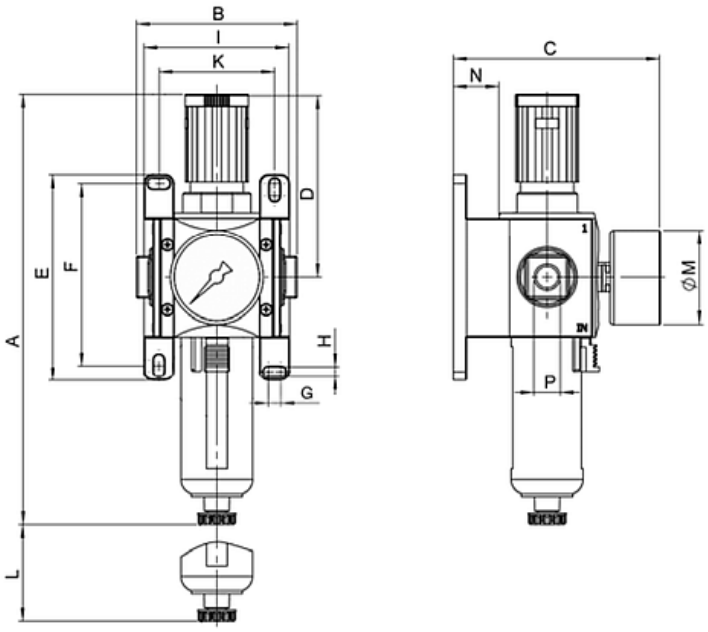
NWE 1/4 and
NWE 1/2



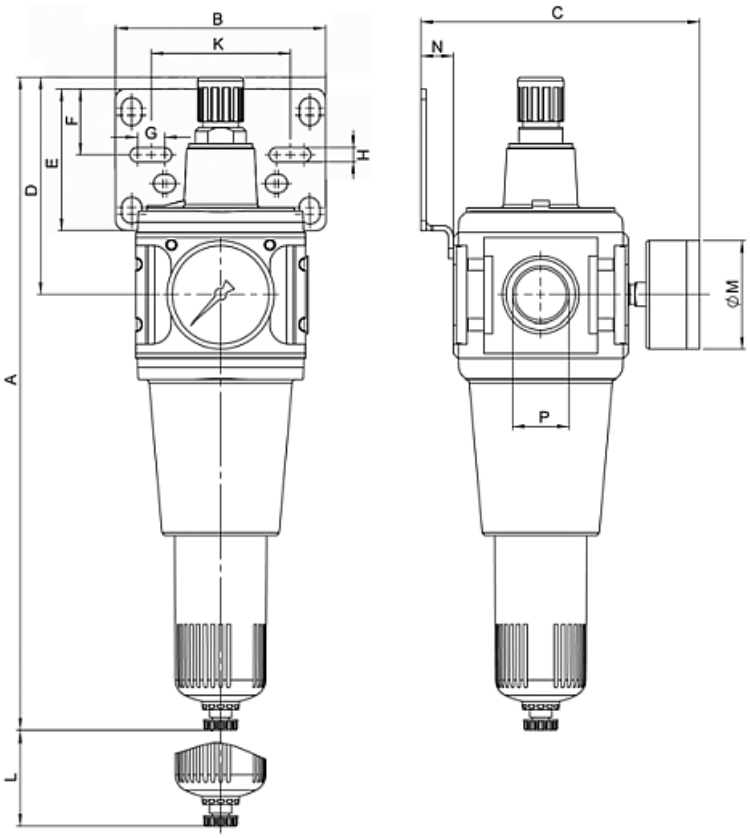
NWE 1

Dimensions NFR [mm]

Type	A	B	C	D	E	F	G	H	I	K	L	M	N
NFR 1/4	226	85	114	96	108	95,4	6,4	5,4	76	61	50	49	24
NFR 1/2	257	100	144	110	120	104,0	8,0	6,4	92	69	36	49	41
NFR 1	382	124	164	128	83	38,0	16,0	8,4	124	82	20	62	19



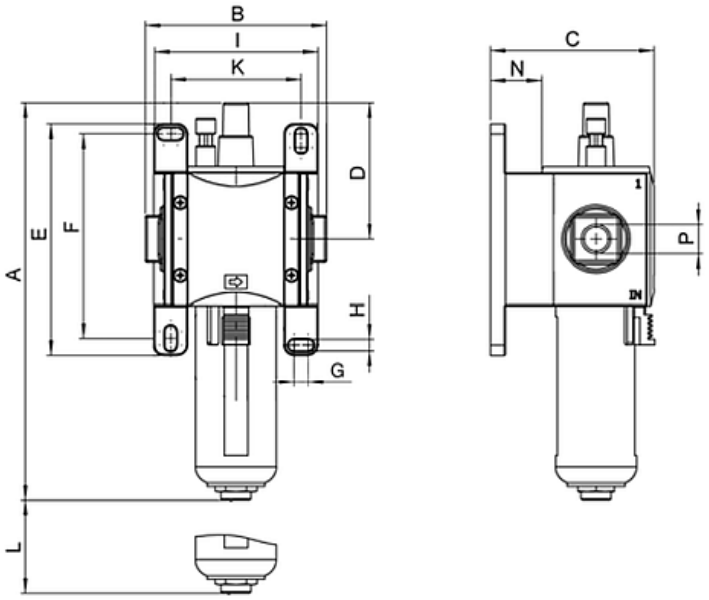
NFR 1/4 and NFR 1/2



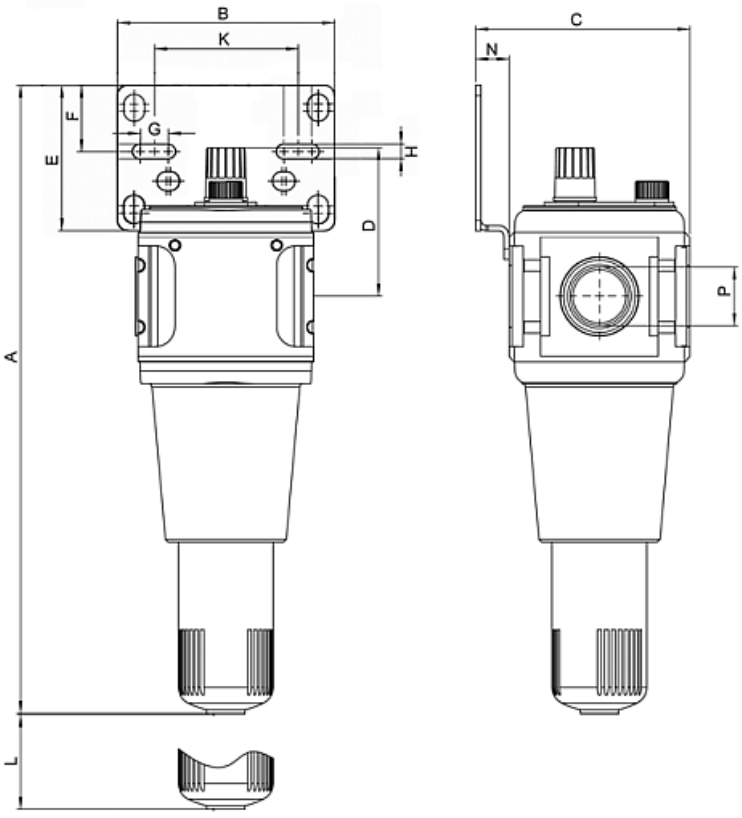
NFR 1

Dimensions NOE [mm]

Type	A	B	C	D	E	F	G	H	I	K	L	M	N
NOE 1/4	186	85	76	64	108	95,4	6,4	5,4	76	61	80	--	24
NOE 1/2	210	100	106	70	120	104,0	8,0	6,4	92	69	90	--	41
NOE 1	375	124	122	85	83	38,0	16,0	8,4	124	82	30	--	19



NOE 1/4 and NOE 1/2

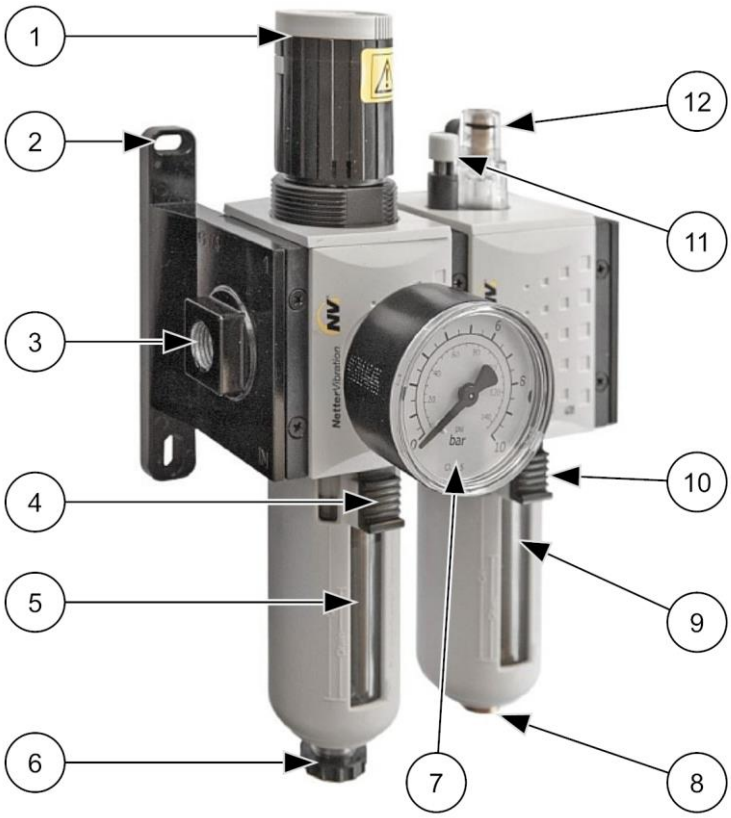


NOE 1

4 Design and function

Design

Figure NWE 1/4" / 1/2"



1	Pressure regulator on the filter regulator unit	7	Pressure gauge
2	Mounting bracket	8	Oil reservoir nozzle
3	Compressed air inlet	9	Oil reservoir with sight glass and level marking
4	Release for condensate reservoir	10	Release for oil reservoir
5	Condensate reservoir with sight glass	11	Oil filling button
6	Condensate drain screw	12	Dosing screw

Function

The maintenance units NWE are used for the preparation of compressed air. They consist of the filter regulator unit NFR and the lubricator unit NOE.

The incoming compressed air is filtered and condensate is separated. The filter control valve regulates the supplied compressed air to the operating pressure set on the pressure regulator and compensates any pressure fluctuations.

The lubricator unit adds an oil mist to the filtered compressed air to lubricate the pneumatic vibrators supplied with it. The oil quantity can be adjusted with the dosing screw.

5 Transport and storage

Transport conditions

Special conditions of transport are not required.

Packaging

The maintenance units are packed and ready for assembly. Accessories and add-on parts are delivered unmounted, unless otherwise agreed upon.

The packaging protects the maintenance units from transport damage. The packaging material has been selected from an environmentally safe and technically disposable point of view and is therefore recyclable.

The return of packaging to the material cycle conserves raw materials and reduces the amount of waste.

Storage conditions

- Store the maintenance units in a dry and clean environment.
- Protect the maintenance units from UV-exposures, weather and ozone.
- The storage temperature is between -10 °C and +60 °C.
- Close all openings before storing.

6 Installation

Observe the safety instructions in chap. Safety, starting on page 5.

Please note the information in chap. Technical data, from page 6 onwards.

Fastening of the maintenance unit

Use shut-off valves to depressurise the maintenance units before installation and maintenance (e.g. filter change).

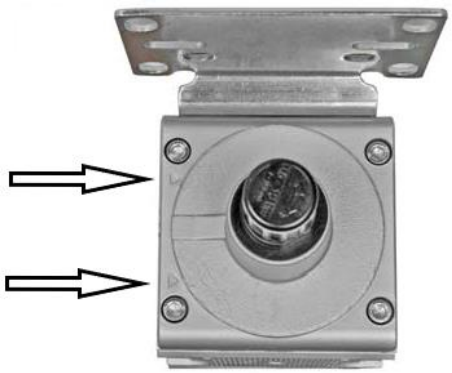
Flow direction 1/4" and 1/2"

The flow direction can be read from the "IN" and "OUT" indications on the side panels and wall brackets.
Arrows on the front and back indicate the flow direction.

side view back front wall bracket

Flow direction 1"

On the top, arrows indicate the flow direction.



Ensure that there is enough space underneath the maintenance units (at least 130 mm) to change the filter.

Adjust the maintenance units vertically (± 5°).

Installation into a pipeline

Turn the pipelines into the connecting flanges. The threads must be sealed.

Installation of a pressure gauge

Turn the pressure gauge into the existing connection thread until the pressure gauge seal is completely screwed in.

Checklist installation

Check that the following steps have been carried out:

- Compliance with permissible operating conditions ensured? ☐
- Correct flow direction observed? ☐
- maintenance units correctly and safely mounted? ☐
- Observe vertical installation position? ☐
- All hose connections correctly and securely mounted? ☐

7 Start-up and operation

Observe the safety instructions in chap. Safety, from page 5 on.

Permissible operating conditions

Please refer to chap. Technical data, page 6 for permissible operating conditions.

Set Filter Regulator Unit

After installation, set the filter regulator unit as follows:

1. Pull the adjustment cap on the pressure regulator upwards (away from the housing) to unlock it.
2. Twist the adjustment cap until the desired pressure is displayed on the pressure gauge.
3. Press the adjustment cap down (towards the housing) to secure the cap against unintentional twisting.

Lock pressure regulator:

1. Turn the handwheel on the adjustment cap to the left (anticlockwise), which causes two securing lugs to extend.
2. Hang a suitable lock on these lugs to secure the pressure regulator against unauthorised adjustment.

Fill and adjust lubricator unit

1. Depressurise the lubricator unit.
2. Slide the release downwards.
3. Turn the oil reservoir out anticlockwise.
4. Fill specified oil into the oil reservoir up to the marking.
5. Turn the oil container clockwise into the lubricator unit, until it audibly snaps into place.
6. Check that all hose connections are correctly and securely fitted.
7. Open the pressure shut-off valve. The maintenance unit is under pressure.
8. Set the smallest safely adjustable number of drops on the dosing screw (reference value 1 - 2 drops/min), while flowing through the lubricator unit. The lubricator unit is not ready for operation until it has been adjusted and is functioning properly.

Fill lubricator unit automatically

For automatic filling, the lubricator unit must be under pressure.

1. Connect a suitable oil hose to the oil reservoir nozzle.
2. Immerse the oil hose in specified oil.
3. Press the oil filling button to fill the oil reservoir with oil up to the marking.

Checklist start-up

Check that the following steps have been carried out:

- All hose connections correctly and securely mounted? ☐
- Pressure regulator set? ☐
- Oil reservoir filled with oil up to the marking? ☐
- Correct oil quantity set with dosing screw? ☐

8 Maintenance and servicing

Observe the safety instructions in chap. Safety, starting on page 5.

Maintenance operations

The maintenance intervals depend on the respective operating conditions and the purity of the operating medium.
Carry out the following maintenance operations at regular intervals:

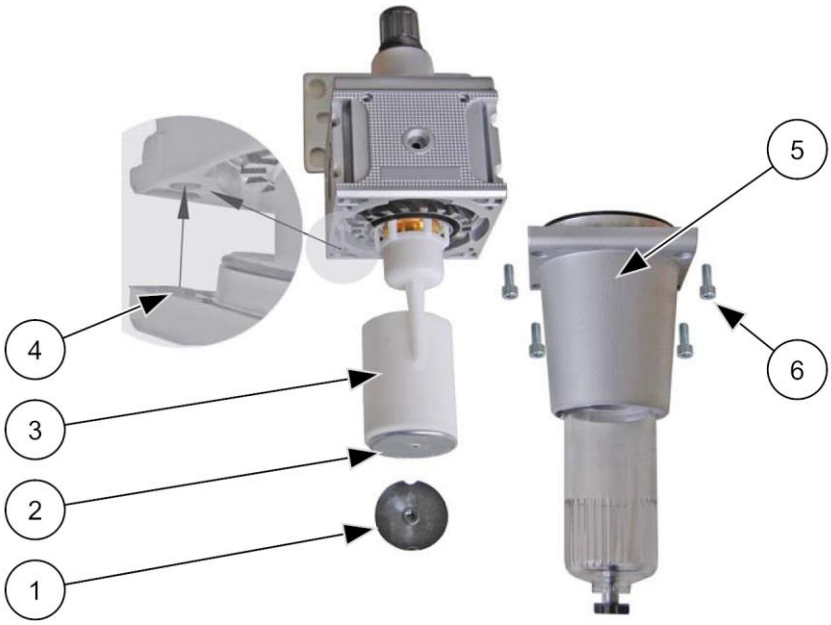
- Check the level of the condensate reservoir.
  Drain condensate if necessary.
- Change filter cartridge.
- Check the oil level. Top up oil if necessary.
- Clean the maintenance unit if necessary.

Check/drain condensate

1. Check the condensate level at the sight glass. When the upper mark (below the filter element) is reached, drain condensate as follows.
2. Place a drip tray under the condensate drain screw.
3. Open the condensate drain screw counterclockwise (as seen from below).
4. Drain the condensate completely.
5. Close the condensate drain screw clockwise (as seen from below).

Change filter cartridge

Figure NFR 1"



1	Filter end piece	4	Mounting position
2	Filter seat	5	Bottom part
3	Filter cartridge	6	Hexagon socket screws

Change filter cartridge 1/4" and 1/2":

1. Depressurise the maintenance unit.
2. Slide the release of the condensate reservoir downwards.
3. Turn the reservoir out counterclockwise.
4. Twist off the filter end piece.
5. Remove the filter cartridge and the filter seat.
6. Insert the new filter cartridge with filter seat.
7. Screw in the filter end piece.
8. Turn the reservoir in clockwise until it audibly clicks into place.

Change filter cartridge 1":

1. Depressurise the maintenance unit.
2. Loosen the hexagon socket screws
3. Remove the screws and the bottom part.
4. Twist off the filter end piece.
5. Remove the filter cartridge and the filter seat.
6. Insert the new filter cartridge with filter seat.
7. Screw in the filter end piece.
8. Mount the bottom part with the hexagon socket screws. Note the correct mounting position.

Check oil level and top up oil

Regularly check the oil level at the sight glass with level marking.
If necessary, top up with oil according to section "Fill and adjust lubricator unit", page 14.

Cleaning

Clean the maintenance units if necessary. For cleaning, use only a slightly damp cloth with water and, if necessary, a mild cleaning agent without chemical additives.
Solvents and aggressive cleaning agents damage the maintenance units.

9 Troubleshooting

Repairs in ATEX areas

Any repairs to maintenance units operated in areas with potentially explosive atmospheres (ATEX areas) are to be carried out exclusively by ***Netter****Vibration*.

Malfunctions and causes

In the case of malfunctions of the maintenance units proceed as follows:

Disturbance	Possible cause	Corrective action
No pressure indication	Shut-off valve closed	Open shut-off valve.
	Pressure not adjusted	Adjust the pressure on the pressure regulator.
	No compressed air supply	Check and ensure the customer's compressed air supply.
	Pressure gauge defective	Replace pressure gauge.
Low flow rate (when air is consumed, the operating pressure collapses)	Filter cartridge soiled	Replace filter cartridge.
Pressure increases above the set operating pressure	Valve disc defective at the sealing seat in the housing	Send the defective component, with a description of the fault and the operating conditions, to ***Netter****Vibration*.
Audible blow-off at the pressure regulator	Valve seat damaged	
Audible blow-off at the condensate drain screw	Drain screw leaking	Tighten or renew the drain screw.

10 Spare parts and accessories

Ordering of spare parts

Please provide the following details when ordering spare parts:

- type of maintenance units
- description and position of spare part
- required amount

11 Disposal

Prices

All parts of the maintenance units must be properly disposed of according to the material specifications. The valid disposal prices of the maintenance units are available on request.

Material specifications

All parts of the maintenance units can be recycled. The maintenance units consist of plastic and metal components.

The exact material specifications can be requested from the manufacturer.

12 Annex

Manufacturer Declaration

KNOCKS FLUID-TECHNIK

DEUTSCH

Hersteller-Erklärung

der EG - im Sinne der EG-Richtlinien

Richtlinie 2014/68/EU des europäischen Parlaments und des Rates zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Druckgeräte.

Knocks FLUID-Technik GmbH
Otto-Hahn-Straße 4
D - 59379 Selm

Die o.g. Firma ist Hersteller von Druckluftaufbereitungsgeräten. Darunter fallen Filter, Regler, Öler und Bauteile zu deren Systemerweiterung. Die o.g. Firma erklärt hiermit, daß alle Produkte aus dem Lieferprogramm, wenn sie wie geliefert verwendet werden, zum Einbau in eine Maschine oder Anlage bestimmt sind.

Die Inbetriebnahme dieser Druckgeräte ist erst dann erlaubt, wenn festgestellt wurde, dass die Anlage/Maschine, in die es eingebaut werden soll, den Bestimmungen der EG-Richtlinie Maschinen, den harmonisierten Normen, Europanormen oder den entsprechenden nationalen Normen entspricht.

ENGLISH

Manufacturer Declaration

of the EC – in accordance with the EC Directives

Directive 2014/68/EU of the European Parliament and the Council on the Harmonisation of Regulations on the Approximation of the Laws of the Member States Concerning Pressure Equipment.

Knocks FLUID-Technik GmbH
Otto-Hahn-Straße 4
D - 59379 Selm

The aforementioned company is a manufacturer of pressure conditioning equipment. This includes filters, controllers, lubricators and components for their system expansion. The aforementioned company hereby declares that all products in its product range, if they are used as delivered, are intended for installation in a machine or system.

The commissioning of this pressure equipment is permitted only once it has been determined that the system/machine into which it is to be installed complies with the provisions of the EC Machine Directive, the harmonised standards, the European standards or the corresponding national standards.

Selm, 21. September 2016

Heinz Knocks
Geschäftsführer
CEO

Martin Statkewitz
Geschäftsführer
CEO

Declaration for equipment without own potential ignition source (2014/34/EU)

KNOCKS FLUID-TECHNIK

Erklärung für Betriebsmittel ohne eigene potentielle Zündquelle in Anlehnung an die Richtlinie 2014/34/EU

Statement for an apparatus not containing an own potential source following Directive 2014/34/EU

TFR 07 HEK_BopZ 0015 Ed.3 **Seite 1 von 3**

Hiermit erklärt die / *hereby declares*

Knocks Fluid-Technik GmbH, Otto-Hahn Strasse 4, DE 59379 Selm-Bork

in alleiniger Verantwortung, dass die Ergebnisse, der an den folgenden mechanischem Betriebsmitteln vorgenommenen Prüfungen, die Anforderungen der Richtlinie 2014/34/EU erfüllen.

that the results of the examinations with the mechanical equipment described below comply with the requirements of Directive 2014/34/EU.

Pneumatische Betriebsmittel der Serie Futura (siehe auch Seite 3), Identifikations-Nummer siehe Lieferunterlagen,

sind gemäß Richtlinie 2014/34/EU, Artikel 1
a) keine Geräte,
b) keine Schutzsysteme,
c) keine Sicherheits-, Kontroll- oder Regeleinrichtungen,
d) keine Komponenten.

Pneumatic apparatus of the series Futura (see also at page 3), Identification number see shipping documents,

are according to Directive 2014/34/EU, article 1
a) not an equipment,
b) not a protective system
c) not a safety device, controlling device or regulating device
d) not a component.

Die mechanischen Betriebsmittel haben bei bestimmungsgemäßem Betrieb keine eigene potentielle Zündquelle und bekommen **keine Kennzeichnung** im Sinne der ATEX-Richtlinie. Eine interne Zündgefahrenbewertung wurde durchgeführt.
Als Medium wird außerhalb des Ex-Bereiches erzeugte und aufbereitete Druckluft oder Inertgas verwendet.

*When used adequately, this mechanical equipment has no inherent potential ignition source and thus it is **not marked** in accordance with the ATEX- Directive. An internal ignition risk analysis was carried out.*
The medium used is compressed air or inert gas that are generated and processed outside the potentially explosive atmosphere.

Die mechanischen Betriebsmittel können, unter Berücksichtigung der geltenden Einrichtungsbestimmungen für Maschinen, Geräte und Anlagen im Ex-Bereich, z.B. EN 1127-1, EN 60079-14 u.a., folgendermaßen eingesetzt werden:
a) In der Zone 1 (Gas-Ex, Kategorie 2G) in den Explosionsgruppen IIA, IIB und IIC
b) In der Zone 2 (Gas-Ex, Kategorie 3G) in den Explosionsgruppen IIA, IIB und IIC
c) In der Zone 21 (Staub-Ex, Kategorie 2D) in den Explosionsgruppen IIIA und IIIB
d) In der Zone 22 (Staub-Ex, Kategorie 3D) in den Explosionsgruppen IIIA und IIIB

The apparatus can be used as follows in explosive atmospheres in accordance with the applicable erection regulations on machines, devices and plants, such as e.g. EN 1127-1, EN 60079-14, etc.:
a) In Zone 1 (gas hazard, category 2G) in the explosion groups IIA, IIB and IIC
b) In Zone 2 (gas hazard, category 3G) in the explosion groups IIA, IIB and IIC
c) In Zone 21 (dust hazard, category 2D) in the explosion groups IIIA und IIIB
d) In Zone 22 (dust hazard, category 3D) in the explosion groups IIIA und IIIB

Mögliche elektrische Betriebsmittel sind ohne Einfluss auf den mechanischen Zündschutz. Sie müssen den Anforderungen der jeweils vor Ort herrschenden Zonen genügen und sind nicht Bestandteil dieser Erklärung

Any electrical apparatus that may be used here do not impair the mechanical explosion protection. Those apparatus have to comply with the locally applicable zones and are not subject of this statement.

Folgende harmonisierte Normen/Spezifikationen sind in der am Unterschriftsdatum aktuellen Fassung angewandt worden:

- EN 1127-1 Explosionsfähige Atmosphären, Explosionsschutz, Teil 1: Grundlagen und Methodik

The following harmonised standards and specifications were referred to in their version applicable on the date of signature:

- *EN 1127-1 Explosive atmospheres, Explosion prevention and protection, Part 1: Basic concepts and methodology*

Wichtige Hinweise:

a) Die vom Hersteller erstellten Einbau- und Bedienungsanleitungen sind zwingend zu beachten.
b) Die im Anwenderland geltenden Errichtungsbestimmungen sind zu beachten.
c) Die mechanischen Komponenten der Futura-Baureihe sind für Umgebungstemperaturen von -10 °C .. 50 °C geeignet.
d) Bei bestimmungsgemäßem Betrieb wird außen eine Erwärmung

Please note:

a) The installation and operating instructions provided by the manufacturer are to be considered compellingly.
b) The installation regulations valid in the designated country of use are to be observed.
c) The Futura series with its mechanical components is suitable for ambient temperatures of -10 °C .. 50 °C.
d) At intended operation the temperature rising outside is < 10 K;

KNOCKS FLUID-TECHNIK

Erklärung für Betriebsmittel ohne eigene potentielle Zündquelle in Anlehnung an die Richtlinie 2014/34/EU

Statement for an apparatus not containing an own potential source following Directive 2014/34/EU

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< 10 K erwartet; die Temperaturklasse T4 wird eingehalten.

e) Zulässige Mediumstemperaturen -10 °C .. 50 °C

f) Die Geräte können elektrostatisch aufgeladen werden. Es sind geeignete Maßnahmen - elektrostatisch erden, „nur feucht reinigen“ und Aufladungsprozesse vermeiden - einzuhalten, um eine Gefährdung auszuschließen. Eine Warnkennzeichnung ist beispielhaft auf verschiedenen Geräten angebracht.

g) Sämtliche außen liegenden Werkstoffe bestehen aus geeigneten funkenarmen Materialien, auch aus Leichtmetall. Der Betreiber ist jedoch für die Überprüfung der Zündgefahr durch Funken beim Betrieb der kompletten Maschine selbst verantwortlich.

h) Es gibt Ausführungen (siehe Anhang Seite 3), bei denen außen liegende Werkstoffe aus Aluminium ausgeführt sind. Diese sind vor externer Schlagenergie zu schützen.

i) Die mechanischen Komponenten der Futura-Baureihe müssen in den Potentialausgleich einbezogen werden.

j) Anschlussleitungen von elektrischen Betriebsmitteln sind geschützt zu verlegen.

k) An Bauteilen dürfen in der Explosionsgruppe IIC und der Zone 1 keine projizierten Oberflächen von Kunststoffen > 20 cm² vorhanden sein; bei IIB oder im Staub dürfen 100 cm² erreicht werden. Die Geräte dürfen nicht dort eingesetzt werden, wo damit zu rechnen ist, dass dort starke elektrostatische Aufladungen (Gleitstielbüschelentladungen) provoziert werden (durch menschliche Aufladung nicht möglich).

l) Wenn isolierende Anschlussschläuche verwendet werden, dann sind Typen mit einem Durchmesser < 20 mm (IIC) oder < 30 mm (IIA, IIB, Staub) zulässig.

m) Ableitungen von Druckluft in den Ex-Bereich dürfen nur diffus erfolgen.

n) Staubablagerungen sind regelmäßig zu entfernen.

o) Bei Undichtigkeit des Gehäuses darf das Betriebsmittel nicht weiter betrieben werden

p) Die Drucklufterzeugung und Aufbereitung muss außerhalb des Ex-Bereiches erfolgen. Es darf nur absolut trockene Druckluft als Medium verwendet werden.

q) Die Verwendung von brennbarem oder explosionsfähigen Medien ist nicht zulässig.

r) Streuströme (z.B. in Anlagen mit elektrischem Korrosionsschutz) dürfen nicht über die Bauteile geführt werden

s) Bei Montagen im Ex-Bereich ist unbedingt die EN 1127-1 Anhang A zu beachten (ggf. funkenarmes Werkzeug benutzen!)

Temperature class T4 is kept.

e) Suitable medium temperature -10°C .. 50 °C

f) The apparatus is electrostatically chargeable. Thus appropriate measures have to be taken – grounded electrostatically, “only cleaning with a damp cloth” and avoiding charging processes – that will prevent hazards. Warning signs are fixed exemplary on the outside of some apparatus.

g) All exterior materials consist of suitable low-sparking components also alloy. The operator himself, however, is responsible for checking the risk of ignition caused by sparks during the operation of the complete machine.

h) There are variants of the apparatus (see Appendix, page 3) where the exterior materials are made of aluminium. These parts have to be protected against external impact energy.

i) The mechanical components of the Futura series have to be integrated in the equipotential bonding.

j) Connecting cables of electrical apparatus have to be installed in a protected manner.

k) At apparatus in explosion group IIC and in Zone 1 no projected surfaces of plastics are permitted that exceed 20 cm²; in IIB or dust hazardous atmospheres 100 cm² may be reached. The products should not be used where strong electrostatic charges are present which provokes propagating brush discharges (by human charging it is not possible).

l) If insulated connection hoses are used, only types with a diameter < 20 mm (IIC) or < 30 mm (IIA, IIB, Dust) may be used.

m) Discharge of compressed air into the Ex atmosphere may only be done by diffusion.

n) Dust deposits are to be removed regularly.

o) If the enclosure shows signs of leakage, the apparatus may be not operated further.

p) The compressed air production and service must be produced outside of the hazardous area. It may only absolutely dry air be used as a medium.

q) The use of any flammable or explosive flow medium is not permitted.

r) Leakage currents (e.g. in plants with electrical anti-corrosion protection) may not be led over the parts.

s) When mounting the apparatus inside an explosive area, Annex A of standard EN 1127-1 has to be adhered to (if necessary, low-sparking tools have to be used).

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Unterzeichnet für und im Namen der Knocks GmbH

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Signed for and on behalf of Knocks GmbH