

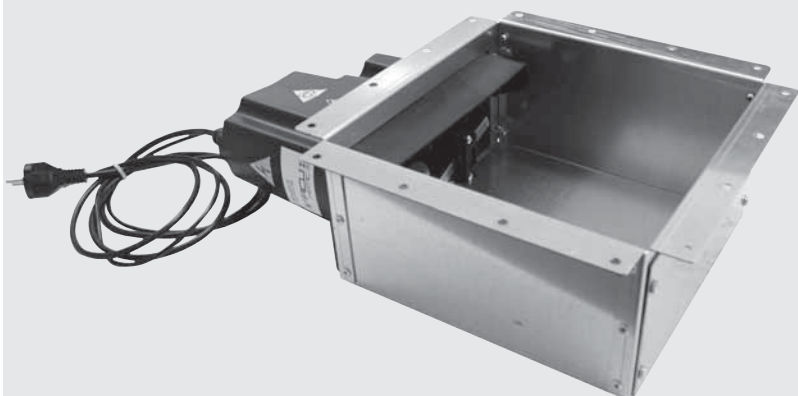
# ADVANCE

Easy Moving

## ASSEMBLY, USE AND MAINTENANCE MANUAL

Suction case with motorized nozzle

### VACU MATIC







## INSTRUCTION MANUAL

- Type: suction system for solid fuel boilers
- Model: Vacu Matic
- Revision: 1.0.6

# SUCTION CASE WITH MOTORIZED NOZZLE INDEX

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## 1 INTRODUCTION

Dear customer,  
the manufacturer would firstly like to thank you for the choice you made in buying an our 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 WARNINGS

- Do not use the product for improper uses.
- This product must not be used by children or persons without the appropriate knowledge.
- Only use original spare parts.
- In order to be able to operate the product easily, it must be installed leaving a space around it completely free of any obstructions.
- This product can be installed on pneumatic conveying systems for granular fuels derived from biomass for other uses ask your seller for advice.
- Before first ignition, check that it is carefully installed.
- Never use the structure of the product as a supporting or fixing element for any other support or equipment.
- It is essential to ventilate the room where the product is installed when loading fuel into the tank.
- Remove the inspection doors only to carry out repairs and maintenance after disconnecting the power supply.
- The manufacturer disclaims all liability or warranty if the purchaser or anyone on his behalf makes any changes or adjustments, however slight, to the product purchased.

### 2.1 Installer's responsibilities

To ensure proper operation of the product, follow these guidelines:

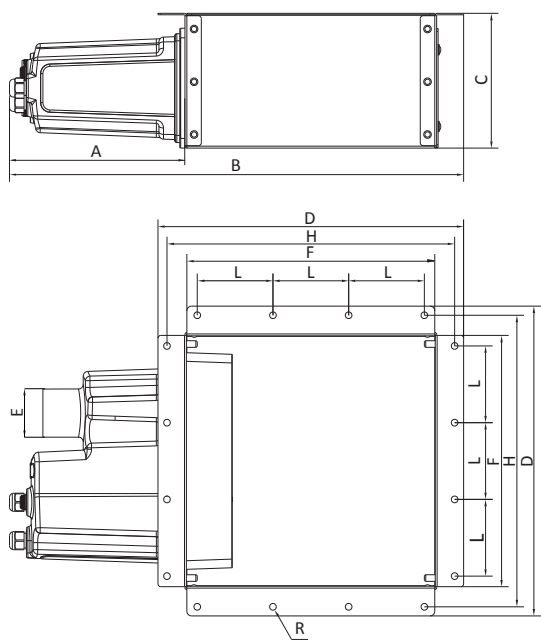
- Only perform the activities described in these instructions
- Perform all activities in accordance with applicable regulations
- Explain to the user the operation and use of the product
- Explain to the user how to maintain the product
- Report to the user the potential dangers related to the use of the product

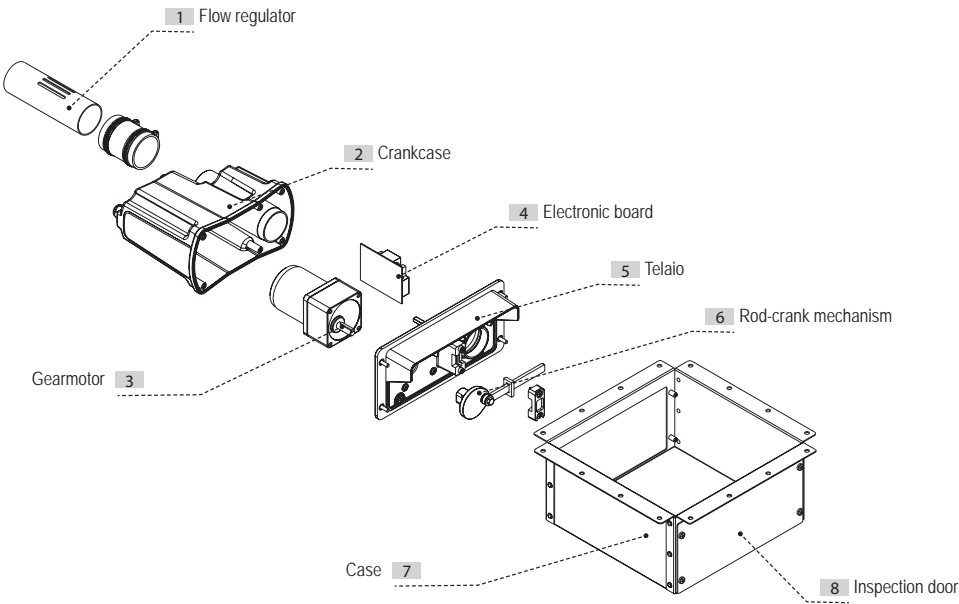
3 TECHNICAL DATA, EXPLODED VIEW DRAWINGS AND DIMENSIONS

Article		AP3400.00.06
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	185
Measurement B	mm	480
Measurement C	mm	138
Measurement E	∅ mm	50 M

Flange connection measurements		
Measurement D	mm	323
Measurement F	mm	262
Measurement H	mm	304
Measurement L	mm	80
Measurement R	∅ mm	7

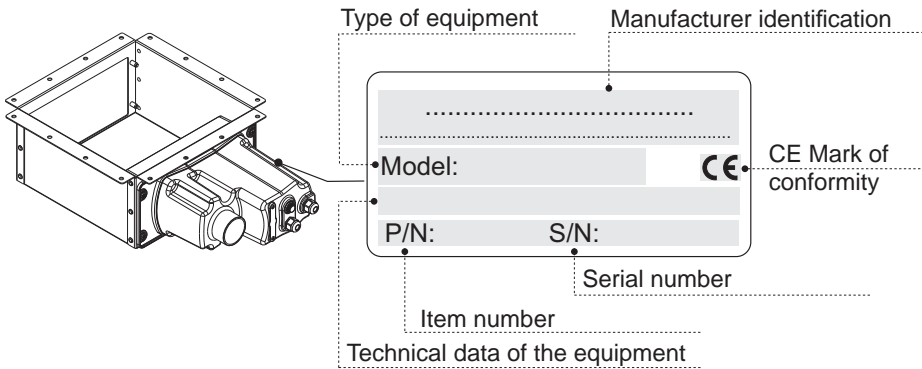
English





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.

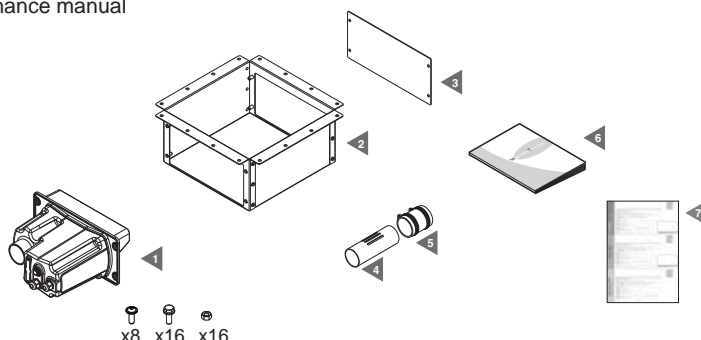
It is recommended to pay full attention to pictograms and warnings of danger and prohibition in the present different parts of the equipment: if not respected, hazardous situations may occur.

## 4 PACKAGING CONTENT

Check that the product corresponds to what was ordered and that there is no obvious damage caused by transport, otherwise notify the retailer immediately.

After opening the packaging, check that the material contained in the package is conforms to the list below:

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



## 5 PROPER USE OF THE PRODUCT

The fuel extraction system 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.**

In order to provide for fuel withdrawal the extraction system must be connected to a control panel that controls the operation of the entire pneumatic transport system or to an integrated central vacuum unit. The fuel extraction system 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 system 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 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 catalog, which, when closed, separates the fuel in the tank from product itself, in order to facilitate inspections, maintenance and repairs on the internal parts.

### 6.1 Instructions for the installation of systems

Consider that in pneumatic fuel transport systems there are two different types of pipe features:

A sections of pipes where only air and eventually dust pass through

B- sections of pipes where both air and fuel pass through

Mandatory all sections of piping through which the fuel passes must be made with PU or steel pipe and they must be connected to be antistatic.

We remind you that the lengths of the various pipe sections described in our manuals and catalogs are purely indicative: when we speak of "available length" we mean the total development of the various sections.

It is always advisable to make mainly straight and horizontal piping sections and, in any case, with the least number of changes of direction and vertical paths.

For all the sections where fuel passes, it is recommended to follow these simple rules:

the maximum length allowed for the various sections of piping depends on the components chosen for your system:

1- the maximum permissible length of the various pipe sections is always bound by the components chosen for your system, the characteristics and technical data provided for each component must always be evaluated in advance so that the system works at its best and has the required characteristics.

2- in two-pipe systems (fuel suction and air return to the silo) the limits on the lengths are generally much lower and never exceed 10 meters. With some products pipe length cannot be more than 3 meters.

3- in single-pipe systems, the maximum length allowed for the various sections of pipe, despite being limited by the components chosen for your system, is more generous, but even in these cases it is necessary to evaluate in advance the characteristics and technical data provided for each component installed.

4- paths with many curves or with very close curves should always be avoided.

5- the minimum radius of the curves must be equal to or greater than 0.5 meters.

6- sections of pipes that include both positive and negative siphons must be avoided.

7- the sections of horizontal pipes must be kept perfectly leveled.

8- vertical pipe sections longer than 3.5 meters must always be avoided and at the bases of these the minimum radius of the bends must be equal to or greater than 1 meter

9- the sections of piping where fuel passes must be well fixed at least every 1.5 meters.

10- the pipe sections may be built-in or installed under flooring, but only for very short linear traces and only by inserting them into an additional casing pipe of properly larger diameter.

It is recommended to use only pipes, fittings and accessories present in our catalog, as they have been designed, tested and built specifically for these systems.

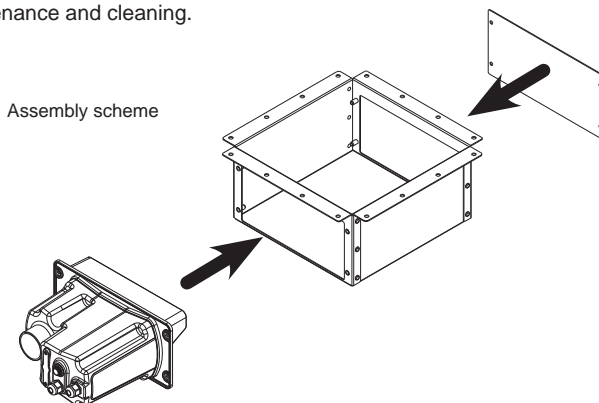
Before installation and start-up of the system, it is essential to carefully read the instructions supplied with the various components and in case of doubts it is advisable to contact specialized personnel.

**The realization of the systems and the installation of the components must always meet the safety standards corresponding to the type of rooms in which they are positioned.**

## 6.2 Positioning

The extraction system must first be assembled to the metal box: it must be fixed with the screws provided to one of the two pre-drilled holes available on two sides of the box, taking care to secure it firmly with the four screws provided.

On the other prepared side of the box, the metal box inspection door must be applied, which is useful for repairs, maintenance and cleaning.

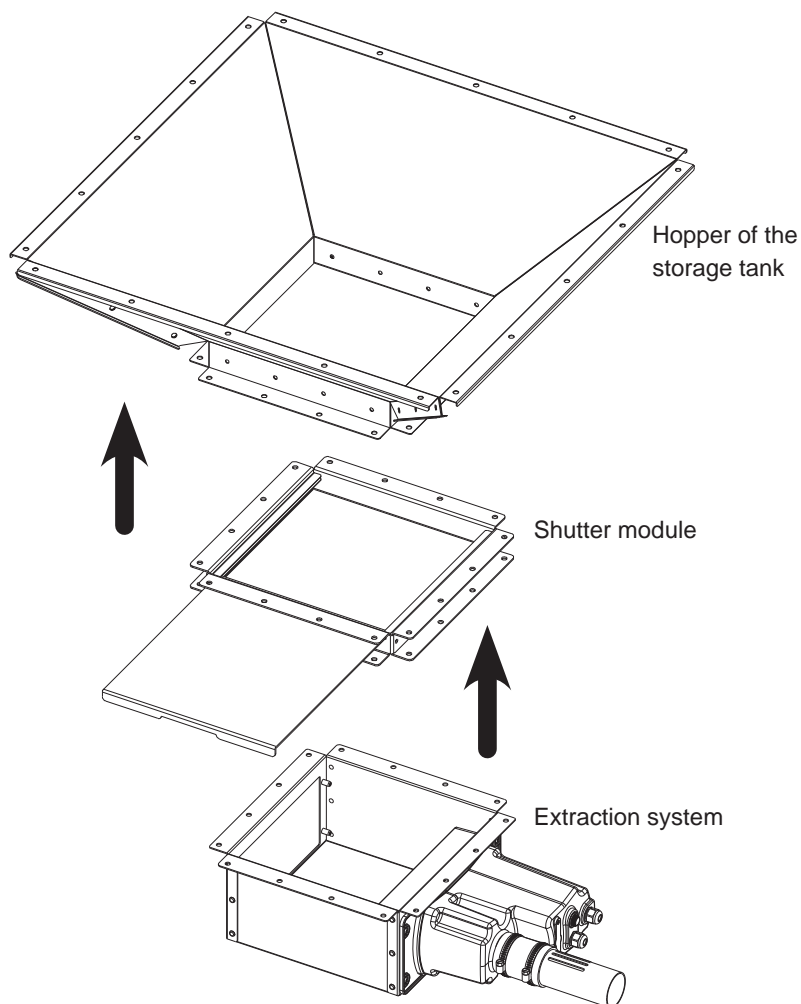


The case thus assembled must then be securely fastened to the bottom of the hopper tank using the supplied sixteen screws with nut.

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 extraction system 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.

The following figure shows an example of the correct installation.



## 6.3 Connection to the piping network

### CAUTION

**To transport fuel, use only antistatic pipes that are correctly connected to a grounding point, in order to avoid dangerous accumulation of static electricity.**

It is indispensable to connect the extraction system to the installation, use always a section of antistatic flexible hose; do not glue the system pipes directly to the extraction system outlet.

Mount the flow regulator (fluidifier) between the extraction system outlet and the flexible hose of the fuel transport system (see fig. 1)

Fix the fluidifier on the Extraction system using the joint sleeve 1 and two metal clamps, keeping the ventilation cuts facing upwards.

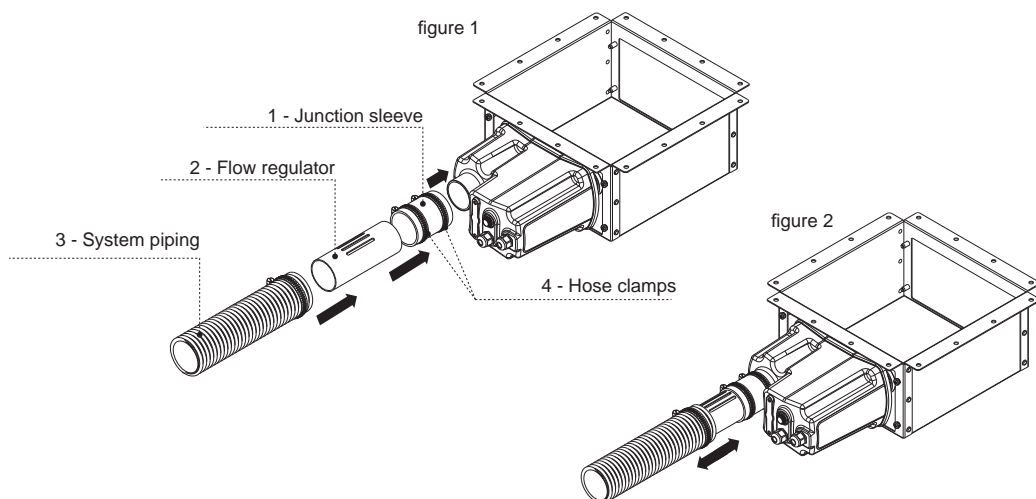
On the other side, position the flexible hose of the fuel transport system and fix it with an additional clamp. Switch on the system and adjust the amount of fuel transported, so that it is not such as to cause blockages in the system.

To proceed with this adjustment, close or open the ventilation cuts by forward or backward the regulation sleeve (see fig. 2). By closing the cuts the amount of fuel transported will increase; vice versa keeping them more open the quantity will decrease.

An excessive amount of fuel sucked in a unit of time will reduce transport times, but could lead to blockages and obstructions in specific points of the system; vice versa, reducing the fuel transported in the unit of time could bring to an unnecessary prolongation of the time required to transport the fuel.

For example, systems with a long pipes extension or with a high number of elbows, will involve less fuel transported for the same amount of time.

It may be necessary, after the first start settings, a new adjustment in the case, for example, in which the temperature, relative humidity or the physical characteristics of the transported fuel (type, specific weight, dimensions, etc ...)



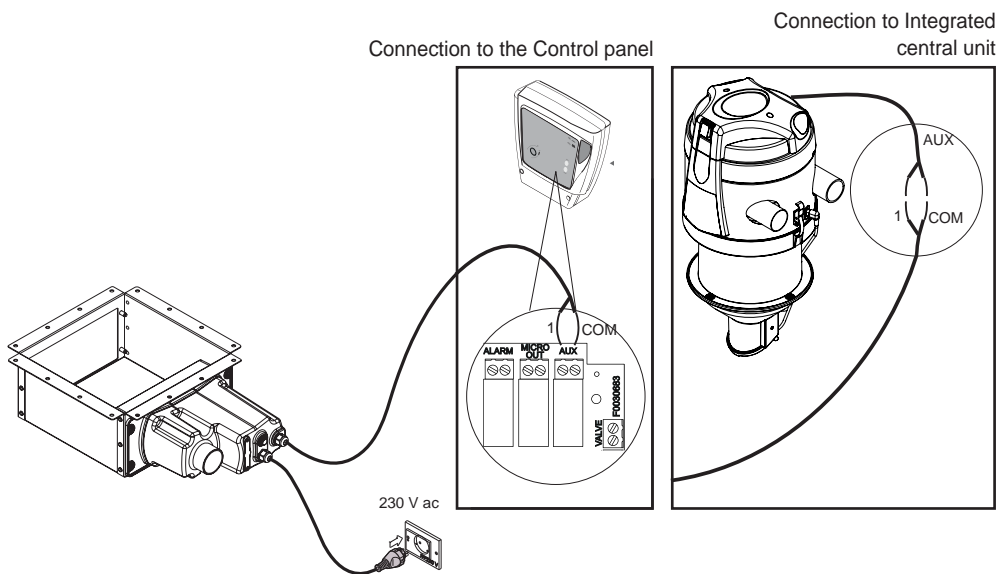
## 6.4 Electrical Connection

**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 Integrated central unit (if present) or to the corresponding terminals called AUX located inside the Drive control panel (if present).

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 Extraction system, the polarity of the plug must be inverted (invert the phase with neutral).



## 7 START UP

The operation of the Extraction system is managed by the fuel transport control system, which can be found in the Integrated central unit or in the control panels; 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 Extraction system 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 Extraction system 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 fluidifying mechanism 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 flexible hose on the flow regulator so that it covers about half of the aeration cuts, during the phases of operation will then be necessary to evaluate and adjust consequently the amount of fuel transported, changing the position of the flexible hose going to cover more or less the aeration cuts of the flow regulator. The more uncovered the aeration cuts, the less fuel will be transported and vice versa. The quantity of fuel transported must be such as to prevent it from accumulating excessively in the transport hose and its fittings.

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 Integrated central unit or Control Panel manual.

Control panel



Integrated central unit



## 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.

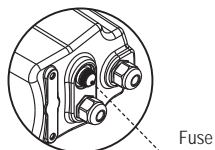
On the front of the crankcase there is the housing of the electrical parts protection fuse: to replace it, unscrew the cap and remove the old fuse replacing it with a mod. **5x20 T2A**

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
Gear motor 15 W
Electronic board (plastic frame)
Electronic board (steel frame)
Covering carter

### 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 our internet address.

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 CERTIFICATION

### **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.

### **EC declaration of conformity**

The Manufacturer declares that its products and equipment comply with the following standards:

EN ISO 12100:2010 (Risk Assessment Calculator)

EN ISO 14121-1 (Safety of machinery)

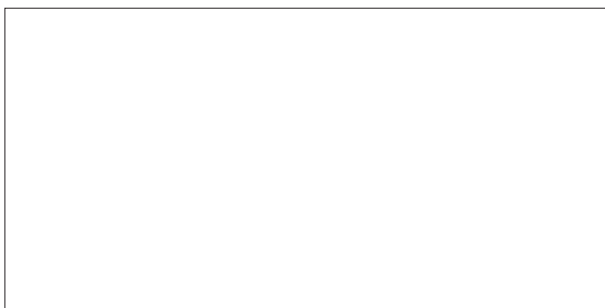
And following directives:

N° 2006-42-CE

N° 2014/35/UE (LVD)

N° 2014/30/UE (EMC)





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