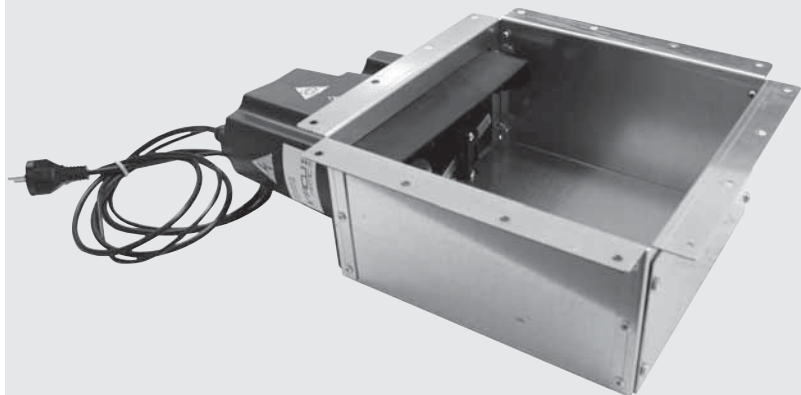




F U O C O E P A S S I O N E

ASSEMBLY, USE AND
MAINTENANCE MANUAL

MOTORIZED SUCTION
CASE





Klover Line

MOTORIZED SUCTION CASE INDEX

INSTRUCTION MANUAL

- Type: suction system for solid fuel boilers
- Model: Motorized suction case
- Revision: 1.0.3

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1 INTRODUCTION

Dear customer,
the manufacturer would firstly like to thank you for the choice you made in buying an Klover product, whose technical features will certainly meet Your needs.

Our products have been designed and manufactured in total compliance with the current regulations, by choosing the best materials to obtain durability and ease of use of the product.

We ask you, therefore, to read this manual carefully and completely, following strictly the instructions contained herein.

1.1 Use of this manual

The instruction manual is a document drawn up by the manufacturer and is part of the product: it integrates the specific rules of application and general rules for people, animals and objects safety. In the event that the product is resold, handed over, rented or sold to others, it must always be accompanied by this manual; therefore, it is recommended to use and keep it with care for the entire operative life of the product.

The main objective of this manual is to make known the proper and safe way to use the equipment. No part of this manual may be reproduced, copied, or shared in any way, without the written permission of the manufacturer.

The manufacturer reserves the right to make improvements or modifications to this manual and to the equipment at any time, without obligation to advise third parties.

2 SAFETY FEATURES

2006-42-CE

2014-35-UE (VLD)

2014-30-UE (EMC)

2.1 Warnings

- Do not use the machine for any improper use.
- Do not let children near the machine.
- This unit must not be used by people (including children) with reduced physical, sensory or mental capabilities, or with lack of experience and knowledge, unless they are supervised or instructed in the use of the unit by a person responsible for their safety.
- Use only original spare parts.
- Do not put parts of the body into contact with the machine before having removed the electrical power.
- Disconnect the power supply when a long period of inactivity is expected.

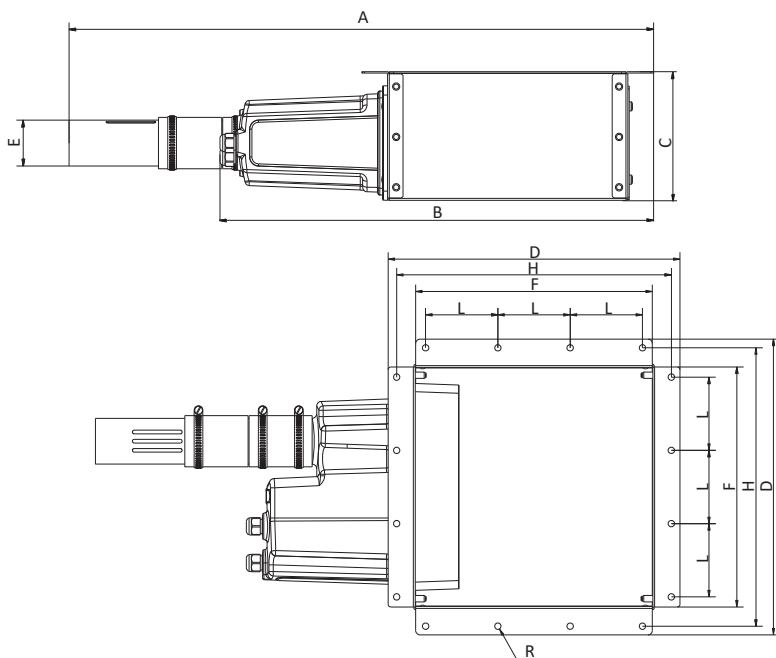
The manufacturer declines any liability or guarantee, if the buyer or anyone makes changes or even minor modifications to the purchased product.

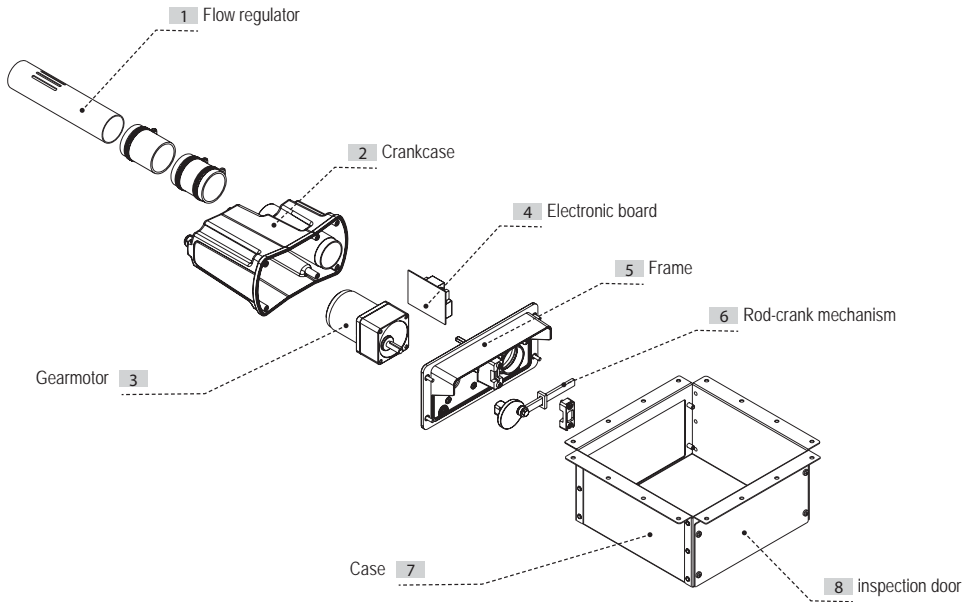
3 TECHNICAL DATA, EXPLODED VIEW DRAWINGS AND DIMENSIONS

Article		PVS.BOX. ST460
IP protection degree	IP	40
Operating temperature min/max	°C	0 ÷ 40
Degree of humidity min/max	%	30 ÷ 95
Power supply	V ac	230
Frequency	Hz	50
Motor power	W	15
Max absorption	A	0,14
Fuse		5x20 T2A
Insulation class		1
Revolutions per minute	rpm	12
Rated torque	Nm	5
Weight	Kg	7,5
Measurement A	mm	647
Measurement B	mm	480
Measurement C	mm	140,5
Measurement D	mm	323
Measurement E	∅ mm	50 M

Flange connection measurements		
Measurement F	mm	262
Measurement H	mm	304
Measurement L	mm	80
Measurement R	∅ mm	7

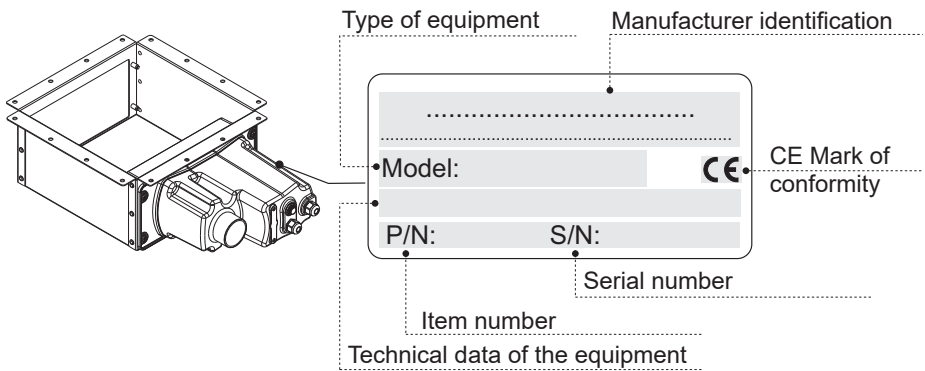
English





3.1 Identification plate

Do not remove or damage the identification plate.



3.2 Safety symbols

**DANGER OF VOLTAGE OR ELECTRICAL CURRENT****Danger of serious personal injuries.**

During maintenance operations, always disconnect the power supply and make sure that it cannot be restored.

**DANGER OF CUTTING****Danger of serious personal injuries.**

During maintenance operations, always disconnect the power supply and make sure that it cannot be restored.

**DANGER OF AUTOMATIC STARTING****Danger of serious personal injuries.**

During maintenance operations, always disconnect the power supply and make sure that it cannot be restored.

**DANGER FOR THE HAND WHEN THE SCREW CONVEYOR IS IN OPERATION****DANGER OF SERIOUS PERSONAL INJURIES.**

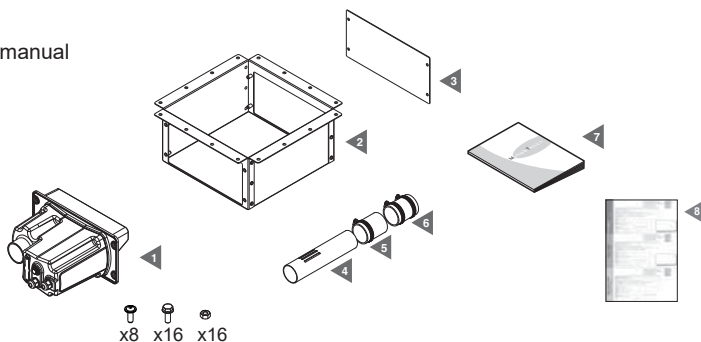
During maintenance operations, always disconnect the power supply and make sure that it cannot be restored.

It is recommended to pay full attention to pictograms and warnings of danger and prohibition in the present different parts of the equipment: if not respected, hazardous situations may occur.

4 PACKAGING CONTENT

After opening the packaging, verify that the material contained in it conforms to the following list:

- 1) motorized suction case extraction system
- 2) case
- 3) inspection door
- 4) Flow regulator
- 5) n°2 gum sleeves
- 6) n°3 hose clamps
- 7) use and maintenance manual
- 8) warranty form



Check that the product corresponds to the one ordered and that no transportation damage is evident. Should this not be the case, please contact immediately the seller.

5 PROPER USE OF THE PRODUCT

The motorized suction case has been designed to be installed for the pneumatic transport of pellets or other biomass fuels with a medium-fine size;
it has the task of extracting the fuel from the bottom of any hopper tank.

This product is suitable for the extraction of biomass fuel such as pellets, olive pomace, wood chips, crushed shells of dried fruit, corn, but it cannot work with fuels having a very fine size, or having excessive dimensions and, in any case, having lengths over 40 mm or diameter greater than 15 mm.

It is recommended to use only ENplus A1 certified pellet.

To provide the job for which it was designed, the motorized suction case must be connected to Pellet suction engine (art. PVS.PELLE.T.ENGINE).

The motorized suction case is complete with the fuel collection case to be applied at the lowest point of the tank, with the provided flange; the metal case is equipped with an inspection door on the opposite side of the motor housing. The metal case is not designed to hold the possible weight of the storage tank, so it should be avoided that it is grounded especially when the tank is loaded.

Once installed and connected, the motorized suction case extracts the fuel until the tank is completely empty; by the movement of the rod-crank mechanism positioned in front of the suction inlet, a possible blockage or clogging of the inlet itself because of slags or irregular dimensions of the fuel is avoided.

5.1 Characteristics of the storage tank

The application of the motorized suction case must be made at the lowest point of the hopper part of the tank. Tanks can be constructed in any form, size, and material.

The hopper walls must be all connected at the point where the case is installed, so the warehouse will be able to be completely empty.

Please remember that for a good sliding of solid fuels, the hopper walls of the tank must have a tilt of about 45°.

6 INSTALLATION

It is the installer's responsibility to verify the presence of any risk of danger in the installation area and to determine the suitability in accordance with both the applicable laws and the product characteristics described in this manual.

The installer must also comply with the requirements of this manual as well as inform the user of the operation and maintenance of the installed products and report any dangers related to their use.

It is necessary to leave a free space of adequate size all around the product, in order to permit any repair, maintenance or inspection operation.

It is also indispensable to place a shutter available in the Klover catalog (article PVS.SHR.ST460), which, when closed, separates the fuel in the tank from motorized suction case itself, in order to facilitate inspections, maintenance and repairs on the internal parts.

6.1 Instructions for the installation of Klover systems

Consider that in the Klover plant exist two types of piping network divides in:

- Stretches where there is only air (with positive or negative pressure)
 - Stretches where there are air plus fuel
- It is intuitive to understand that the transport of the fuel requires more attention and the use of specific technical precautions.

Note that the length allowed and described on our manuals and catalogues are approximately, written considering straight stretches, with the minimum change of direction.

It is always recommended to take into account these notes:

- The maximum total length allowed for the pipe network is 25m
- In case of double pipes system, the maximum length of the pipe which returns to the storage tank is to be deducted to the total length (25 m) and in any case it must not exceed 10 m
- Please avoid tight curves and, in general, winding paths
- Avoid positive and negative siphons
- Avoid unlevelled horizontal paths
- Avoid verticals sections longer than 3,5m
- Every change of direction imply a decrease of the maximum available length of about 0,3 m
- Every meter of pipe placed vertically implies a reduction of 2 m of the maximum available length

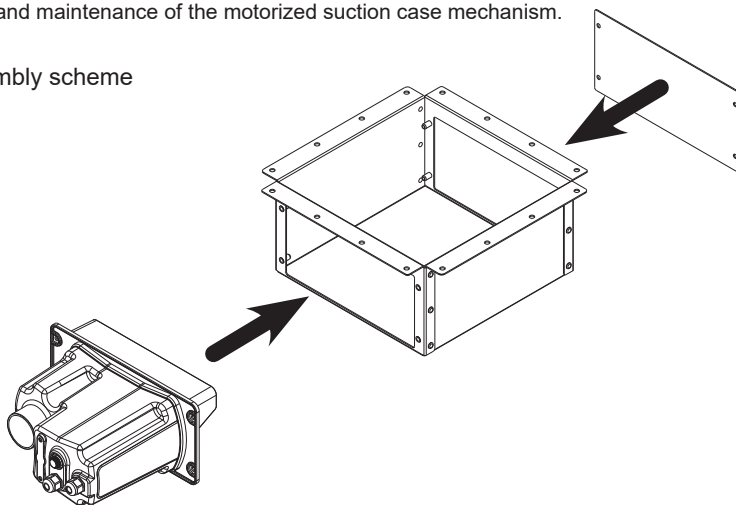
- The gap between the storage tank and the boiler cannot exceed 7 m
 - It is essential to make gentle elbows, especially at the base of the vertical lines
- It is recommended to use only pipes, junctions and accessories present in the Klover catalogue, as they have been researched, designed and built expressly for this equipment.
- Before installing and putting into service the Klover equipment, a careful reading of the supplied instructions is recommended. In any case of doubt, please refer to qualified personnel.
- The installation of Klover systems must always comply with the safety standards corresponding to the type of premises in which they are installed.**

6.2 Positioning

The motorized suction case must first be assembled to the metal case: it must be secured with the provided screws with one of the two holes already available on both sides of the case, taking care to securely fix it with the four provided screws and to ensure that the protection is positioned above the rod-crank mechanism.

The sheet inspection door should be applied on the other side of the case and it will be used for eventual repairs and maintenance of the motorized suction case mechanism.

Assembly scheme

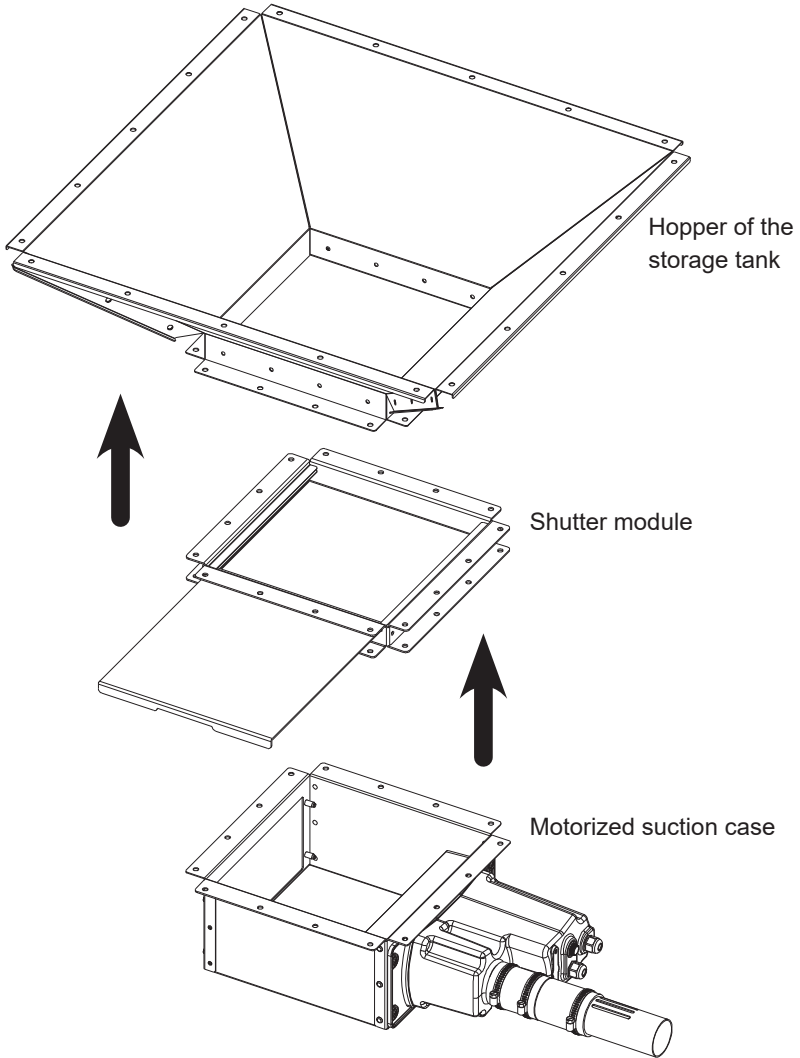


The case thus assembled must then be securely fastened to the bottom of the hopper tank using the supplied sixteen screws with nut.

The case is not designed to hold the possible weight of the storage tank, so it should be avoided that it is grounded especially when the tank is loaded.

Remember that to remove the motorized suction case or to open the inspection door avoiding that the fuel contained in the tank goes out, a separation shutter between the storage tank and the case must always be installed: it can be closed whenever necessary, for the purpose can be useful our shutter module (art.PVS.SHR.ST460).

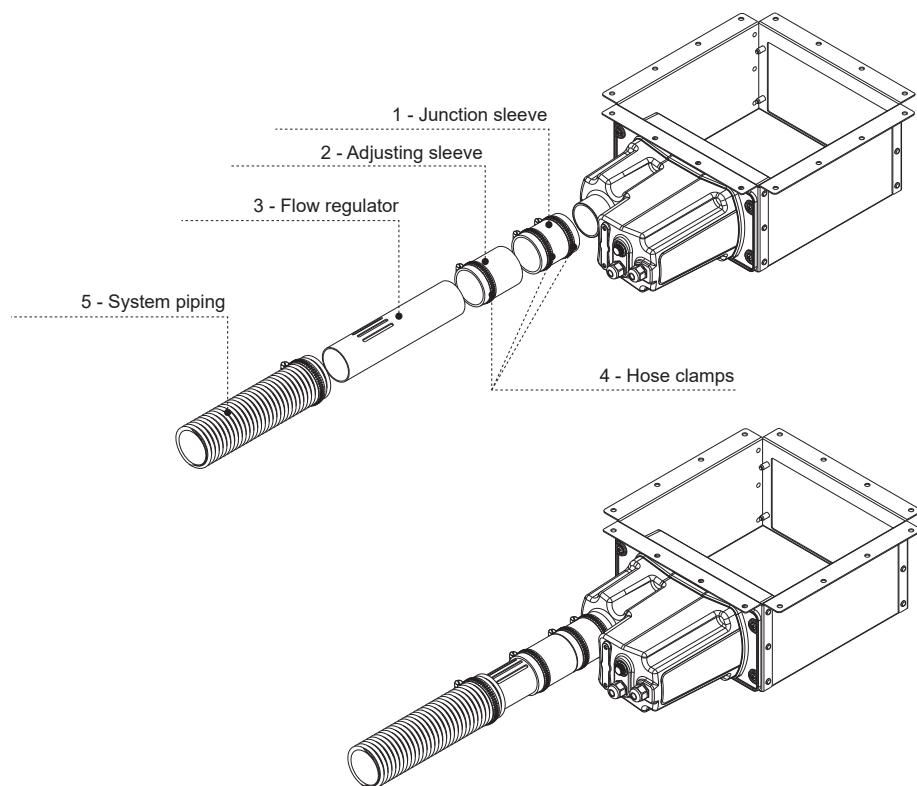
The following figure shows an example of the correct installation.



6.3 Connection to the piping network

Before connecting the fuel transport pipe, you must install the flow regulator as described in the following drawing: attach the sleeve (1) to the motorized suction case, then insert also the flow regulator (3), making sure that the cuts turn upwards and tighten the two steel clamps (4), insert the adjusting sleeve (2) on the flow regulator with the relative steel clamp (4).

At this point it is possible to connect the system, keeping in mind to use at least one \varnothing 50 mm anti-static flexible pipe section (5), which can be found in the Klover catalog (Article PVS.PIPE-D50L20).



The other end of the pipe must be connected to the rest of the fuel transport system, in particular to pellet suction engine (art. PVS.PELLET.ENGINE).

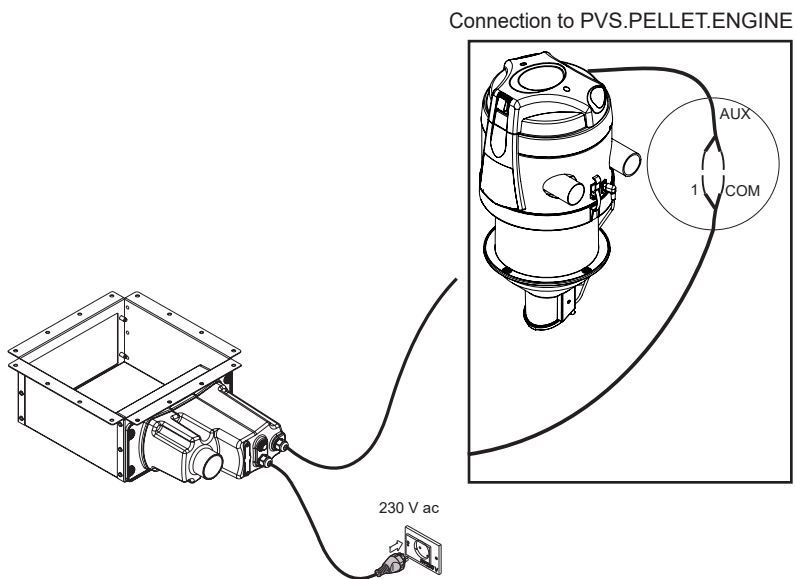
6.4 Electrical Connection

Before making the electrical connection, check that the supply voltage corresponds to the one required and that the electrical system to which the product is connected is done in compliance with current regulations.

Connect the two wires of the activation line called AUX to the corresponding AUX cable of the pellet suction engine unit (art. PVS.PELLE.T.ENGINE).

Connect the power cord to a 230 V ac power outlet.

In the event of a protection circuit breaker intervention during the operation of the motorized suction case, the polarity of the plug must be inverted (invert the phase with neutral).



7 START UP

The operation of the motorized suction case is managed by the fuel transport control system, which can be found in the Pellet Ssuction engine vacuum units (PVS.PELLE.T.ENGINE); it usually happens with a delay of about 3 seconds from the start of the system: this to allow the emptying of any remaining fuel traces in the pipes.

Thanks to the rotating system of the rod-crank mechanism, the motorized suction case avoids block formations in front of the fuel suction inlet, so the fuel can be continuously aspirated.

7.1 Switching on and use

Before putting the motorized suction case into service and filling the storage tank make sure that:

- the tubes are correctly and securely fixed
- electrical connections have been carried out according to law, as well as the electrical system to which it is connected
- the rod-crank system operates regularly
- there are no foreign bodies in the storage tank.

For the first time, just place a small amount of fuel in the storage tank and test the system.

Place the adjusting sleeve of the flow regulator so that it covers about half of the ventilation cuts; during the operating phases it will then be necessary to evaluate and adjust the amount of fuel transported, modifying the position of the sleeve.

The more ventilation cuts are discovered and the less fuel will be transported and vice versa. The amount of fuel transported must be such that it cannot accumulate too much in the transport tube and in its junctions.

After reading also the manuals of all the components of the system, you can start using the fuel transport system by following the adjustment steps described in Pellet suction engine manual.

Pellet suction engine



8 MAINTENANCE AND END-OF-LIFE

Before carrying out any maintenance operation, it is obligatory to disconnect the power supply cable from the main socket and to aerate the premises in which it is installed for at least 15 minutes.

Complex or long maintenance operations must be done out of fuel storage and heating unit premises.

Any maintenance and repair operation must be carried out by experienced personnel and authorized by the manufacturer.

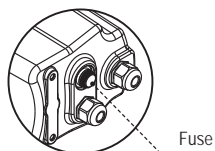
On the front of the crankcase there is the housing of the electrical parts protection fuse: to replace it, unscrew the cap and remove the old fuse replacing it with a mod. **5x20 T2A**

In the absence of a specific maintenance plan, a complete product inspection is recommended for each filling of the storage tank or at least yearly .

The checks to be carried out at least yearly are:

- Check the antistatic pipe grounding conditions and the electrical system conditions
- Check the electrical wiring condition
- Verify the flow regulator conditions
- check that the rod-crank system is free to rotate and devoid of foreign objects
- open the plastic crankcase and remove any traces of dust inside

It is also advisable to thoroughly clean the fuel storage tank at least annually, in order to avoid dust accumulation and presence of foreign bodies.



8.1 Spare parts

To guarantee longevity and optimum performance of the product, it is recommended to use only original spare parts.

DESCRIPTION	CODE
Gear motor 15 W	9900.241
Electronic board (plastic frame)	9910.604 (from 2017)
Electronic board (steel frame)	9910.202 (until 2017)
Covering carter	9900.273

8.2 End-of-life

The disposal of packaging, accessories and machine must be executed in accordance with applicable laws, ensuring the recycling of any of the core components.



9 SAFETY REQUIREMENTS FOR FUEL STORAGE TANKS**SAFETY REQUIREMENTS for
pellet storage tanks with
capacity up to 10 t**

Keep the doors closed. Access is permitted only to authorized personnel under the supervision of a person outside



Do not smoke and approach flames or other sources of ignition.



Danger of death due to high concentrations of carbon monoxide (CO) and lack of oxygen.



In the 4 weeks after the fuel filling, enter only with a CO detector.



Aerate the storage room for at least 15 minutes before entering and keep the door open during your permanence.



Ensure an adequate and permanent aeration of the storage room through vent covers, openings or fans.



Wounding risk for moving systems



Turn off the boiler at least one hour before the pellet is delivered.



Proceed to the filling according to the requirements of the boiler manufacturer and the pellet supplier.



Protect pellets from humidity



In case of fire suspect keep the front door and any other opening of the storage room close and call the firemen.

10 WARRANTY

PRODUCT LIMITED WARRANTY CONDITIONS

The Manufacturer guarantees to the original purchaser the absence of defects in material and workmanship of the product for the period stated, from the date of purchase. Except as prohibited by applicable law, this warranty is non transferable and it is limited to the original purchaser. The present warranty gives the buyer specific legal rights and the possibility to claim rights which can vary under local laws.

Read all warnings and instructions before using the product purchased.

The entire liability of the manufacturer and your exclusive remedy for any breach of warranty will be at the discretion of the Manufacturer:

(1) To repair or replace the product, or (2) refund the purchase price, provided that the product has been returned to the point of purchase, or such other place as may be specified by the manufacturer, with a copy of the sales receipt or detailed and dated receipt. The shipping and handling are not free of charge, except in cases where this is prohibited by applicable law.

To repair and replace the product, the manufacturer may, at their own discretion, use new, refurbished or used parts in good working condition. Any replacement product will be warranted for the remaining time of the original warranty period, or for any period of time that complies with the provisions of the current law.

This warranty does not cover problems or damage resulting from (1) accident, abuse, misapplication, repair, alteration or unauthorized disassembly; (2) maintenance operation, use which is not in accordance with the product instructions or connection to an improper voltage supply; or (3) use of consumables and spare parts which are not supplied by the manufacturer or authorized service center.

Valid warranty claims are generally processed through the point of purchase of the product.

Please agree this detail with the retailer where you purchased the product.

The Warranty claims that cannot be processed through the point of purchase, as well as any other product related questions, should be addressed directly to the manufacturer. Addresses and contact information for customer support can be found at the internet address www.klover.it.

Except as stated by relevant laws in force, any implied warranty or condition of merchantability or suitability for a particular purpose relating to this product is limited to the duration of the Limited Warranty period for the specific product purchased.

Some jurisdictions do not allow limitations on the duration of implied warranties or the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state, or from jurisdiction to jurisdiction.

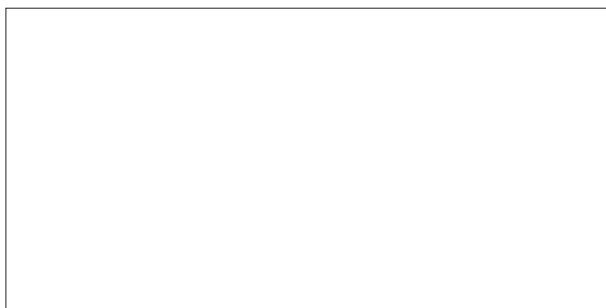
Consumers have legal rights under applicable national legislation governing the sale of consumer products. Such rights are not affected by the warranties in this Limited Warranty. No dealer, agent, or employee of the manufacturer is authorized to make any modification, extension or addition to this warranty.

11 DECLARATION OF ABSENCE OF HARMFUL SUBSTANCES

The manufacturer declares that their products and equipment are made with materials compliant with the current regulations regarding protection of health and the environment and does not contain substances classified as SVHC (Substance of Very High Concern) in accordance with Regulation EC 1907/2006 (REACH, or registration, evaluation, authorization and restriction of chemical substances).

Although in the working cycles of raw materials and our products such substances are not used, their presence in the size of p.p.m. (parts per million) cannot be excluded due to micro-pollution of raw materials.

CASSETTA ESTRAZIONE
MOTORIZED SUCTION CASE



PVS.BOX.ST460



F U O C O E P A S S I O N E

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