

USER MANUAL

Idema Hydraulic Net Cleaner

H-Drive K-28-280-SH, H-Drive K-25-400-SH, H-Drive K-30-200-SH
and H-Drive K-41-210-SH

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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



Information



Show caution, danger of minor personnel injuries and damages to equipment



Warning - may cause personnel injuries



Danger! Will cause dangerous situations and danger for personnel

1.1.1 Other symbols used in this manual



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.

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

1.3 Personnel safety

All paragraph references in this manual are from "Regulations about high pressure cleaning and more" (In Norwegian: FOR 1992-02-13 nr 1263: Forskrift om høytrykksspyling m.m.). All who are working with or by net cleaners delivered from AKVA group and Idema have to read and understand these regulations and its contents before using the net cleaner.

All personnel must be trained in how to operate the equipment, and also be instructed in all dangers that may occur by improper use. (ref. § 6)

Employer is responsible for informing all personnel about all safety precautions as well as explaining which of the operations may cause personnel injuries. All personnel must be instructed in all of the safety instructions, and it is employers responsibility every employee understands these instructions. (ref. § 7)

Employer must instruct all personnel to use appropriate personal safety equipment and garments when working with and by high pressure systems. Always use antiskid footwear when walking around the cage edge. (ref. § 9)

If the net cleaner operator can not see the pumping aggregate directly, an assisting operator is required. The net cleaner operator must be able to communicate with the assisting operator, preferably visually. (ref. § 22)

Sealing leaks within piping- or hose fittings, must only be performed on depressurized equipment. (ref. § 13)

Employer is responsible of marking all areas where high pressure equipment is being used, as well as securing the danger area properly. (ref. § 23)

When cleaning with manually operated high pressure equipment, only devices with balanced reaction force must be used. Only one diver may stay in the water where the high pressure washer is being used. A diving assistant must control the pumping aggregate, so that the process can be shut down immediately in case of an emergency. (ref. § 26)

Under aged personnel (under 18 years of age) must not operate the washer alone. (ref. Regulations about work performed by children and youth, § 9)

Show general caution when using high pressure equipment. The equipment generates strong forces and may cause severe damage to both personnel and equipment if used incorrectly. When using high pressure net cleaners, the "Regulations about high pressure cleaning and more" (FOR 1992-02-13 nr 1263: Forskrift om høytrykksspyling m.m.), has to be complied. According to § 4 in these regulations, overstepping them is a legal offence.

1.4 Equipment safety

1.4.1 Storage

Do not store the equipment at too high temperatures because of the risk of contagious Legionella bacterial growth within the system. It is advised that the equipment is rinsed off with a narrow beam of fresh water directed away from people after storage.

Salt water drying inside the high pressure pump and components surrounding the pump (suction pump, filters, bypass valve, hoses or other salt water leading components) must be avoided. When this happens, salt crystals are left inside as the water vaporises, and they may cause damage to gaskets and sealings, high abrasion and reduces the equipment's functions. Therefore, if the equipment is going to be stored for more than one week, it is recommended that the entire system is flushed through with fresh water before placing in storage.

For over winter storage, avoid temperatures below the freezing point (100°C and 32°F). It is also recommended to flush the system with a water containing anti-freeze fluid, to prevent the inside water to freeze and possibly destroy the equipment if exposed to freezing-temperatures. The antifreeze solution will also function as lubricant for the system and its internal components.

1.4.2 General treatment of the equipment

All mechanical and electronic equipment used in the aquaculture industry must be maintained properly in order to function over time and according to expectations, especially in periods when they are being used the most. High pressure washers work in demanding environments with high pressures, large amounts of water and an aggressive corrosive salt water environment. Because of this, following the maintenance instructions are highly required.

Materials that do not require much maintenance are chosen for most of the critical components. Most of the exterior components, however, would be too expensive to produce of corrosion resistant materials. Therefore, rinsing the equipment with fresh water after every use is highly recommended to avoid surface corrosion.

All the movable parts, such as hinges, locks, gas regulators, wheels and such, must be lubricated after rinsing. If scratches or other damages appear in any enameled surfaces, these must be sealed with wax or lubricant immediately in order to prevent further corrosion.

Before using the equipment, always make sure it stands steadily, and if necessary, is securely attached to the foundation to prevent it from slipping and damaging its surrounding equipment or personnel.

If the equipment is going to be moved from one site to another, it is required by law to disinfect the equipment to avoid spread of contagious diseases. Some disinfectants may be aggressive to some metals, o-rings, sealings and other internal components. Therefore, rinse the equipment after use of disinfectants, both inside and outside, with fresh water.

1.5 Inspection before use

High pressure water represents massive forces, and therefore it is important that critical components are inspected and tested frequently.

Bypass/safety valves are installed at all high pressure equipment to ensure that no higher pressure than the maximal pressure endured by the various components occurs. The safety valve is set to open up for water flow in case the water pressure inside the system exceeds the predetermined level. If any of these valves are out of order when the system runs, this can cause severe damages to the equipment and injure personnel.
(ref. § 30)

The safety valve is set to a pressure value the equipment endures while in use. Never change this value to a higher pressure. (ref. § 14)

All hoses used in the construction, must be able to endure the working pressure of the equipment. Read the mark on all hoses to make sure they are constructed to bear the desired pressure before using them.

All hoses must be inspected for external damages before each time the net cleaner is being used. If a hose is damaged, it must be replaced or repaired before use.

1.6 Disinfecting equipment

If any of the equipment, cables, ropes or other belonging 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 equipments surface materials.

2 Information

This user manual is part of the equipment delivered with the Akvasmart Idema Hydraulic Net Cleaner. Keep the manual for as long as the net cleaning system 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 net cleaning equipment. Do not hesitate contacting us for more information regarding installation, use or maintenance for Akvasmart Idema Hydraulic Net Cleaner or any other AKVA product.

Before any use, repairs or maintenance - or any other operations performed with or on the net cleaner, we recommend that all users attain proper training from AKVA group ASA.

All instructions, and especially the safety instructions in this manual must be followed in order to ensure safe and reliable operations, a long operation life for the product as well as safety for all personnel.

This manual will answer most day to day questions, but if any relevant information is missing, please contact the AKVA group service department, your subcontractor, your local AKVA office or our main office in Norway for assistance and help.

To ensure that the net cleaner equipment is installed correctly, and that all adjustments are performed according to the existing standard in the current country, personnel from AKVA group ASA must attend the first start up of the net cleaner.

2.1 How to use this manual

This manual describes how to use and maintain the Akvasmart Idema Hydraulic Net Cleaner 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 the product Hydraulic Net Cleaner, as well as this manual instruction.

Chapter 3 shows all main parts and specifications of the Hydraulic Net Cleaner. Installation procedures are listed in chapter 4. Procedures required before starting up the net cleaning system are explained in chapter 5, and chapter 6 explains how to start and stop the machinery. Use of high pressure pistol is described in chapter 7 and how to use net cleaner frame is described in chapter 8 and cleaning and storage procedures are found in chapter 9. Chapter 10 contains maintenance instructions as well as frequency tables and registration forms for maintenance tasks.

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 before commencing use of the equipment, as well as used as aid during use, maintenance and other processes

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 use and maintain the Akvasmart Idema Hydraulic Net Cleaner 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 Akvasmart Idema Net Cleaners

Idema Net Cleaners were launched in 1987, and are today renowned for quality, high performance and their ease of use. The first Net Cleaners had single 30cm diameter cleaning discs, operated from the cage edge using a shaft. Underwater pressure cleaning of cages where fish reside, has become even more common as the requirement to environmentally friendly aquaculture in larger cages provides the best scale of economics. AKVA have developed and improved the Akvasmart Idema Net Cleaners, and can now present the best range of net cleaners and high pressure pumps ever. This combination offers the most efficient cleaning system suited for all types and sizes of cages.

In net cleaning, filtered high pressure sea water is used to remove marine fouling on the nets. Akvasmart Idema Net Cleaners use rotating cleaning discs mounted on support frames in various shapes and combinations. We use rugged, tailor-made high pressure pumps to run the cleaning discs. The cleaning process starts with submerging the frame in the inside of the net, using high pressure sea water. Idema cleaning systems do not use any chemicals or scrubbing action, making them environmentally friendly and ensuring minimal wear on the net.

The large net cleaners can be operated automatically by two persons using a crane, winch, cap stand or as an integrated option on a ROV (Remotely Operated Vehicle). The smallest net cleaners can easily be operated from the cage edge by a single person. Larger net cleaning frames are delivered with cameras and recording systems, providing full overview over the cleaning process, and making it possible to inspect the net during the cleaning process.

All our net cleaning products are produced according to these standards and procedures:

- ISO-EN 12100 Part 1&2: Safety of machinery
- EC-Directive 98/37/EC: Machinery Directive
- EC-Directive 97/23/EC: Pressure Equipment

Gasoline, diesel or hydraulic driven net cleaners

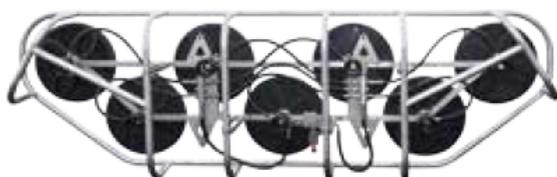
AKVA group offers a rugged series of high pressure washers for seawater, suited for various system solutions and cage sizes.

The gasoline net cleaners are light-weight and perfect as portable units.

The diesel net cleaners are almost maintenance free, use less fuel than the gasoline models and are well suited for large, powerful, permanent installations.

The hydraulic net cleaners are small, compact and almost maintenance free, perfect for below deck installations in service boats.

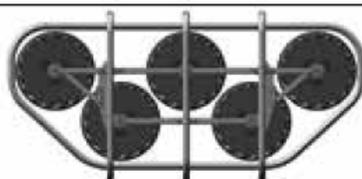
Net cleaning frames



• 270 cm



• 270 cm



• 180 cm



• 180 cm



• 90 cm

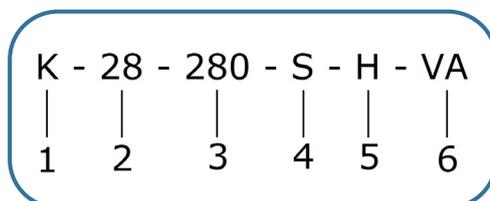


• 30 cm (modell med skaft)

The Idema Heavy Duty Cleaning discs are equipped with stainless steel frames. The discs have a rotation speed from 750-1500 rpm.

2.3.1 Model description

All high pressure net cleaners delivered by AKVA group have a uniform model description. The description contains information about machinery, capacity and function. Example:



1 K = Cold water, V = Hot water

2 Liter water per minute

3 Water pressure (bar)

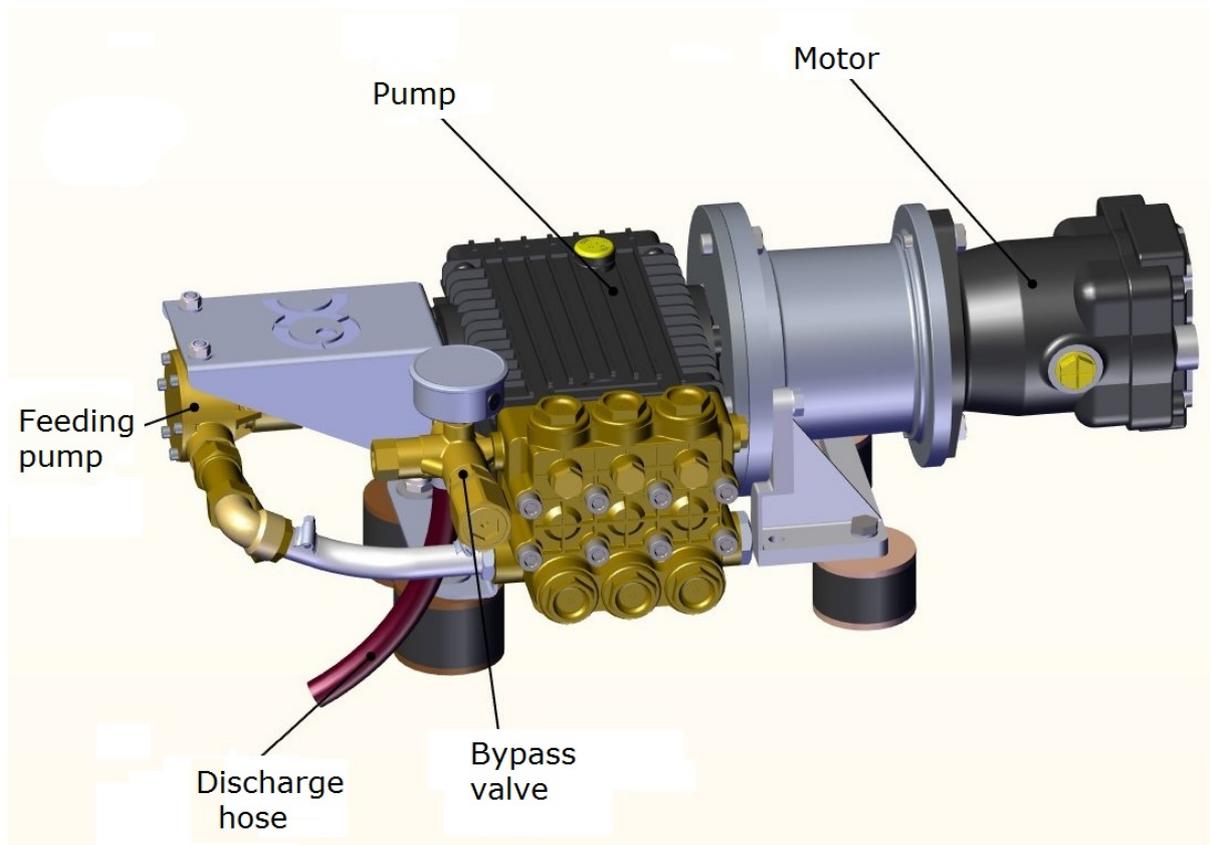
4 Water supply: S = Integrated suction pump
X = Without suction pump

5 Motor type: H = Hydraulic
B = Gasoline
E = Electro
D = Diesel

6 Motor fabrication: CO = Comer
VA = Vanguard
HO = Honda
HZ = Hatz
IV = Iveco
JD = John Deere
SU = Sunfarb

7 Volume/effect: B og D - effect in Hp
E - effect in kW
H - Vol.=ccm/rev

3 The net cleaner main components



3.1 Specifications: engine and pump

Engine: Comer 34ccm

Pump: T 2530, 1750rpm



For further information on engine and pump, see their respective user manuals

4 Installation



All who are working with or by a net cleaner have to read and understand the content of this manual before using it, and all tasks and safety instructions must be followed as described in this manual



High pressure water represents severe forces. Therefore, it is important that critical components are inspected and tested regularly



The predetermined level of pressure in bypass valves must never be changed



Before every use, oil level in motor, gear and pump must be controlled according to the instructions in this chapter

Hydraulic Net Cleaners are installed on or below deck in a boat. It requires a flat foundation sized around 50cm x 100cm.

The intake in the bottom of the boat has to be minimum 1" and the hose from this intake to the filter has to be minimum 3/4". Hose between filter and suction pump has to be minimum 3/4".

A 1/2" hose is needed between the bypass valve (VB350) and the deck pipe sleeve. Further to the hose reel, a minimum 15millim or 1/2" hose or a pipe is used.

From the bypass valves and over the pressure barrel (VB350), use a minimum 1/2" hose mounted to the end of the boat and over board.

Oil requirement: 60liters/150bar

Inlet: Inlet is at gate B 3/4" bsp.

Leak oil (to tank) 1/2" bsp.

5 Before use



All personnel working with or by a net cleaner have to read and understand the content of this manual before using it, and all tasks and safety instructions must be followed as described in this manual



High pressure water represents severe forces. Therefore, it is important that critical components are inspected and tested regularly



The predetermined level of pressure in bypass valves must never be changed



Before using this net cleaner, always make sure that it stands steadily, and if necessary is fastened to the surface to prevent slipping and damaging other equipment or hurting personnel



Before every use, oil level in motor, gear and pump must be controlled according to the instructions in this chapter

5.1 General precautions

Show great caution when using any high pressure equipment. These systems generate severe forces and may cause damages to personnel and other equipment if used incorrectly. Regular control and maintenance is required to ensure safest possible use and as long lifetime as possible.

Reading every safety, user and maintenance instructions before using the equipment will reduce risks of personnel injuries and damages to the net cleaner and other equipment.

Bypass valves are set to open for water flow when the pressure inside the system exceeds the predetermined level. If this is not in order, the high pressure may cause serious consequences for both equipment and personnel.

5.2 Remove transport plug

When net cleaners are transported, gear and pump are plugged with a special transport plug to prevent oil leaking. The net cleaners are not ment to be operated with transport plugs.

If transport plug, red top, is installed in gear or pump when receiving the net cleaner, remove these, and replace with normal yellow top or dip stick top. Keep the red tops for potential transport later.

Remove this:



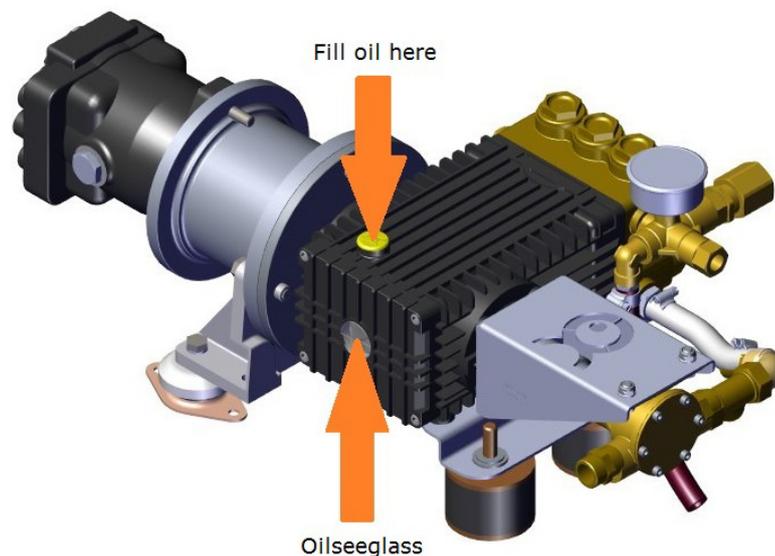
Attach this:



5.3 Check oil

The motor is connected to a hydraulic installation and will be lubricated by this. Any refill needed will be alerted or checked through this system.

The illustration below shows where to check and fill pump oil. The oil must cover half the oil see glass before starting up.



5.4 Bypass/safety valve



The predetermined pressure inside the safety valve must never be changed.

One or more safety valves are placed on all high pressure equipment to ensure that the pressure inside the system does not exceed the highest bearable pressure for any of the components. The safety valve is set to open up for the water pressure if this exceeds the predetermined level. If a safety valve is out of order, the high pressure may cause severe damage to both equipment and personnel, it is therefore very important to control these before each use. If water appears in the hoses connected to a bypass valve, something is wrong:

- Something may be wrong with the bypass valve itself. In that case, the valve must be overhauled or changed before use
- The pressure can be higher than the predetermined pressure. The most common cause of this is that one or more nozzles in the net cleaner are clogged. Check these and rinse them if they are clogged
- Check all hoses, including the ones on the net cleaning frame for bends, and straighten up if bent or twisted

Contact AKVA service personnel if the problem can not be solved according to these instructions. Contact information is found in the back of this manual.



5.5 Hoses

All hoses used with a hydraulic net cleaner must be constructed to bear the working pressure of the washer. Read the labelling on the outside of the hose and make sure that the hose pressure is higher than the net cleaner working pressure.

Hoses must to be inspected for tears or other damages before every use. If a hose is damaged, it must be replaced or repaired before use. Control all hose couplings and tighten them if they are loose.

Make sure that the suction hose is properly attached to the feeding pump, tighten the connection if it is loose. The suction hose filter, placed between bottom intake and the feeding pump, needs to be controlled visually once a month and changed when required. Remember that the suction filter has to stay under the water surface when the net cleaner is being used.

5.6 Net cleaning frame

If a disc frame is being used with the net cleaner, all hoses must be controlled. If a hose is bent, it must be straightened out, and if there are tears or other destructions, the hose must be repaired or replaced before use.

Run the system with feed pressure to check the conditions of all the nozzles. Also pistol nozzle must be controlled. Rinse clogged nozzles, and replace if damaged.

Check all hose couplings and tighten if necessary.

6 Starting and stopping

When all inspections are completed, the hydraulic net cleaner is ready to warm up. Start the system, and let it run for some minutes, until it is warm enough to be run. Do not use a hydraulic net cleaner before it is properly warmed up.



Start up procedure varies from boat to boat and from system to system. AKVA Group provides training in the specific system and boat during take-over and installation

6.1 Emergency stop and restart *(only installed in some hydraulic systems)*



**In case of emergency:
Push the emergency stop button immediately!**

Control that all of the equipment is in order before restarting the system.



**Before the system is restarted after an emergency stop,
the cause of the stop must be determined and corrected**

7 Using the high pressure washer

Use a pistol at first use, to control that the bypass valve works, and that the machine provides the correct pressure.

Procedure for control

- 1 Screw the high pressure hose to the pistol
- 2 Attach the other end to the outlet by the bypass valve of the washer. Tighten the couplings carefully.
- 3 When the engine is running with full speed, the system can perform 260-280bar with the nozzles marked 25065, or with 8 x 0,5mm and 2 x 0,6mm nozzles in the Dual Head 400HD washer.

Some standard nozzles:

Net cleaner	Nozzle
K - 18 - 280 - S - H	25040
K - 28 - 280 - S - H	25065
K - 30 - 200 - S - H	2509
K - 41 - 210 - S - H	25120
K - 60 - 300 - S - H	2 x 25065

The best nozzle for the different net cleaners varies with hose length and -diameter for the specific installations.

For specifications for your high pressure hydraulic net cleaner, and to get the best nozzle for your installation, contact AKVA group ASA Hitra.

Contact person at Hitra: Inge Strøm +47 474 62 315

8 Net cleaning frame

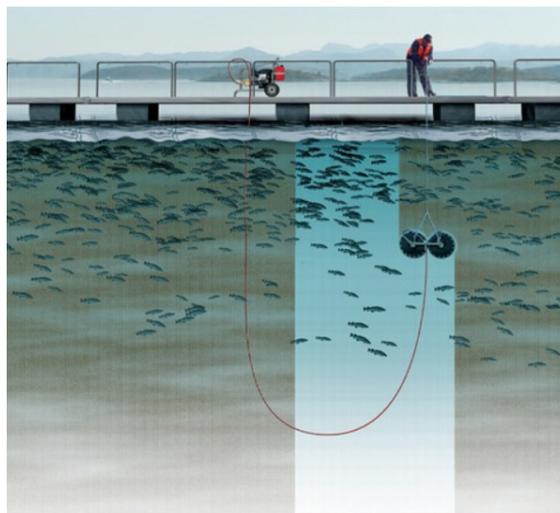


Safety equipments such as antiskid footwear and floating garments is mandatory when working on the cage edge

Attach the rope for lowering and lifting the frame to the construction via a safety hook to prevent tearing the rope.

The cleaning process is most efficient when the frame is being pulled upwards in the water. When going down in the water, the frame will not sink controlled and will therefore not be cleaning very efficiently. So, whether using crane or manual labour for cleaning nets with high pressure cleaner, lower the frame as controlled as possible to the bottom of the net. Make sure to not disturb the fish! Then raise the frame slowly and controlled for best possible result.

The frame must always be held under water when the machinery is running. When testing the nozzles, however it can be run above water, but only using feed pressure.



9 Cleaning and storage

Regularly service and well performed maintenance are factors which will prolong the net cleaner lifetime and functions. All tasks in the maintenance plan must be executed according to plan and as instructed.

By following the instructions in this manual, the equipment will always be ready for use, and this will also reduce the service costs.

9.1 After use and before storage

Avoid leaving salt water to dry off inside the system, rinse with fresh water after use to prevent corrosion and other damages caused by salt crystals on metals and other materials.

We recommend a rinse with fresh water if the washer is going to be stored for one week or more.

Also, rinsing the outside with fresh water regularly prevents corrosion on the surfaces. All moving parts, such as hinges, wheels, locks and gas regulators, must be lubricated after each fresh water rinse. Check every surface covered with enamel for scratches, and fill these with 20 lubricant to avoid further corrosion. If, before moving, the equipment is disinfected, it has to be rinsed off with fresh water, and lubricant/wax added as mentioned above.

If the system can be exposed to frost, it is important that the amount of water inside is as low as possible, but more importantly, there has to be anti-freeze liquid mixed in the water. The components can break if a large amounts of water freezes inside.

Cleaning procedures

- Keep the machinery clean, dry and in order
- Wash away any spills of oil immediately
- Do not use high pressure cleaners to clean this equipment, this can cause water intruding into the engine, pump, gear and electronics, and ruining these components
- Use a mild detergent, do not use strong degreasers
- The entire machine is inserted with protection wax in order to reduce corrosion. After cleaning the outside of the machinery, always apply a new layer of protection wax. If this wax is applied when the machine is still warm, it sticks better, and therefore stays on longer
- Before storage in cold environments, the insides of the system has to be rinsed through according to the following procedure:
 - 1 Always run fresh water through the system after use
 - 2 Mix 80 % water with 20 % antifreeze solution and run this through the system to conserve the system, to lubricate the seals and to reduce the danger of frost damages in case of storing in a below 0°C environment. If storing in colder environments, increase the amount of antifreeze solution. Check instructions on the solution bottle
 - 3 Remove the high pressure hose and the suction hose and run the system until all the water has run out. Run without water up to 10 seconds (not for longer)
 - 4 Empty the pressure hose and coil it up.

9.2 Nozzles and ejector intake

Leave net cleaning frames and high pressure pistols connected to the system during the rins through process with fresh water and/or anti freeze solution. All parts need to be rinsed through.

Control nozzles and clean if necessary:

- high pressure pistol
- net cleaner frame

Net cleaner frame ejector intakes also have to be controlled and cleaned when necessary.

Remove any filth and fouling from the discs in the net cleaning frame. Clean all sides, and especially the back side and between the discs and the plastic cover and the hubs.

10 Maintenance

10.1 Overview, pump oils

Net Cleaner	Pump	Oil	Oil amount
K-18-280-SH	W 928	10W40	1.20l
K-28-280-SH	T 2530	10W40	1.00l
K-30-200-SH	W 230	10W40	1.50l
K-41-210-SH	W 2141	10W40	1.00l

10.2 Pump

Cleaning: once a week

Check oil: every day

Change oil: First after 50h, thereafter every 100h

Function inspection: once a year

Vents, pressure gaskets and pistons: when required

10.3 Feeding pump

Impeller inspection: when required, or at least once a year

Change impeller, change bearings and gaskets: when required

Check the impeller visually, remove the cover and check visually that everything looks ok.

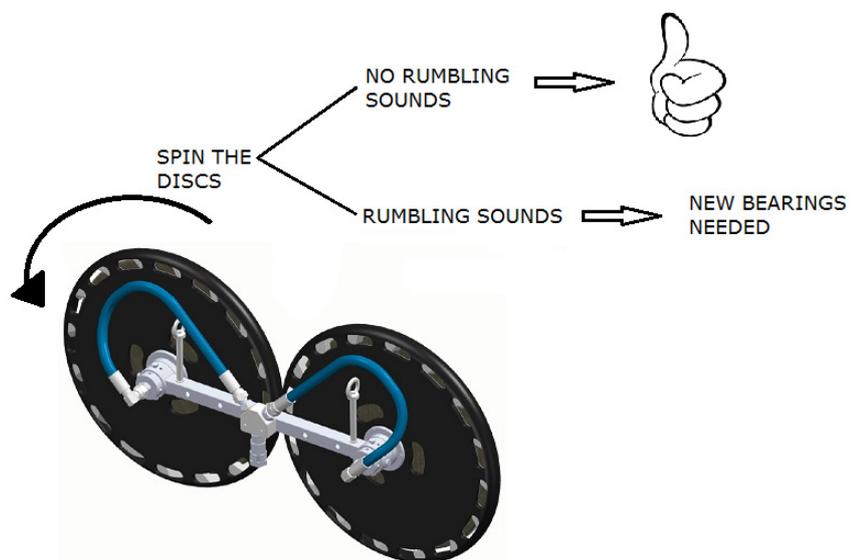
10.4 Suction filter

The sea water filter needs to be visually inspected once a month.

Clean or change when required.

10.5 Net cleaning frame

Change bearings when required. Swirl the discs and listen for rumbling sounds. If the bearings are ok, no sound will appear. Are there any noise, the bearings need to be changed.



Run the system with feeding pressure above water to control the nozzles condition. Clean or replace nozzles when required.

Hoses and hose couplings needs to be checked every six months.

10.6 First time maintenance

Parameter	Check/change after	Executed date	Executed by (signature)
Cleaning pump	1 week		
Pump oil change	50h		
Pump oil level inspection	1 day		
Function test, pump	1 year		
Cleaning sea filter	1 month		
Impeller inspection	1 year		

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C

cleaning discs 14, 15, 22, 28, 30
corrosion 9, 26, 27

D

disinfect 9, 10, 26

F

feeding pump 22, 29, 30
fresh water 8-10, 26-28
frost 26, 27

G

gaskets 8, 29

H

hose couplings 22, 24, 30

L

lubricant 8, 9, 20, 26, 27

N

nozzles 21, 22, 24, 25, 28, 30

O

oil see glass 20

P

pistol 22, 24, 28
pressure hose 24, 27

S

safety hooks 25
safety valve 10, 21
salt water 8, 9, 26
suction filter 22, 29
suction pump 8, 16, 18

W

water pressure 10, 14, 16, 21
winter storage 8, 27
working pressure 10, 22

Appendix B - Deviation form



Make copies of this form before filling anything in

Deviation no.:	
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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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