



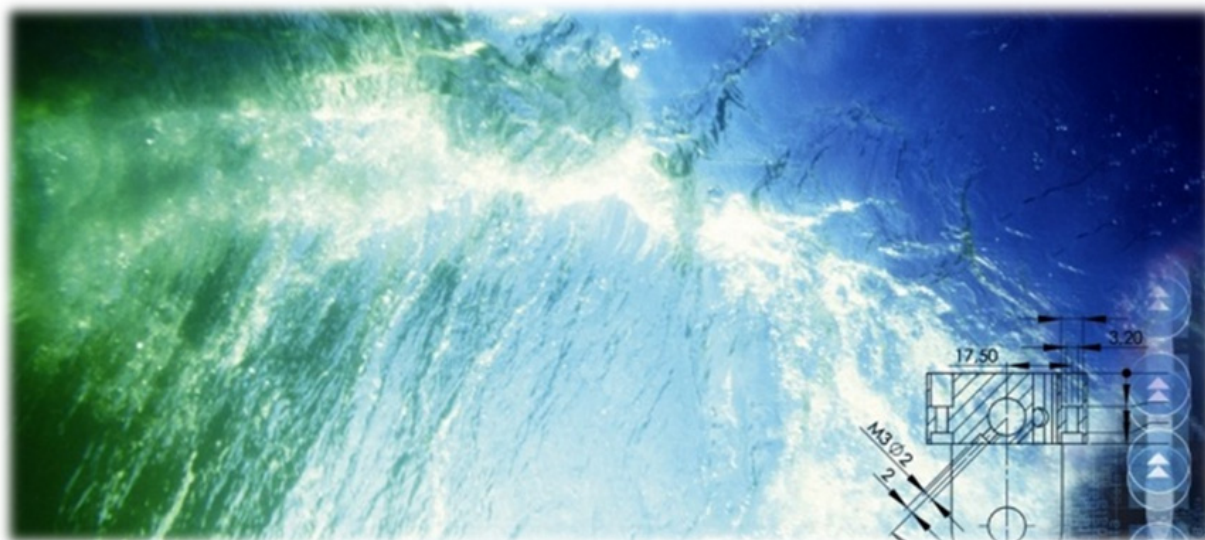
USER AND MAINTENANCE MANUAL

Feed Pipe Cleaner

- motorized and manual with handle

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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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Table of contents

1	Safety	4
1.1	Safety symbols	4
1.2	Receiving new equipment - warranty	5
1.3	Use ear protection	5
1.4	Handle	5
1.5	Motor safety	6
1.6	Stop feeding before the cleaning	6
1.7	One cleaning sponge at a time	6
2	Introduction	7
2.1	Contact information	8
3	Information	9
4	The cleaning process	11
4.1	Explaining the method	12
4.2	The green button	13
4.3	Procedure for pipe cleaning - instructions	14
5	Maintenance	15
5.1	Cleaning the sponge	15
5.2	Remaining maintenance	16
	Appendix A - Index	17
	Appendix B - Deviation form	18
	Appendix C - Notes	19

1 Safety

Safety for the users of our equipment is top focus when AKVA group ASA develop new products and product manuals.

We therefore strongly recommend that everyone that use the equipment, all that perform any type of repairs, service or other maintenance to the product, and all that work in areas where the product is installed read this entire manual and at least this safety chapter.

This recommendation is based on both personnel safety as well as a desire to keep the products in order and avoid damages risked if the safety instructions are not followed.

1.1 Safety symbols

The following safety symbols are used in this manual:



Information



Important information



Show caution, danger of damaging equipment and mild injuries to personnel



Warning, may cause personnel injuries



Use hearing 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 - warranty



Make sure that all parts are delivered according to the service note. If Your order should not be complete, or You discover any defects, contact AKVA immediately.

AKVA group ASA offers a 1 year warranty, covering production defects. This warranty is efficient after date of shipment to original customer.

1.3 Use ear protection



Ear protection is highly recommended all the time when staying in the engine room.

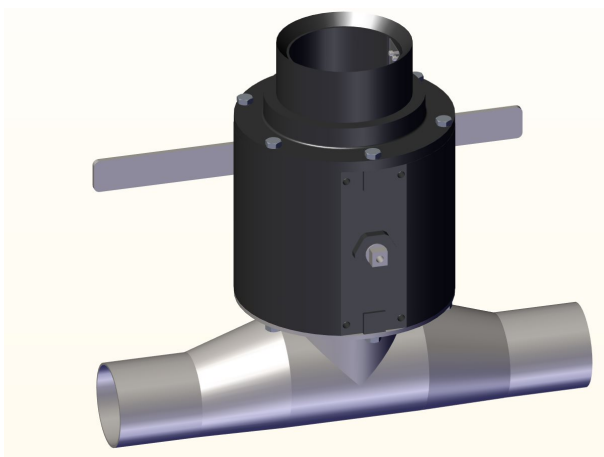
1.4 Handle



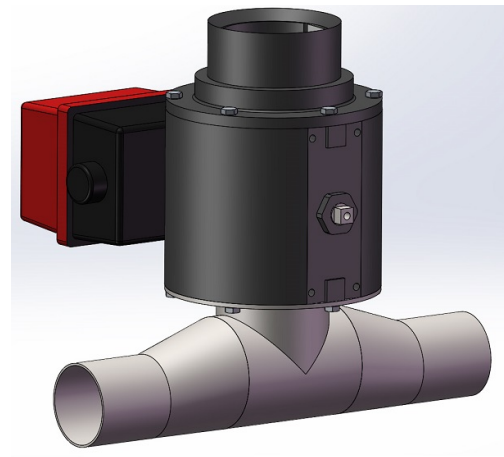
Do not use handle when the motor is mounted on the Feed Pipe Cleaner. Use handle only without motor.

If absolutely necessary, the handle may be used only when the motor is turned completely off. Do not start the motor again until the handle is removed. See motor data sheet for more information.

With handle - NO motor



With motor - NO handle



1.5 Motor safety



See motor manual (ER Series Electric Actuator item no 10001024) for information on motor safety. This manual explains a secure method of manually controlling the motor in case of power break downs, if a sponge is jammed inside the actuator or of any other reason must be used manually.

1.6 Stop feeding before the cleaning



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.

1.7 One cleaning sponge at a time



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.

2 Introduction



This user manual is part of the equipment delivered with Feed Pipe Cleaner. Preserve this manual for as long as Your AKVA equipment is in use, and make sure that all changes done to the equipment are being noted in this manual.

Thank you for choosing AKVA group ASA as supplier for your feed pipe cleaner. Do not hesitate contacting us if you need more information regarding use or maintenance for your product.

With four house 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 in focus to ensure that we deliver the best possible and most cost efficient equipment, and thus contributing to preserve a sustainable aquaculture and a positive development within the aquaculture industry.

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.

We practice continuous product development to improve the equipment's safety, functions, manner of operation and working reliability.

All of our equipment is pre-installed, tested and delivered from our own production department or from approved collaborators. This means that our customers have total control over components to choose from, grouping collocation, testing and deliveries. Our production staff consists of people with great expertise and enthusiasm to produce the best possible products

for you. Having our own production site gives our customers excellent service in case something should go wrong, or if any assistance is needed. We hold most of the parts for our products in stock, and our service staff is available on the telephone or on location in order to assist you if necessary. Safety, both for the user and for the equipment is our main focus when developing products.



This entire manual, and especially the safety chapter must be read and understood before commencing any work on the equipment

Before any work is done with or on a Feed Pipe Cleaner, including maintenance and repairs, we recommend that all users are properly trained by AKVA group ASA. Users need to get to know this manual and its contents, and perform procedures and maintenance as described here to ensure reliable operations and a long lasting product. This manual answers most day to day questions and gives a thorough description of how to use and maintain the Feed Pipe Cleaners.

2.1 Contact information

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supportakvasmart@akvagroup.com

Support Fishtalk, tel. +47 - 73 84 28 20

supportfishtalk@akvagroup.com

3 Information

Feed Pipe Cleaners are typically installed after the flow guard and normally right before the first doser on the feed line.



Feed Pipe Cleaners are 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 line via the Feed Pipe Cleaner. The procedures for the two types of injector devices are described in chapter 4.

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 therefore 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. 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 pellet 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 ball is injected into the feed system till it comes out in the other end of the system, is about 20 seconds with a 400m feed line with air speed of 20m/s.

The water have some cleansing effect on the sponges, so leave them in the cages for a while after use. They will float in the water, and are therefore easy to collect from the cage edge using a hoof. See chapter 5 for further instructions on how to clean the sponges properly.



4 The cleaning process



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



Never send more than one sponge through each feed line at a time, more sponges will clog the pipes



Turn the feeding off (or set to manual and off) 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, however only one at a time



Collect the sponges from the water at the same time as other tasks are to be performed at or by the cages to save time

4.1 Explaining the method

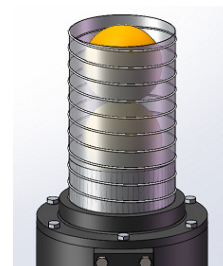
Set all blowers to between 20 and 30 m/s for ideal air velocity for cleaning the pipes with AKVA Cleaning Sponge. 20m/s is the ideal air pressure for a 400m long feed line, longer lines will need higher air velocity, however, sponge cleaning in shorter lines will work greatly with 20 m/s air velocity.

As the sponge is carried through the feed pipes, it will bring along both condense and pellet dust from inside the feeding pipes.

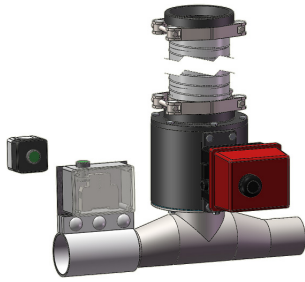
We recommend sending one sponge through each of the feeding pipes before starting the daily feeding, and one per pipe after the daily feeding is done.

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.

The sponges are stored inside the magazine tube and are injected into the feeding pipe one at a time as a green button is pressed down (see chapter 4.2) or the handle is turned (see chapter 4.3).



4.2 Motorized Feed Pipe Cleaner



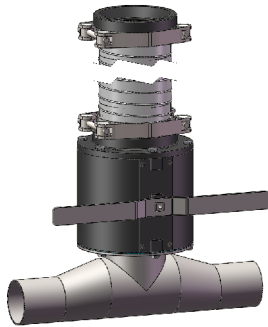
The green buttons are placed next to the Motorized Feed Pipe Cleaner and in the control room, and are marked with what they do, and of which feed line they control the cleaning.



Procedure instructions

- 1 Make sure that no pellets enters the feed pipes during the cleaning process:
 - a *Morning cleaning*: start the blower, set the feeding to manual or postpone the start of the feeding
 - b *Evening cleaning*: the feeding is done, keep the blower running
- 2 Set the air pressure for all blowers to around 20 m/s
- 3 Press one of the green buttons to inject a sponge into the pipe line. The button will light up as it is pressed down
- 4 When the light is turned off, it indicates that the sponge is out of the pipes. Start the feeding after the morning cleaning is done.

4.3 Feed Pipe Cleaner with handle



We recommend using the flow guard display and revise air velocity increasing as the sponge leaves the pipe. This assures that the sponge has left the pipe and is relevant when using Feed Pipe Cleaner with handle.

Note the air velocity with and without sponge inside the system and the desired air velocity used on the Feed Pipe Cleaner for each feed line. This way, all users can see when the sponge is inside and not.



These values goes only for when using more than one sponge per cleansing, and will not be necessary when using one sponge

The handle can be turned 180 degrees from right to left or from left to right. It can not be turned 360 degrees.

Procedure:

- 1 Make sure that no pellets enters the feed pipes during the cleaning process:
 - a *Morning cleaning*: start the blower, set the feeding to manual or postpone the start of the feeding
 - b *Evening cleaning*: the feeding is done, keep the blower running
- 2 Set the air pressure for all blowers to around 20 m/s
- 3 Turn the handle around 180degrees, from left to right, or from right to left
- 4 If more than one sponge is being sent trough, it is important to wait the default measured amount of time to be sure that the first sponge has left the feed pipe.

5 Maintenance



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 taking them out of the water, before pellet dust dries into the sponge material



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

5.1 Cleaning the sponge

Preferably, clean the sponges immediately after they are taken out of the cage, before the dirt dries into the material, risking bacterial growth or moulding. The sponge's porous surface collects pellet dust and grease, and these will be cleaned off with a mild degreasing soap.

Leave the sponges in a bucket or a 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 Feed Pipe Cleaners is done as often as possible, for instance at the same time as dosers are cleaned and rinsed.

When the magazine gets too filthy, it has to be cleaned. This is performed by service personnel, contact AKVA service personnel for assistance with this task or any other maintenance, service or repairs.

Appendix A - Index

A

air velocity 9, 12

B

blower 9, 11-14

C

cage 9-11, 15

cleaning 6, 9, 11-16

cleansing effect 10, 15

condensation 10, 15

D

doser 9, 11, 16

E

ear protection 5, 11

F

feed line 9-13, 15

feeding pipes 6, 9, 10, 12, 15

flow guard 9, 12

G

grease 15

guarantee 9

I

information 4-8

inject 9, 10-13

instructions 4, 10, 13, 14

M

maintenance 4, 15, 16

N

natural rubber 9

O

outside cleaning 16

P

pellets 6, 10, 12-15

porous surface 10, 15

pressure air 9, 14

R

repairs 4, 16

S

safety 4, 6

service 4, 13

service personnel 9, 16

soap 15

sponge 6, 9-15

W

warranty 5

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:

--

