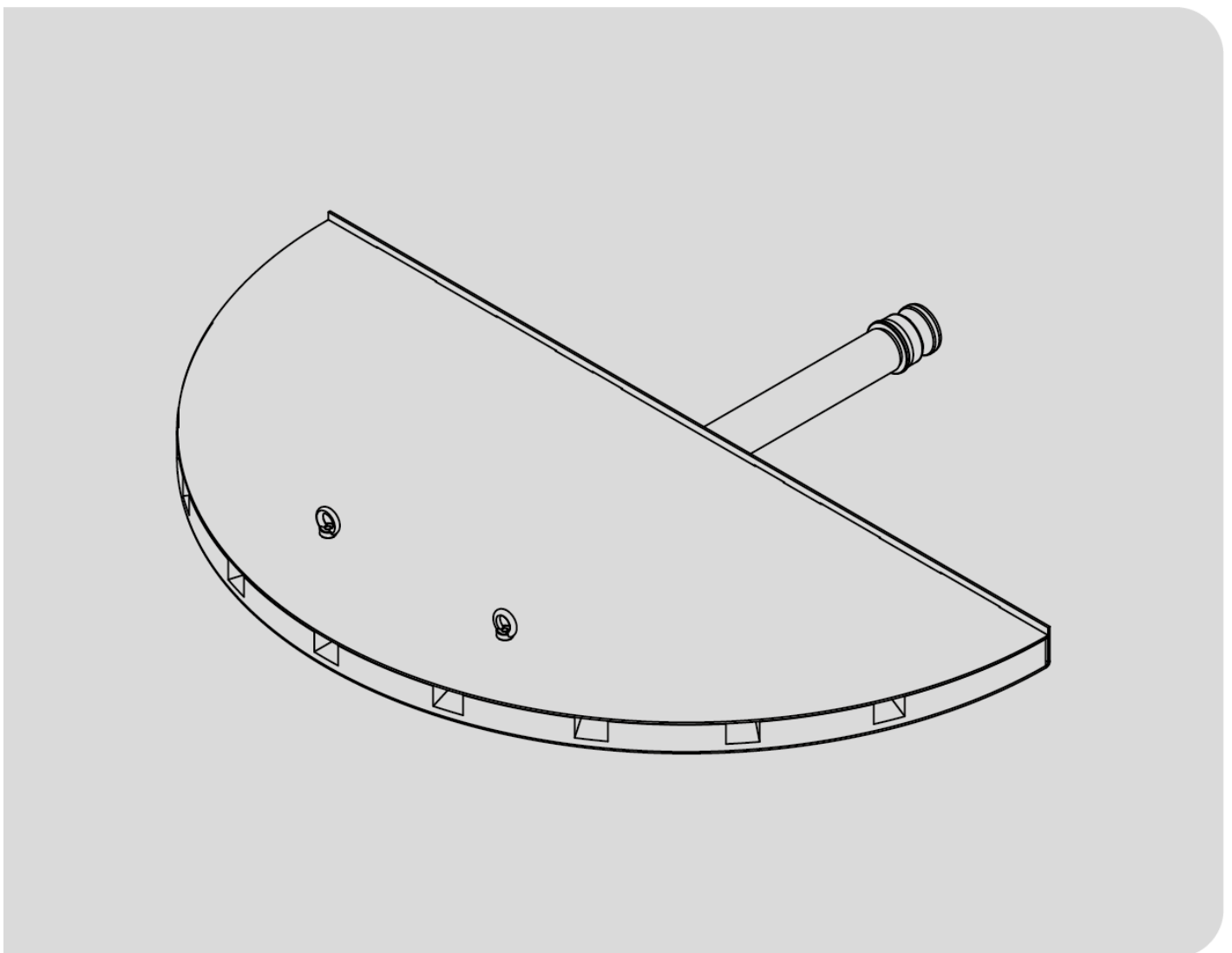


ScorLip Moon

Free-Floating, Oil Recovery Slurp Skimmer



Operation Manual

Table of Contents

1. Safety..... 5

1.1. Warning Symbols.....5

1.2. General Safety Guidelines5

1.3. Safety Devices5

2. Transportation, Lifting & Storage 6

2.1. Transportation6

2.2. Lifting6

2.3. Storage.....6

3. Proper Use 7

4. Product Information 8

4.1. Technical Specifications.....8

ScorLip Moon Surface Skimmer.....8

4.2. Unit Identification9

5. System Description & Functions 10

5.1. Skimmer Main Characteristics:10

Skimmer Main Components:10

Top Cover:.....10

Discharge Tube:.....10

5.2. Skimmer functions11

5.2.1. Weir Mouth11

5.2.2. Remote Transfer Pump.....11

6. Installation 12

6.1. General Recommendations12

6.2. Required Equipment12

7. Assembly 13

7.1. Skimmer Preparation13

7.1.1. Oil Transfer Hose Connection13

8. Operation 14

8.1. Recommended Operating Conditions14

8.2. Pre-Operation Checklist14

8.3. Operating the Equipment14

8.4. Stopping Operation.....15

9. Cleaning 16

9.1. Cleaning the skimmer frame16

9.2. Cleaning the weir 16

9.3. Cleaning the oil transfer hoses 16

9.4. Cleaning the oil transfer pump 16

10. Troubleshooting 17

1. Safety

1.1. Warning Symbols



General danger symbol



Danger due to electrical voltage

DANGER! Negligence of this warning may cause loss of life or damage to the equipment.

WARNING! Incorrect handling or use may cause personal or property damage, to the equipment, other equipment or personnel.

CAUTION! Negligence of this sign will weaken or damage the operating safety and reliability of the equipment.



NOTE! This sign indicates useful information on safe and effective product handling.

1.2. General Safety Guidelines

Safety instructions and warnings are guidelines for proper and safe use. Situational awareness is essential to promoting a safe workplace and for the safety instructions to be properly implemented.

The operator should be aware that the equipment may be dangerous if improperly used.

If the safety instructions are not carefully read, understood and complied with the equipment there may be a danger to the user.

The user must carefully read and follow the equipment instructions, as well as the operating instructions for other manufacturer's equipment incorporated into the system, before operating or servicing the equipment.

In addition to following the basic safety instructions presented in this user guide, the operator of the equipment should follow safety instructions for handling hazardous materials and follow the guidelines for worker protection (HAZWOPR, OSHA) to prevent injury, loss of life, or damage to the equipment or property.



DANGER! The correct personal protective equipment (PPE) should be worn at all times when operating the equipment. Failure to follow this protocol may result in personal injury and in some cases may result in death.



DANGER! Danger zones are present during equipment deployment and recovery and can be created by equipment movement. These areas can occur between:

- Equipment and beach
- Equipment and work platform
- Equipment and vessel
- Equipment and other equipment
- Equipment and open water

1.3. Safety Devices



DANGER! Safety devices should not be removed or from the equipment nor modified before, after or during operation. Doing so may cause injury, loss of life and/or damage to equipment or property.

DANGER! Appropriate safety devices should be used when securing, loading and transporting equipment. Failure to do so may result in injury, loss of life and/or damage to equipment or property.

2. Transportation, Lifting & Storage

2.1. Transportation

The skimmer float can be removed for ease of transportation.



CAUTION! For both transporting and storing the equipment, ensure that the hydraulic connections are protected. Do not place a heavy load on the connections or use them as lifting points.

WARNING! Always use appropriate transport and safety equipment when transporting equipment. Safety straps and proper load bearing equipment should always be used. The equipment must be properly secured while in transit and on the deployment platform to minimize movement, shifting and/or possible overturning. When standing freely, the equipment might not be sufficiently stable.

2.2. Lifting



DANGER! Never stand or work underneath suspended load.

CAUTION! To lift with a crane, always use the designated equipment lifting point (Fig. 1), along with appropriate lifting kit.



Fig. 1 – Lifting eyelets

General guidelines:

- All lifting operations must be carefully planned and appropriately supervised.
- Lifting operations should always be based on an updated and valid risk assessment.
- Use of a safety line helps accurate control of suspended loads and precise location and arrangement.
- Place and secure the skimmer onto a pallet, if forklift is required.
- Skimmer may be lifted by hand from the frame if short move is needed.

2.3. Storage

- Use the assorted storage box if available.
- Store to a dry and protected location.
- Disconnect all ancillary equipment (i.e. hoses).
- Remove the float if needed.



CAUTION! It is important that all water be removed from the equipment otherwise damage may occur.

3. Proper Use

Recommended Operating Conditions:

Air	-20°C to +70°C (-4°F to 158°F)
Water	0°C to +70°C (32°F to +158°F)
Wave Height	1m (3 ft) max



CAUTION! If the air temperature goes below 0°C (32°F), remove water from the equipment after use to prevent damage from freezing.



DANGER! Any other use of equipment besides its designated purpose may result in injury, loss of life or damage to equipment or property.



NOTE! Modifying or rebuilding equipment will invalidate all warranty terms and any and all liability clauses.



WARNING! Bigger particles such as wooden pieces, bottles etc. should be collected manually from the water before starting operation.

Don't place heavy loads on the equipment.

Do not remove oil transfer hose during operation.

Limits specified in the operating conditions, technical description and data are not to be exceeded.

Do not remove any hydraulic hoses during operation.

4. Product Information

4.1. Technical Specifications



ScorLip Moon Surface Skimmer	
Recovery Capacity	Up to 30 m³/h
Weight	12 kg
Dimensions (LxWxH)	1200 x 995 x 120 mm
Skimmer Frame	Marine Grade Aluminium
Discharge Pump	Remote
Discharge Connection (Camlock)	2" or 3"

4.2. Unit Identification

An identification plate on the equipment provides product information and identification.

- New Naval contact information
- Serial #: Equipment designated serial number
- Date: Manufacture date
- Weight (kg): Equipment weight

	New Naval Ltd. (+30) 22920-27936 2nd km Lavriou-Souniou Lavrio 195 00 Greece info@newnaval.gr www.newnaval.com
New Naval	
Serial #:	
Date:	
Weight (kg):	



NOTE! Do not remove the nameplate, as the corresponding item will not be identifiable or trackable without it.

5. System Description & Functions

The ScorLip Moon Weir Oil Skimmer is a compact and portable skimmer that utilizes a weir lip that conforms to the waterline using a wave-following design that allows the weir to recover oil off the top layer of the polluted water. The weir recovers light to medium viscosity oils. A shallow draft and micro design allow the skimmer to operate in very shallow and difficult to operate in areas while the half-moon shaped head increases the skimmers encounter rate. The system is designed for inland and nearshore operations. The versatile weir head can be operated with a pump or it can be paired with a vacuum recovery system.

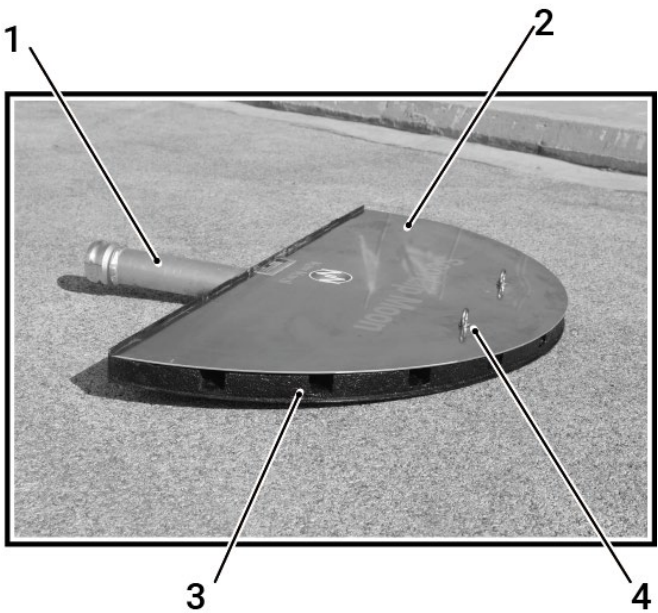
5.1. Skimmer Main Characteristics:

Class	Free-floating Weir
Type	Oil spill recovery skimmer
Recovery Method	Weir slurp skimmer
Recovery Applications	Stationary / Free-floating / Shallow waters

The basic advantages of the ScorLip Moon are the following:

- The skimmer is commonly paired with an independent, remote diaphragmatic pump or a vacuum skimmer.
- The skimmer connects to a pump or vacuum by a transfer hose with a quickly and easily secured Camlock connection.
- The skimmer is easily assembled, built for rapid deployment and allows the user a large amount of control.
- The system is built with highly durable materials resistant to oil, dispersant and seawater allowing fast, easy cleaning while decreasing the need for maintenance and improving the lifespan of the skimmer.
- The skimmer head interior can be quickly and easily accessed by opening the top allowing removal of any obstruction or debris.

Skimmer Main Components:



1	Discharge Tube with Camlock
2	Top Cover / Skimmer Frame
3	Weir Mouth
4	Lifting Eyelet

Top Cover:

The top cover is part of the skimmer’s frame which also includes the weir recovery mouth that facilitates oil recovery.

The skimmer frame also houses the transfer route.

Discharge Tube:

The oil outlet of the system.

Lifting Eyelet:

The designated lifting interface.

Weir Mouth:

Oil collection points.

5.2. Skimmer functions

5.2.1. Weir Mouth

The weir mouth pulls oil off of the surface and then is transferred through the skimmer body and through the transfer hose.

An independent pump will provide suction/vacuum to the skimmer and in turn the weir mouth.

5.2.2. Remote Transfer Pump

The skimmer may be connected to an either positive displacement or lobe pump (recommended types).

The oil transfer pump can be connected by a transfer hose to the back side of the skimmer onto the Camlock connection.

6. Installation



DANGER! Personnel working near the water's edge should wear a personal floatation device as well as proper PPE.



WARNING! Prior to installation examine and define the operation's nature. Proper installation can improve efficiency and safety of an operation.

6.1. General Recommendations

It is strongly recommended to take the following steps through installation.

1. Examine the work site and plan a layout to set up the equipment so that is in easily deployed.
2. Place and set up any safety or containment equipment that may be necessary.
3. Identify any potential safety risks or factors that may be debilitate the operation.
4. Transport the equipment to the working site.
5. Place the storage receptacle in a location that the transfer hoses can reach but will not be a hindrance to the operation.
6. Place all ancillary equipment next to the where it will be connected to (i.e., hoses).
7. Take a moment before the assembly and make sure all operators involved understand the procedure and the safety risks at hand.

6.2. Required Equipment

- Oil Transfer Pump or Vacuum System
- Oil Transfer Hose
- Storage Receptacle for Recovered Material
- Hose Floats (optional)

7. Assembly

7.1. Skimmer Preparation

Check that the weir mouth is clear and clean of all materials.

If the system is equipped with a transfer pump, check that the oil transfer pump is correctly installed by the oil transfer hose. Refer at section

7.1.1. Oil Transfer Hose Connection

Connect the oil transfer hose to the outlet connection located on the on the transfer pipe running from the skimmer.



NOTE! Use the spiral tube for connecting between Skimmer and Pump (suction).



WARNING! Make sure the power unit is off during the connection process.

WARNING! Check connections are firm and secure.

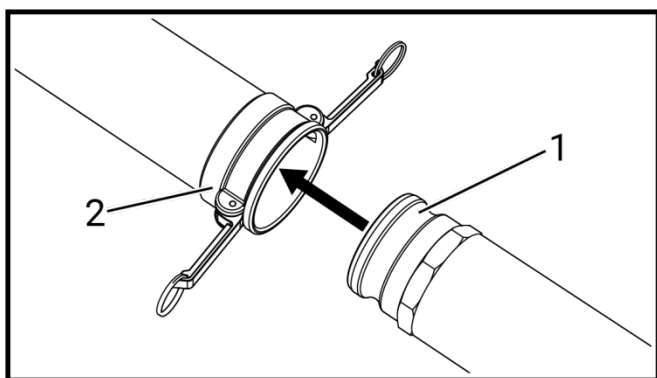


Fig. 5

Transfer hoses connections are secured via 2" Camlocks. Push the male connector (Fig. 17 – 1) into the female connector (Fig. 17 – 2).

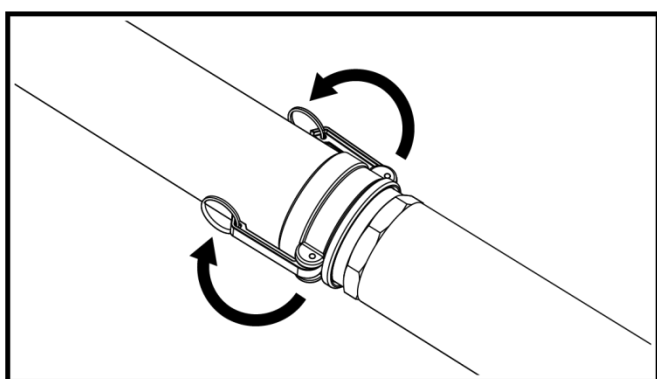


Fig. 6

Secure the connection by rotating flat the levers on each side of the female coupling. Lock the fasteners in place by installing the securing pin on the outer side of the lever hinge.

8. Operation



DANGER! All personnel should use fully approved PPE during operation of the equipment.

8.1. Recommended Operating Conditions



CAUTION! Below 0°C (32°F), remove water from the equipment after use to prevent damage from freezing.

Ideal conditions for equipment usage are:

Air Temp. -20°C to +70°C (-4°F to 158°F)

Water Temp. 0°C to +70°C (32°F to +158°F)

Wave Height 1m (3 feet) (max.)

8.2. Pre-Operation Checklist

Prior to start of operation take the following steps for preparation of the equipment:

1. Check that the weir mouth is correctly positioned.
2. Check that the Camlock connection is secure.
3. Check that the top cover is installed and secured.
4. Connect the oil transfer hose connected to the Camlock/pump to a tank (or similar storage unit).
5. Check that the pump or vacuum system is readied and functioning properly.
6. Engage the hydraulics to the pump/vacuum and check that the system is running properly. Stop the hydraulics.
7. If the skimmer will be moved by mechanical means connect the proper lifting gear to the skimmer.
8. Lift or move the skimmer to the deployment location.

8.3. Operating the Equipment

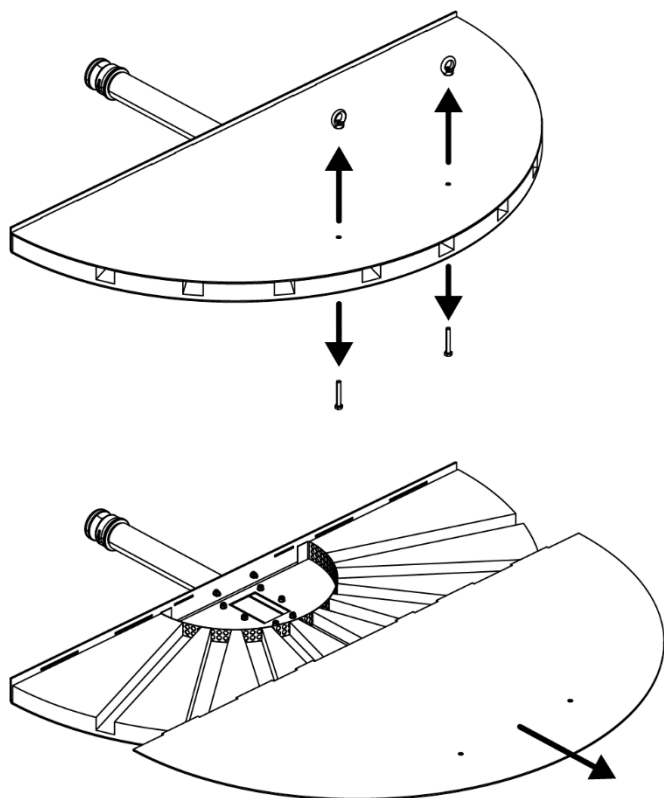


WARNING! If the skimmer becomes clogged due to debris, stop the power unit and the pump and stop all operations before recovering the skimmer and addressing the problem.

To begin operations:

1. Deploy the skimmer close to the area of oil to be recovered. Use proper lifting gear and a crane, or deploy by hand from a safe work area utilizing the proper PPE.
2. The skimmer can be moved in the operation area by a crane, rope or a control stick within the limits of the hose length. Watch out the oil transfer hose as the skimmer is deployed.
3. Engage the remote pump.
4. Adjust the speed of the pump (please check the pump's operation manual for safety and operating instructions). The pump speed depends on the thickness of the oil layer that will be recovered. In most cases when recovering thicker oil, the pump will need to be run at lower rpms and vice versa for lighter oil.
5. The skimmer should sit in the water at an effective position so that the weir lip sits on the surface of the water.
6. When the skimmer is in position to recover oil and pump speeds have been adjusted properly, the weir system will allow oil to enter into the collection hopper and pump will now run to induce a slight current into the weir recovery area, and also transfer recovered oil.
7. Now that the skimmer is in position to recover oil and pump speed has been adjusted properly, the skimmer and pump will now run in unison collecting and recovering oil.

If the skimmer becomes clogged due to debris or blockage or the collection hopper becomes blocked:



1. Shut the power off.
2. Recover the skimmer.
3. Remove the lifting eyelets by unscrewing the bottom bolts.
4. Slide out the top cover
5. Remove any debris/blockage that may be inhibiting flow or clogging the collection hopper.
6. Reposition the top cover. Ensure it is inserted to the frame's slots properly. Place and tighten the bolts and eyelets.
7. Deploy the skimmer back to the area of operation.
8. Restart the power unit and resume recovery operations.

8.4. Stopping Operation

When stopping the operation, recover as much material as possible from the skimmer collection hopper before recovering the equipment.

To terminate the operation:

1. Lift the skimmer out of the water and let the oil transfer pump run for a few minutes to empty the collection hopper of recovered oil
2. Recover the skimmer to the deployment/work area.
Proper contamination containment measures

should be used to prevent oil contamination and protect work areas.

3. Disconnect the oil transfer hoses and connect both ends together to avoid unnecessary contamination.
4. Begin cleaning operations of the equipment or transport the equipment to a suitable place for cleaning. Reverse the assembly procedure before storage.



WARNING! Do not remove any hydraulic or transfer hoses while the system is still operative.

9. Cleaning

If needed clean the pump case the motor and the frame with warm water and suitable solvent.



WARNING! Always use appropriate PPE like protective clothing and gloves. Cleaning without adequate personal protection may lead to oil exposure, which imposes hazards to the operator's health.



CAUTION! Use only fresh water to rinse equipment. If needed use only mild detergents. Harsh or abrasive clean chemicals may deteriorate or even damage parts of the equipment.



CAUTION! Contain and recover solvent/oil/water residues after clean-up and properly dispose of them.

9.1. Cleaning the skimmer frame

Rinse the aluminium frame with fresh water with mild temperature, to wash off salt sea water.

If frame is oiled use mild detergents and lukewarm water (max temperature +50°C/120°F).

9.2. Cleaning the weir

To clean the skimmer's interiors run fresh water through the system.

9.3. Cleaning the oil transfer hoses

Inject fresh water or mild detergent solution inside the hoses. Flush thoroughly.

9.4. Cleaning the oil transfer pump

Fill the pump with solvent solution and then start the motor. Keep pump at low speed while water and solvent is being filled into the pump.

When the pump is clean run the pump to remove excess water. Turn the pump off and open drain valves if applicable.

10. Troubleshooting

	Problem	Possible Solution
1.	No oil is being recovered	Check the skimmer mouth is appropriately placed on the water's surface
		Check the oil transfer hose connection to the Camlock
		Check that the transfer pump is running properly
2.	Skimmer overflows with oil	The pump may not be working – restart the pump (refer to the operation manual if necessary).
		The oil collection channel is blocked. Clear and clean the channel.
		The oil transfer hose is blocked – remove the blockage or change the hose.
		Not proper type of pump used – Ensure positive displacement or lobe pump is used.
		Air entrapment on the pump feeding line – Flush the transfer line with water to remove air locks.

New Naval Ltd.

2nd km Lavriou-Souniou

Lavrio 195 00, Greece

(+30) 22920-27936

info@newnaval.gr

www.newnaval.gr



New Naval