

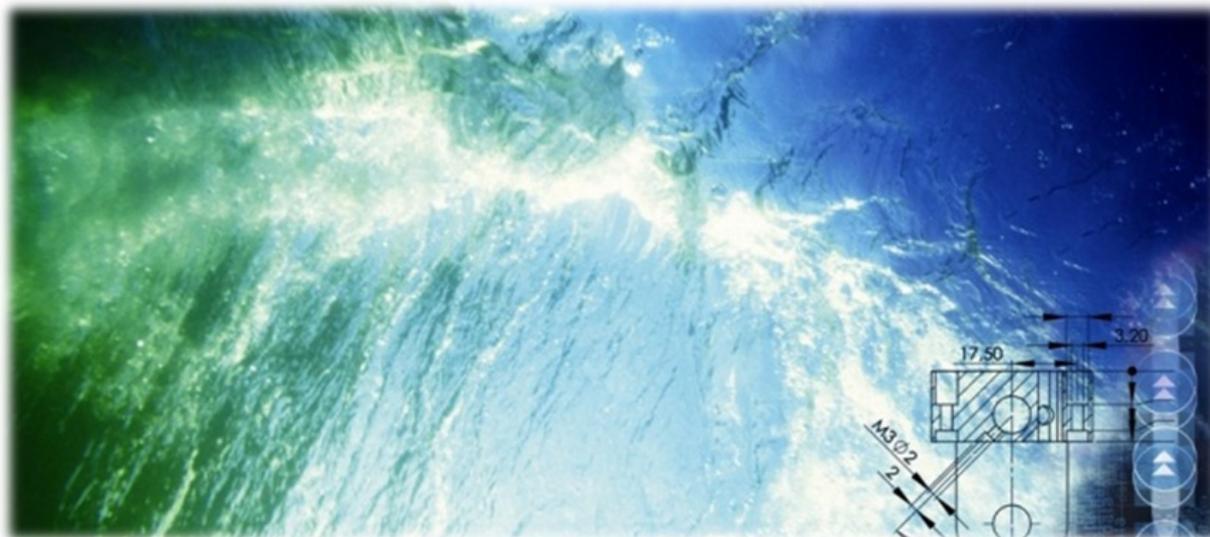


USER MANUAL

Cleaning Plug Injector (1st generation)

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For a thorough introduction of Your AKVA product, we ask that all users read this entire manual. If questions occur, contact us!

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1 Safety

Safety for the users of our products, is top focus when developing new products and user manuals in AKVA group.

Therefore, we strongly recommend that everyone that is going to be using it, carry out repairs, service and maintenance on the product, as well as everyone working in the area where the product is installed or being used, reads this entire manual, and especially this safety chapter.

This recommendation is based on both personnel safety, as well the desire to keep the products in order as long as possible, by avoiding any damages risked if the safety instructions are not followed.

1.1 Safety symbols

The following symbols are used in this manual:



Information



Show caution, danger of damaging equipment and mild personnel injuries



Warning, may cause personnel injuries



Use ear protection when staying in engine rooms

1.1.1 Other symbols used in this manual



This product will not affect its surrounding environment



Go to or see page or chapter for further instructions or more information

1.2 Receiving new equipment



Make sure that all parts are delivered according to the service note. If the order is not complete, or if any defects are discovered, contact AKVA immediately, contact information is found in the back of this manual.

1.3 Personnel safety

Everyone who is working with or around the Cleaning Plug Injector must undergo training regarding how to use the equipment, and also be aware of all dangers and consequences related to misuse. Owner and farm manager are responsible for informing and making sure that all personnel understand the contents of this manual.

To prevent personnel injuries and equipment damages during use, maintenance and repairing processes, it is crucial that all instructions provided by AKVA group in this manual are followed. All applicable safety laws and regulations in the country where the equipment is installed must also be complied.

Ear protection is mandatory when working with the Cleaning Plug Injector, and at all times when staying indoors with blowers, dosers or other equipment along the feeding line.

The entire feeding system must be turned off and secured in off position with a personal padlock during installation, maintenance and repairs. The blowers submit pressure air between 0 and 1,2 bar, and it is very important that this equipment is switched off to avoid personnel injuries and other dangers of high pressure damages when the lid is opened and the sponge is injected.

1.4 General safety

Send the plug through the feeding pipes without pellets. They may interfere with the cleaning process and in worst case, get stuck inside the pipes with the plug.

Never send more than one AKVA Cleaning Sponge through the feeding pipes at a time, because two or more sponges will reduce the air pressure. Reduced air pressure may not be able to carry the sponge all the way through the pipes, and they may get stuck inside and clog the pipes.

1.5 Disinfecting equipment

If any equipment is being moved to a new location, it is decreed by law to disinfect everything to prevent contamination.

We recommend rinsing with fresh water after disinfection, because the disinfectants are strong chemicals that may damage the surface materials.

2 Introduction



This user manual is part of the equipment delivered with Cleaning Plug Injector. Keep the manual for as long as the feed pipe cleaning device is being used, and make sure that all changes to the equipment are being noted in the back of this manual.

Thank you for choosing AKVA group ASA as supplier for your feed pipe cleaning device. Do not hesitate contacting us for more information regarding installation, use or maintenance for Cleaning Plug Injector or any other AKVA product.

The purpose of this manual is to make the user install and maintain Cleaning Plug Injector in a safe and economical way. The manual will show how to install and maintain the product, as well as hopefully answer most day to day questions. If there is anything relevant this manual does not explain or answer, please contact us for assistance and help to find a solution to any problems. Contact the AKVA service department, your subcontractor, your local AKVA office or our main office in Norway for assistance and help.

2.1 How to use this manual

This manual describes how to use and maintain the Cleaning Plug Injector in the best and safest possible way. This entire manual must be read and understood by ALL users prior to use of the product. Site owner and farm manager are responsible for that all site personnel and users know and understand the contents of this manual.

Before the first chapter, is a table of contents. The headlines works as links to their respective chapters in the .pdf-file.

Chapter 1 is the most important chapter of this manual, and includes safety precautions ensuring safest possible use.

Chapter 2 contains information on AKVA group and Cleaning Plug Injector, as well as this manual instruction.

Chapter 3 contains user instructions and safety precautions for use of the Cleaning Plug Injector, and chapter 4 describes maintenance of the device.

Four appendixes are found in the back of the manual: Index, with links to the rest of the manual in the .pdf-document, a deviation form for all deviations with the system, pages for notes about new and extra information are also in the back of the manual and AKVA contact information.



This entire manual must be read and understood prior to use, as well as used during installation and use of the Cleaning Plug Injector

2.2 About AKVA group

With four main brands, AKVA group ASA is a world leading supplier of technical aquaculture equipment. Since 1980 we have developed and produced fish farming equipment, both for cages at sea and for land based hatcheries. AKVA represents an industrial standard, which is presumed to be the turn key to the future. Research, project management, fast deliveries and customer follow-up have been our focus to ensure that we contribute to a positive development within the agriculture industry. Our goal is to deliver the best possible and most cost efficient equipment in order to keep preserving sustainable farming.

We have a wide variety of products, for example: plastic and steel cages, high pressure washers, net washers, boats, feed barges, feeding systems, cameras, sensor systems, under water lighting, software for fish farming and recycling systems.

AKVA has a continuous development of products, and we continue to improve product safety, functions, range of use and reliability. The purpose of this manual is to enable users to install and maintain the Cleaner Plug Injector in a safe and economic way.

All of our equipment is pre-installed, tested and delivered from our own production department. This means that our customers have total control over which components you can choose from, grouping collocation, testing and deliveries. Our production staff consists of people with great expertise and engagement for producing the best possible products. Having our own production site provides excellent service in case something should go wrong, or if assistance is required. Our service staff is available over telephone or on location to assist whenever necessary. Safety, both for users and equipment is main focus when AKVA group develops products and product manuals.

2.3 About Cleaning Plug Injector

This device is installed in the feed line, preferably after the flow guard and normally just before the first doser.

The Cleaning Plug Injector is always installed by AKVA service personnel.



The cleaning plug used is named "AKVA Cleaning Sponge" and will here-after be referred to as 'the sponge' in this manual.



The sponge is injected into the feed lines through the Cleaning Plug Injector as described in chapter 3.

After being injected, the sponge is carried through the feeding pipes and out to the selected cage using pressure air from the feed line blower.



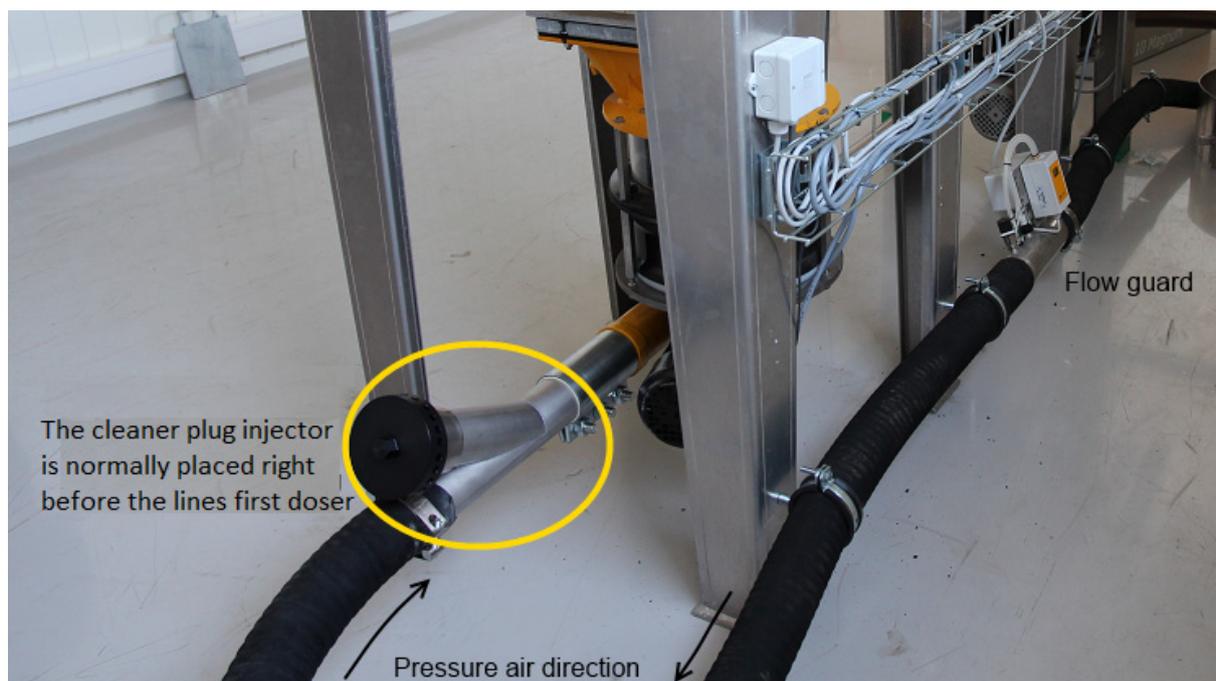
The "AKVA Cleaning Sponge" is made from natural rubber and will not cause any harm to the fish inside the cage nor the surrounding environment



Send only one sponge through each feed line at a time. Two or more sponges in the same line will give a severe air velocity reduction, and this may lead to sponges jamming inside the pipes



AKVA group ASA can only guarantee that feed pipe cleaning using "AKVA Cleaning Sponge" will work with the AKVA Feed Pipe Cleaners (including the Cleaning Plug Injector). We cannot guarantee for use of any other cleaning plugs in this device, nor can we guarantee that the "AKVA Cleaning Sponge" will work with cleaning systems not delivered by AKVA group ASA



Travelling through the pipes, the sponge will carry with it feed remnants, dust and condensation in its porous surface. This brings clogging in the feeding pipes to a minimum when feeding with pellets.

Time estimated from when the sponge is injected into the Cleaning Plug Injector, is about 20 seconds with a 400m long feed line with air speed of 20m/s.

The sponges will self-cleanse some in the water, so leave them there for some time after use. They will float in the water, and are therefore easy to collect from the cage edge using a hoof.



See chapter 4 for further instructions on how to clean the sponges properly.

3 The cleaning process



Ear protection is mandatory when commencing any work in the machine room, or rooms in which blower or doser is located



Make sure to turn off and secure the blower in off position before removing the Cleaning Plug Injector lid. If the blower power is still on, there is danger of the high air pressure causing the lid to shoot off the injector pipe inlet and potentially injure personnel sojourning the room.

The Cleaning Plug Injector lid is designed to avoid this, it has small holes all around the edge, and the pressure air will be distributed evenly through these, reducing the risk of the lid flying off the Cleaning Plug Injector inlet



Set feeding to manual during the entire cleaning process



Run sponges through all feed pipes at all cleanings. Set correct destination for selectors in AkvaControl or similar feeding software



Recommendation: Send one sponge through the system before feeding commences, and one sponge after the feeding is finished for the day



If the sponges are dirtier than usually after being sent through the system, use more sponges per cleaning

3.1 Explaining the method

As the AKVA Cleaning Sponge is carried through the feed pipes, and its purpose is to bring along condense, fats and pellet dust from inside the feeding pipes.

We recommend sending one sponge through each of the feeding pipes before starting the daily feeding, and one per pipe after the daily feeding is done.

If the sponges seem filthier than regularly, this may indicate that there is a need for more sponges to be sent through the system. So send multiple sponges through the system when necessary, though only one sponge per feed line at a time.

Send only one sponge at a time, make sure that the first sponge has exited the system before inserting the next. Two or more sponges inside the system at the same time, will decrease the air pressure so much that the sponges most likely will get stuck inside and clog the system.

3.2 Procedure for pipe cleaning - instructions

- 1 To avoid pellets from entering the pipes when the cleaning process is in progress, set AkvaControl to manual feeding:

click 'Feeding' -> choose 'Manual feeding'

- 2 Click on 'Clean hoses' (pkt. 2 in the image below)

- 3 Click the symbol for 'Stop manual feeding' (pkt. 3 in the image below) to stop the blower



- 4 When the blower is completely turned off, gently unscrew the cover off the Cleaning Plug Injector inlet



- 5 Insert the cleaning sponge into the injector, and use a stick, a broomstick or a similar device long enough to push the sponge all the way down to the feeding pipes



Use a device long enough, to guarantee that it will not fall into the feeding pipes to insert the sponge. A too short stick may fasten and/or clog the feeding pipes

- Put the lid back on to the Cleaning Plug Injector inlet and fasten it properly



Remember to put the cover back on to the Cleaning Plug Injector inlet after injecting the sponge, to avoid foreign objects entering the feeding pipes, and to avoid air pressure loss during the cleaning process (and during the feeding process)



- Set blower speed to 70%, so that the air pressure is stabilized at around 20m/s



- Click on the symbol for 'Start manual feeding in chosen unit with given velocity'

- Run one sponge through each feed line to make sure that most of the remnants and condensation are cleaned out
- When all feed lines are cleaned out, the sponges will be floating around inside the cages, and can easily be picked up with a hoof. It will be time saving to pick up the sponges at the same time as other tasks are done by or at the cages.

4 Maintenance

4.1 Cleaning the sponges



We recommend leaving the sponges in the cages for a while after they are sent through the feeding pipes. The water has a cleansing effect and will simplify the later cleaning process



It is always much easier to clean the sponges directly after use, before feed remnants dry into the sponge material



Never send dirty, used or unwashed sponges through the feeding pipes

Instructions:

Preferably, clean the sponges immediately after they are taken out of the cage, before the dirt dries into the material. Feed remnants and grease is stuck in the sponge's porous surface, and this is cleaned off with a mild degreasing soap.

Leave the sponges in a bucket or a similar container with warm soap water and leave them for some minutes letting the degreaser work. Move them around so that all sides touch the soap water. Squeeze the sponges carefully until they get their original colour back. Change washing water a few times if necessary to clean sponges properly.

Rinse the sponges well with warm water to remove all soap remnants. This is important to prevent soap inside the feeding pipes and the feed.

Leave the sponges to dry before using them again. They should be as dry as possible to carry as much condensation as possible.

5.2 Remaining maintenance

Outside cleaning of the Cleaning Plug Injector is performed as often as possible, for instance at the same time as the dosers are cleaned and rinsed. Maintenance of the Cleaning Plug Injector should be included in the plan with remaining maintenance routines for the feeding system. Outside cleaning and control should be performed at least once a month.



In need of service, repairs or maintenance besides cleaning, contact AKVA service personnel. Contact information is found in the back of this manual.

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Appendix B - Deviation form



Make copies of this form before filling anything in

Deviation control nr.:	
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Unit:	Producer:	Prod.no.:	Purchase year:

Deviation description:

--

Follow up proposition:

--

Date and signature, declarer:

--

Follow up directed:

--

Status:

--

New action for deviation no.:

--

Date and signature, follow up:

--

Appendix D - Contact information

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