

Instructions for Use

In accordance with Machinery Directive 2006/42/EG



Metering Valve PEN AXDV-C*-PEN

AXDV-C1-PEN	1 – 20 mm³
AXDV-C2-PEN	10 – 200 mm³



ABNOX AG
Langackerstrasse 25
CH-6330 Cham
Switzerland

Tel. +41 (0) 41 780 44 55
Fax +41 (0) 41 780 44 50

E-Mail info@abnox.com
Internet www.abnox.com

© Publisher's copyright

This document may not be reproduced, translated or made available to third parties without the express permission of the publisher.

Instructions for Use

These instructions for use form part of the plant/equipment and should be transferred to the new owner in the event of the plant/equipment being sold.

EC declaration of conformity

according to the **EU Machinery Directive 2006/42/EG**, Annex II, 1.A

Manufacturer:

ABNOX AG,
Langackerstrasse 25
6330 Cham

Description and identification of the machinery:

Product / Article:	Dosierventil PEN
Type:	AXDV-C1-PN, AXDV-C2-PN
Project number:	PRJ-2011-09-00002
Project name:	PR000198 new
Commercial name:	Dosierventil
Function:	Dosieren von Fette & Öle

It is expressly declared that the machinery fulfils all relevant provisions of the following EU Directives:

2006/42/EG:2006-05-17	EU Machinery Directive 2006/42/EG
2004/108/EC:	Richtlinie 2004/108/EG des Europäischen Parlaments und des Rates vom 15. Dezember 2004 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit und zur Aufhebung der Richtlinie 89/336/EWG

Reference to the harmonised standards used, as referred to in Article 7(2):

EN ISO 14121-1:2007	Sicherheit von Maschinen - Risikobeurteilung - Teil 1: Leitsätze (ISO 14121-1:2007)
EN ISO 12100:2010-11	Sicherheit von Maschinen - Allgemeine Gestaltungsleitsätze - Risikobewertung und Risikominderung (ISO 12100:2010)

Cham, 02.09.2011

Place, date



Signature
Roberto Bemich
Leiter Qualitätssicherung

Contents

1	SAFETY INFORMATION.....	4
1.1	INTENDED USE.....	4
1.2	OBLIGATIONS OF THE OPERATOR.....	4
1.3	BASIC SAFETY INFORMATION.....	4
1.4	SAFETY AND HAZARD SYMBOLS.....	5
1.5	SAFETY INFORMATION FOR USING THE PRODUCT.....	5
1.6	SPECIAL TYPES OF HAZARD.....	5
1.7	ELECTRICAL ENERGY.....	5
1.7.1	HYDRAULIC AND PNEUMATIC ENERGY.....	5
1.8	MAINTENANCE, SERVICING AND TROUBLESHOOTING.....	5
1.9	WARRANTY AND LIABILITY.....	6
2	PRODUCT DESCRIPTION.....	6
2.1	TECHNICAL DATA.....	6
2.1.1	DATASHEET AXDV-C1-PEN AND AXDV-C2-PEN.....	7
2.2	INTENDED USE.....	7
2.3	MARKING.....	7
2.4	METHOD OF OPERATION.....	8
3	PACKAGING AND TRANSPORT.....	8
3.1	TRANSPORT DAMAGE.....	8
3.2	INTERIM STORAGE.....	8
4	TRAINING.....	8
5	ASSEMBLY – SETTING UP/INSTALLATION.....	8
6	FIRST TIME OPERATION.....	8
6.1	CONTROLS.....	9
7	FINDING AND FIXING FAULTS.....	9
8	CUSTOMER SERVICE/SUPPORT.....	10
9	MAINTENANCE.....	10
9.1	MAINTENANCE PLAN.....	10
10	DECOMMISSIONING.....	10
10.1	SHORT-TERM INTERRUPTION.....	10
10.2	LONG-TERM INTERRUPTION.....	10
11	AUXILIARY AND OPERATING SUPPLIES.....	10
12	DRAWINGS AND SPARE PARTS.....	10
13	RESALE.....	10
14	RETIREMENT OF PRODUCT.....	11
15	OPTIONS.....	11

1 Safety information

Please read through this operating manual carefully to make yourself familiar with the safe and efficient operation of this product. Keep this handbook for reference purposes.

This operating manual contains important regulations and information for the safe and professional operation of the equipment/the device. It is also meant to help the operating and maintenance personnel to avoid hazards, to reduce repair costs and failure times and to increase the reliability and the lifespan of the equipment/the device. Therefore it is very important to guarantee access to this document for anyone who is assigned with the support of the equipment/the device.

1.1 Intended use

The equipment/the device may be used only in the intended operating conditions.

Any other use over and above that is not deemed as intended use. The manufacturer shall not be liable for any damages resulting from unintended use.

The following are also part of intended use:

- Following and adhering to all the information from the operating manual.
- Adherence to the inspection and maintenance work.



Improper use

The manufacturer shall not be liable for any damages that may be attributed to an improper use of the equipment/the device.

1.2 Obligations of the operator

By the person responsible for safety it shall be ensured that:

- Only qualified personnel is assigned to work with the machinery and devices
- These persons always have among other the operating manual and other documents of the product documents when doing the job and obligated to follow these documents.
- Unqualified personnel are not permitted to work with the equipment
- The rules and regulations for accident prevention that are applicable for the place of use and the adherence to the maintenance work are followed.

Only qualified personnel who due to their education, experience and training and knowledge about the relevant standards, regulations, accident prevention rules and operating conditions have been authorised by the person responsible for the safety of the equipment to carry out necessary tasks and who know and can avoid the hazards may be permitted to work with equipment.

The responsibilities of the personnel are clearly defined for the assembly, commissioning, operation, setting-up, maintenance, storage and repair.

Trainees may work at the equipment only under the supervision of qualified personnel.

The safety information and safety requirements are described below and with this safety information no claim is raised on the completeness of the information.

1.3 Basic safety information

The following are the basic requirements for the safe handling and trouble-free operation of this equipment/device:

- May not be used alienated from its purpose.
- No modifications may be carried out at the equipment/device. Should this happen, then the customer shall have the sole responsibility. For desired modifications please speak to ABNOX AG.
- The safe operational condition of the equipment/device should be guaranteed at all times. An inspection on the function and damages should be conducted regularly by the qualified personnel. The disassembly may be carried out only by authorised personnel using the operating manual. On request we will conduct device training to bring your personnel to the required level of knowledge.
- The customer is responsible for complying with all the necessary safety measures.
- Do not use the equipment/device when it is directed towards people.
- During maintenance work disconnect the device from the compressed air / lubricant pipe.
- All the pipes, hoses and screws must be regularly inspected for leaks and externally recognisable damages. Remove damages immediately!
- If sensors are in the magnetic fields or exposed to such forces, it may lead to malfunction of sensors.
- The cleanliness and clear arrangement of the work area at and around the equipment/device should be ensured and inspected through regular checks.
- The rules and regulations for accident prevention applicable for the place of use must be followed.

- Safety equipments may be removed only after bringing the equipment to a standstill and protecting the equipment/device from being started again.
- Before each operation of the equipment/device all the safety equipments must be attached professionally and must be functional.
- The required personal safety equipments should be provided by the operating company.
- Safety equipments and safety devices must be checked regularly.

1.4 Safety and hazard symbols



WARNING AGAINST A HAZARD AREA

Warning information is information about the hazards that may lead to bodily injuries and/or material damages.



NOTE

Hint symbols give you valuable information and practical tips.



Crushing hazard

Warning against crushing hazard



ELECTRICAL VOLTAGE

Warning against fatal electrical voltage.



ENVIRONMENTAL HAZARD

Protection of the environment through professional disposal of various materials and their delivery of disposal.

1.5 Safety information for using the product

All devices and assemblies have been developed and built according to the state-of-the-art technology and recognised safety-relevant rules. Nevertheless there may be hazards for the users or third parties or damages to the equipment/device or other material assets in case of improper use or handling.

The equipment/device should be used only:

- For intended use.
- In safe and faultless condition.
- Malfunctions impairing the safety should be removed immediately.

1.6 Special types of hazard

1.7 Electrical energy



ELECTRICAL VOLTAGE

Working with electrical components should be done only by an electrician or under the guidance and supervision of an electrician in accordance with electrical rules.

1.7.1 Hydraulic and pneumatic energy



HYDRAULIC AND PNEUMATIC SYSTEMS

Assign work at the hydraulic and pneumatic equipments only to personnel with special knowledge and experience in hydraulics and pneumatics!

1.8 Maintenance, Servicing and Troubleshooting

- Prescribed adjustment and maintenance works should be carried out according to the maintenance schedule within the stipulated time.
- Inform operating personnel before adjustment and maintenance works.

- The main switch should be switched off.
- Separate the mains plug from the network and secure against unintended operation.
- The pneumatic / hydraulic system must be pressureless.
- Check all the screw and fitting connections for firm position.
- After completing the work all the functions and safety equipments should be checked immediately.



WARNING

All the works at the equipments/device should be carried out only when the equipment is at standstill.



ENVIRONMENTAL HAZARD

Various materials / fluids should be handled professionally and separated in accordance with respective regulations customary to the country and supplied for disposal.

1.9 Warranty and liability

In essence written agreements defined in writing in advance shall be applicable.

Warranty and liability claims in case of personal injuries and material damages are excluded, if they can be attributed to one or more of the following causes:

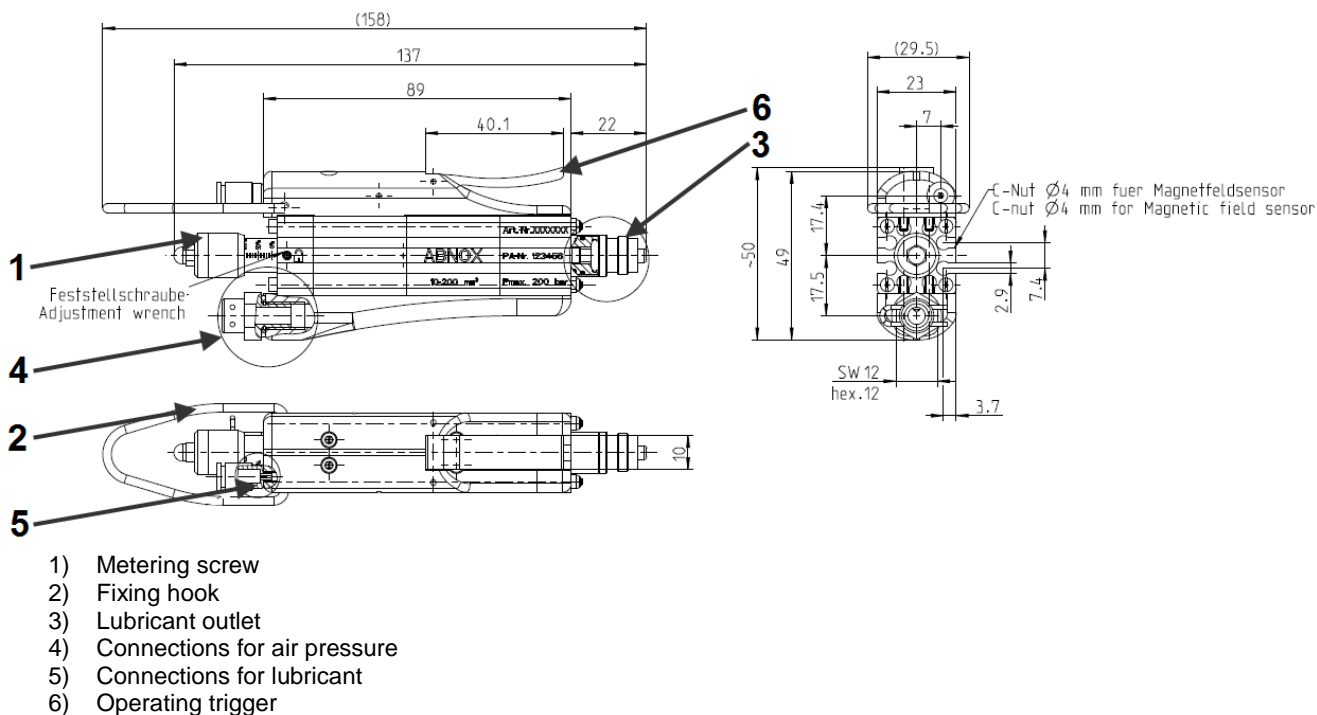
- Unintended use of the equipment/device.
- Works carried out by unqualified persons (as mentioned).
- Improper transport, storage, assembly, commissioning, operation and maintenance of the equipment/device.
- Non-compliance with the information in the operating manual related to safety, storage, assembly, commissioning, operation, maintenance and setting-up of the equipment/device. Operating the equipment/device with defective safety equipments or in case of safety and protective equipments that have not been installed properly or are not functional.
- Unauthorised changes to the equipment/device.
- Unauthorised changes to the pressure conditions during pressure protection.
- Unsatisfactory monitoring of the machine parts that are subject to wear.
- Improper repairs and use of foreign parts.
- Catastrophic events, caused by the effect of foreign substances and acts of God.

2 Product description

2.1 Technical data

Model	AXDV-C3-SV	AXDV-C4-SV
Item no.	4192820	4192920
Construction type	Vertical handgrip	
Area of application (cm ³)	0.1 - 2.0	1.0 - 6.0
Weight (kg)	1.540	1.569
Min. / Max. substance pressure (bar)	20 / 200	
Min. / Max. pneum. operating pressure (bar)	5 / 7	
Optimal pneum. operating pressure (bar)	6	

2.1.1 Datasheet AXDV-C1-PEN and AXDV-C2-PEN



NOTE

We recommend fitting a service unit to the control air.

2.2 Intended use

The unique design allows the right lubricant to be delivered in the right amount to the right place at the right time. The metering valve with handgrip is also suitable for use with oil.

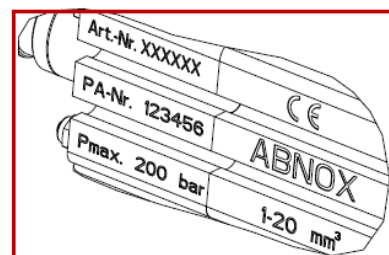
2.3 Marking

The product is laser-engraved.



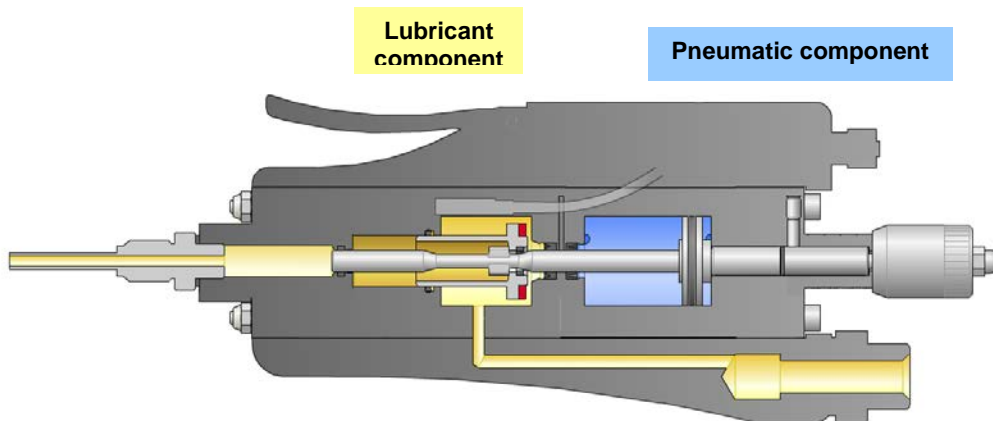
NOTE

The reference data engraved on the product must be quoted when ordering spare parts or requesting technical support.



2.4 Method of Operation

The pneumatic component of the metering valve is controlled by a pneumatic 5/2 valve built into the handle. The application of lubricant is started by opening the outlet. The application pressure depends on the lubricant pressure. The air and lubricant chambers are separate.



3 Packaging and transport

The system/the device is prepared by ABNOX AG for the transport to the relevant "initial place of destination". The packaging unit must not be subjected to any additional load. The packaging and its content must be protected from any impact of humidity. The transport and storage temperature between -20°C and $+40^{\circ}\text{C}$ must be observed in any event.

3.1 Transport damage

If transport damage is discovered during goods inward inspection, the following procedure must be observed:

- Notify deliverer (freight forwarder, rail, etc.)
- Create damage record
- Inform supplier.

3.2 Interim storage

The interim storage in aggressive, damp environments or outdoors may result in corrosion damage and other damage, for which we accept no liability. The transport and interim storage temperature of -20°C to $+40^{\circ}\text{C}$ must be observed by all means.

4 Training

- Only trained and instructed staff that have read and understood all points of the operating instructions, have mastered the individual operating modes and can implement the associated safety aspects may work on the system/device.
- The duties of the staff are clearly defined for assembling, commissioning, operating, equipping, maintaining, storing and repairing.
- Staff to be trained may only work on the system/device under the supervision of an experienced person.

5 Assembly – setting up/installation

The device/machine must be set up or installed at the intended place of use in compliance with the below conditions.

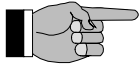
- All legal provisions must be clarified on site and their compliance ensured.
- The ground and space conditions must be clarified before setting up the system / installing the device in order to ensure the safe operation for staff and the system/device permanently. The system/device must be assembled/installed in such a way that secure and permanent operation is ensured.
- The system/device may be set up, commissioned and/or stored by specially trained expert employees only.
- The system/device was built for rooms which are protected from the influences of weather.
- The operation and storage in aggressive, too damp environments or outdoors can result in corrosion damage, for which we accept no liability.



NOTE

All dosage valves are checked in the plant before delivery. It is therefore possible that residues of the test agent may be found in the valve.

6 First Time Operation

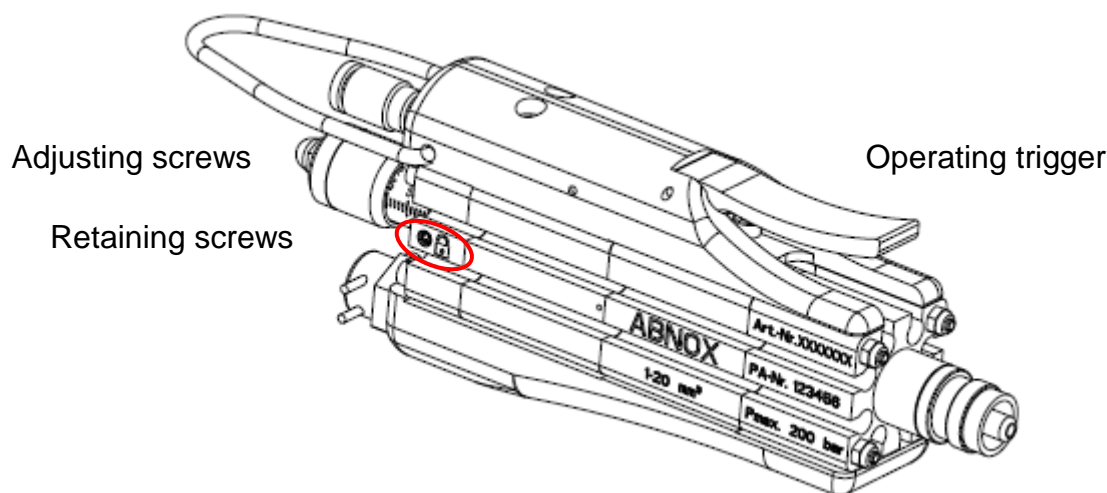
**NOTE**

Check that air pressure of the control air is approx. 6 bar. This ensures the best possible performance by the valve with handgrip.

The substance pressure should not exceed 200 bar. Please also check the pressure transmission of the feed pump. You can easily regulate the feed pump pressure using a pressure reduction valve (this valve is recommended but not obligatory).

- The lubricant feed tubes should be filled with lubricant before closing the metering valve (ventilation). Then connect the feed tubes and the control air as per the diagram.
- When using for the first time, set the maximum application amount (turn the adjusting screw outwards).
- If the control casing will not adjust, turn on the trip valve or retaining screw. The adjusting screw can now be adjusted.
- Once the first amount of lubricant has been expelled, the application amount required can be set using the control casing.
- Keep the metering valve as close as possible to the point of lubrication. This makes the application more accurate and more easily repeatable.
- The application cycle depends on the viscosity of the lubricant and the substance pressure.

6.1 Controls



7 Finding and fixing faults

**NOTE**

The rectification of all faults specified below may be carried out by a trained expert employee only.

**NOTE**

To rectify faults, no special tools are required.

**WARNING**

Risk of accidents and environmental hazards: take care not to spill any lubricant or oil. The lubricant/oil must be disposed of in the proper manner (hazardous waste).

Faults	Possible cause	Solution
The valve opens but no lubricant comes out.	Does the feed pump need lubricant?	If the pump is not working, check the pump instructions for use. Check the ventilation screw on the feed pump (see pump instructions for use).
	Leakage	Check the metering valve
There is air in the system.	Air is trapped in the lubricant Air is trapped in the tubes.	Remove the feed tube from the metering valve, pour out the lubricant, then reassemble the tube. Restart using the maximum application amount.

8 Customer service/support

ABNOX AG

Langackerstrasse 25

CH-6330 Cham

Switzerland

Tel.

+41 (0) 41 780 44 55

Fax

+41 (0) 41 780 44 50

E-Mail

info@abnox.com

Internet

www.abnox.com

9 Maintenance

This section covers maintenance of the equipment. The diagram shows when maintenance or checks need to be carried out.



NOTE

This section does not cover repairing the equipment if it has been damaged. This should only be done by trained specialists or by the manufacturer's customer service department.

9.1 Maintenance plan



WARNING

The equipment must be switched off before any maintenance work is carried out. It must be disconnected at the mains and the plug taken out of the socket.

The pneumatic/hydraulic system must not be pressurized.

The maintenance intervals shown relate to one-shift operation. If the equipment is used for multi-shifts or is used excessively then it will need to be maintained more regularly. Other factors should also be taken into account such as the cleanliness of the operating environment.

WHEN	WHAT	HOW	WHO
Weekly	Check metering valve for leaks and damage	Visual	Operator's trained staff

10 Decommissioning

10.1 Short-term interruption

In the event of a short-term interruption (over night or at the weekend), the main switch must be deactivated. The system/device is disconnected from the mains and powerless in non-activated status (control of the displays).

10.2 Long-term interruption

In the event of a longer non-use, the following points should be observed:

- The main switch must be switched off (if it exists)
- The mains adapter must be disconnected from the mains (if it exists)
- There must be no pressure in the system (control of the displays).



WARNING

Risks of accidents and environmental hazard: No grease/oil may be spilled. The grease/oil must be disposed of correctly (hazardous waste).

11 Auxiliary and operating supplies

No special auxiliary and operating supplies are required to operate the system/device.

12 Drawings and Spare parts



NOTE

Dimensioned drawings, spare parts drawings and spare parts lists, sealing set drawings and sealing set lists can be found at www.abnox.com.

13 Resale

These operating instructions are part of the system/device and are included in the scope of delivery in the event of a resale.

14 Retirement of product

When retiring the system/device, the following points should be observed:

- The main switch must be switched off (if it exists)
- The mains adapter must be disconnected from the mains (if it exists)
- There must be no pressure in the system (control of the displays)
- The grease/oil must be removed and disposed of correctly.



WARNING

Risks of accidents and environmental hazard: No grease/oil may be spilled.
The grease/oil must be disposed of correctly (hazardous waste).

15 Options



NOTE

Other options for this product can be found at www.abnox.com.
