

# ADVANCE

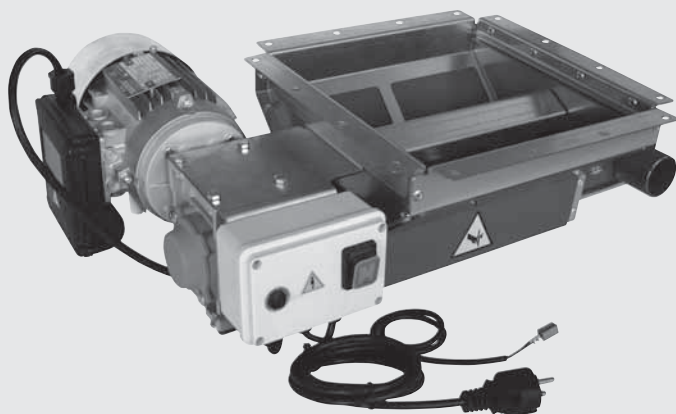
Easy Moving

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## ASSEMBLY, USE AND MAINTENANCE MANUAL

Screw extracting case

### HD MATIC







## INSTRUCTION MANUAL

- Type: feeding system for solid fuel boilers
- Model: HD Matic
- Revision 1.0.4

# HD MATIC

## SUCTION CASE

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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

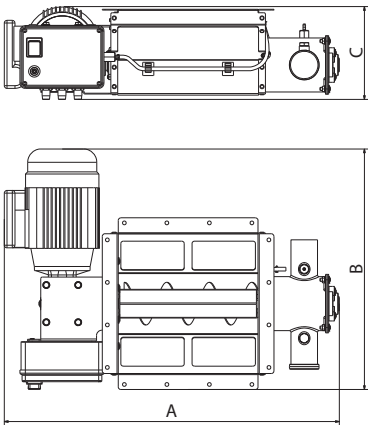
- Do not use the product for improper uses.
- This product must not be used by children or persons without the appropriate knowledge.
- Only use original spare parts.
- In order to be able to operate the product easily, it must be installed leaving a space around it completely free of any obstructions.
- 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:

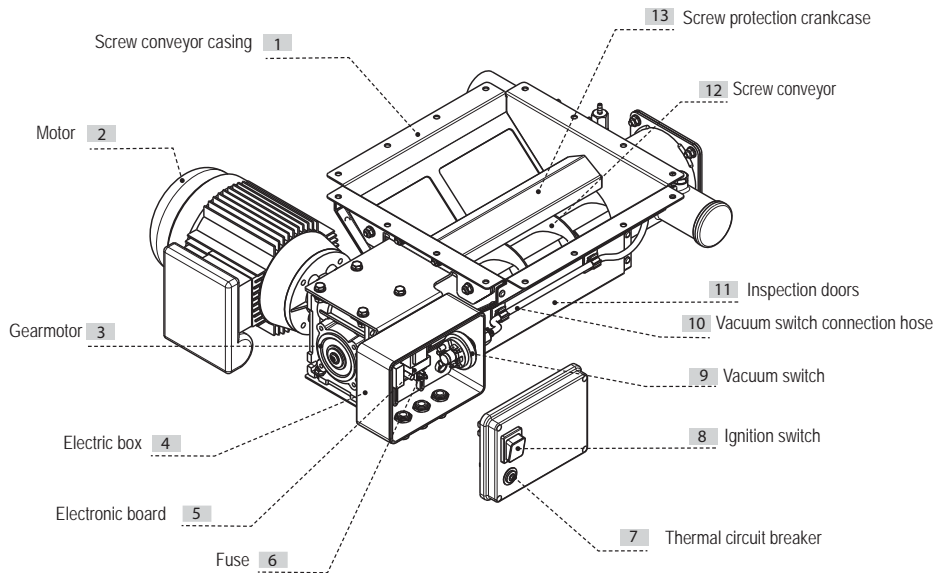
- Only perform the activities described in these instructions
- Perform all activities in accordance with applicable regulations
- Explain to the user the operation and use of the product
- Explain to the user how to maintain the product
- Report to the user the potential dangers related to the use of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

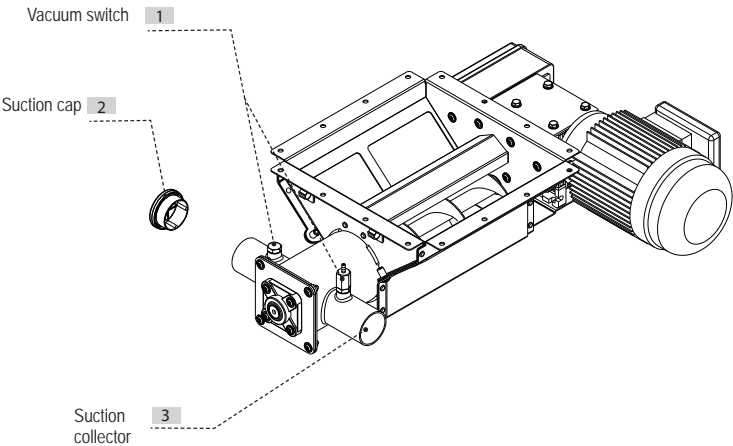
3 TECHNICAL DATA, EXPLODEDVIEW DRAWINGS AND DIMENSIONS



Article		AP3400.00.03
Suction inlet	Ø mm	50
IP protection degree	IP	44
Operating temperature min/max	°C	0 ÷ 40
Degree of humidity min/max	%	30 ÷ 95
Power supply	V ac	230
Frequency	Hz	50/60
Motor power	W	250
Max absorption	A	2
Fuse		5x20 T6.3A
Insulation class		1
Revolutions per minute	RPM	16
Shutter		SI
Weight	Kg	17
Measurement A	mm	630
Measurement B	mm	455
Measurement C	mm	180

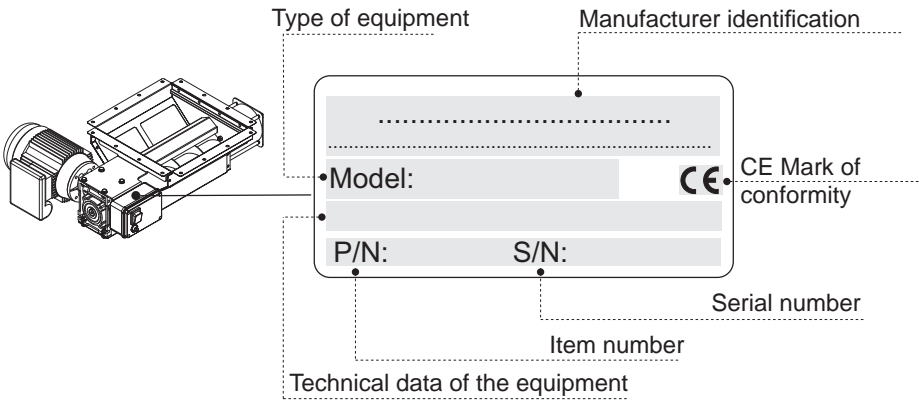
English







3.1 Identification plate

Do not remove or damage the identification plate.



3.2 Safety symbols

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**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.

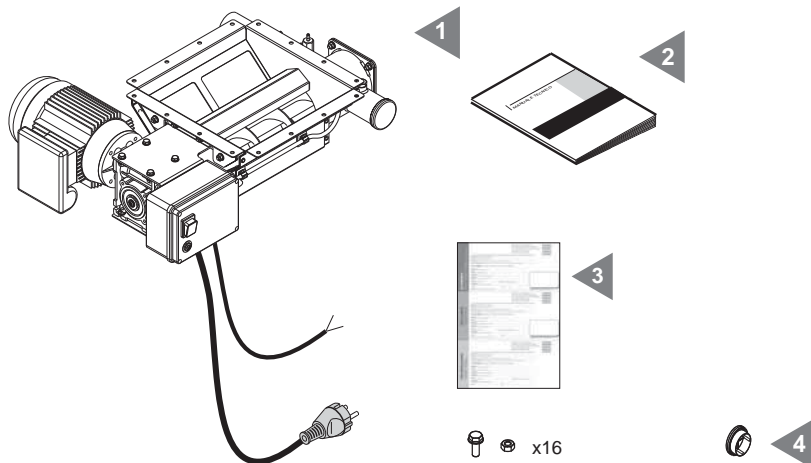
**It is recommended to pay full attention to pictograms and warnings of danger and prohibition in the present different parts of the equipment: if not respected, hazardous situations may occur.**

## **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) N°1 suction case whit auger
- 2) N°1 assembly, use and maintenance manual
- 3) N°1 warranty form
- 4) N°1 cap Ø 50 mm



## 5 PROPER USE OF THE PRODUCT

The suction case whit auger 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 suction case whit auger can be connected to a control panel that controls the operation of the entire pneumatic transport system or to an integrated central vacuum unit called.

The suction case whit auger is complete with the fuel collection case to be applied at the lowest point of the tank with the flange provided; the metal case is equipped with inspection doors on both its sides. 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 suction case whit extracts the fuel until the tank is completely empty: thanks to the screw conveyor movement, which moves the fuel to the suction inlet, a possible blockage or clogging of the inlet itself because of any slag or irregular fuel in the dimensions is avoided. For maximum safety of the suction case whit operation a vacuum sensor (Vacuum switch) controls the actual and correct operation of the fuel suction system and inhibits the operation of the suction case whit in presence of anomalies.

### 5.1 Characteristics of the storage tank

The application of the suction case whit auger must be made at the lowest point of the hopper part of the tank. The 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 tank 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.

Do not burden the weight of the tank or part of it on the suction case whit auger: it should always be kept to a certain distance from the ground.

It is also indispensable to place a shutter available in the catalog, which, when closed, separates the fuel in the tank from suction case whit auger 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 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.

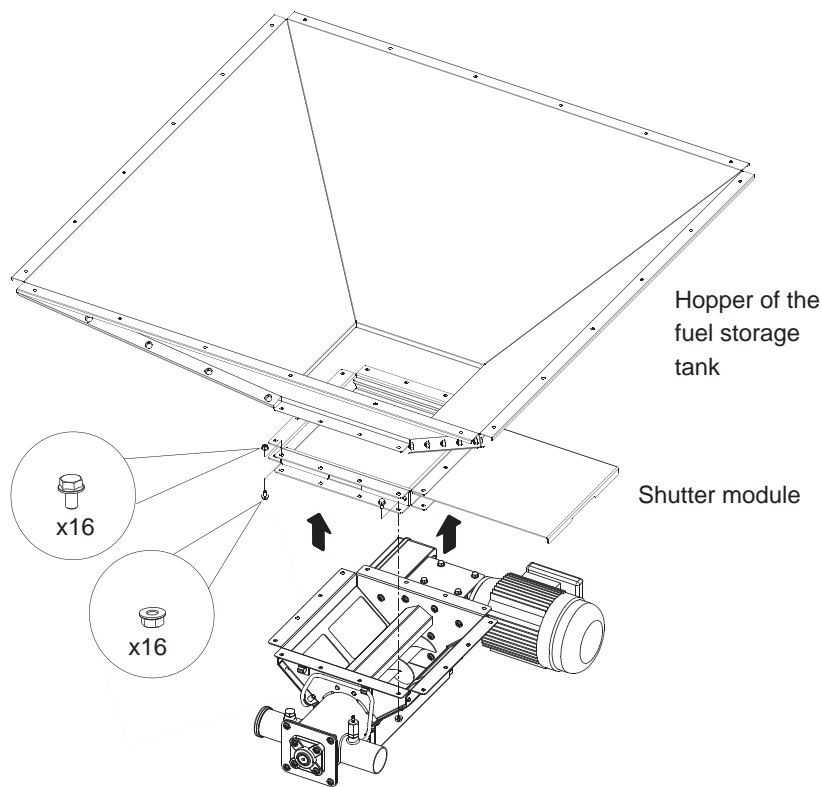
It is recommended to use only pipes, fittings and accessories present in our catalog, as they have been designed, tested and built specifically for these systems.

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

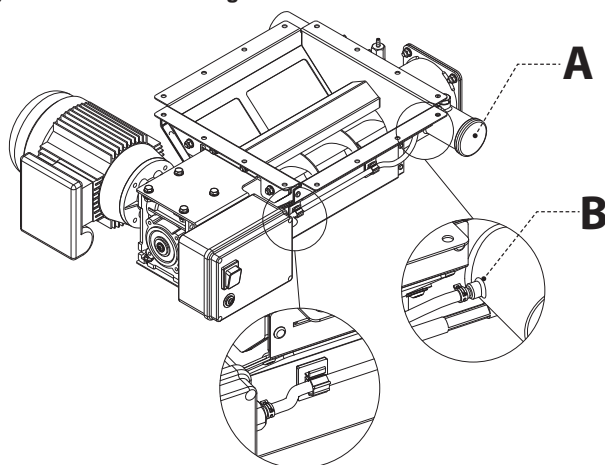
The suction case whit auger should be securely fastened to the bottom of the tank using the supplied screws. The figures below show a proper installation example.



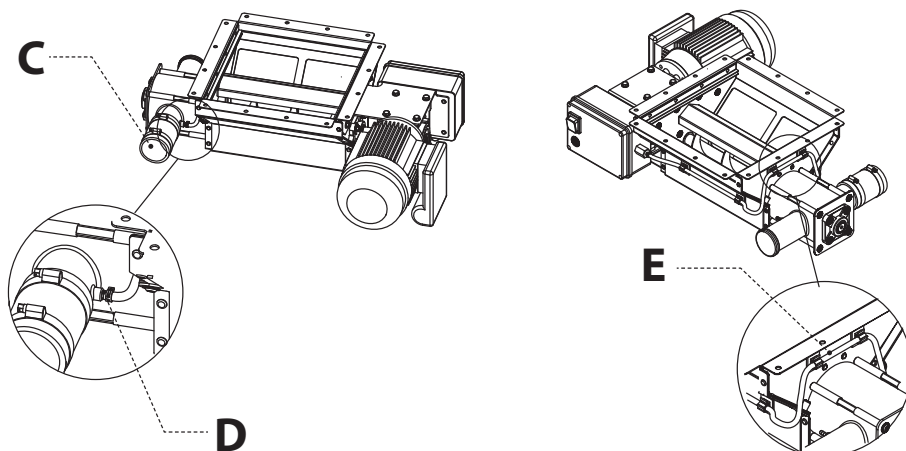
### 6.3 Vacuum switch hose connection

Check that the vacuum switch silicone hose is well connected: if it is disconnected, make sure that there are no foreign bodies inside the hose and the its fittings before positioning the hose itself on its hose fittings. Proceed to the control and make sure that the connection and positioning of the silicone hose is as described as in the figures below.

When using the suction collector **A**, on the electrical box side, connect the hose of the vacuum switch to the fitting indicated as **B in the figure**.



When using the suction collector **C**, on the engine side, connect the vacuum switch hose to the fitting indicated as **D in the figure**, following the way shown in point **E**.

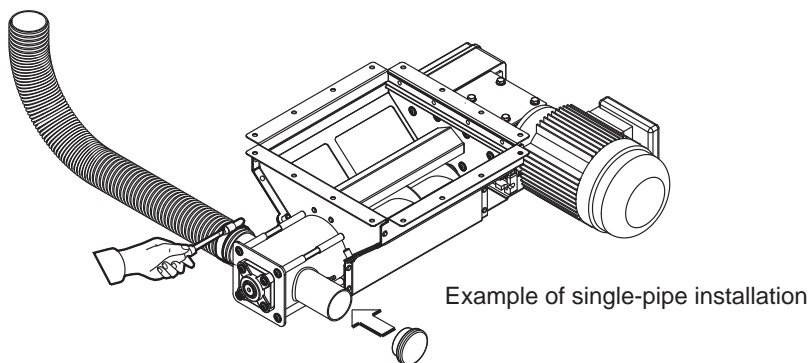


## 6.4 Connection to the piping network

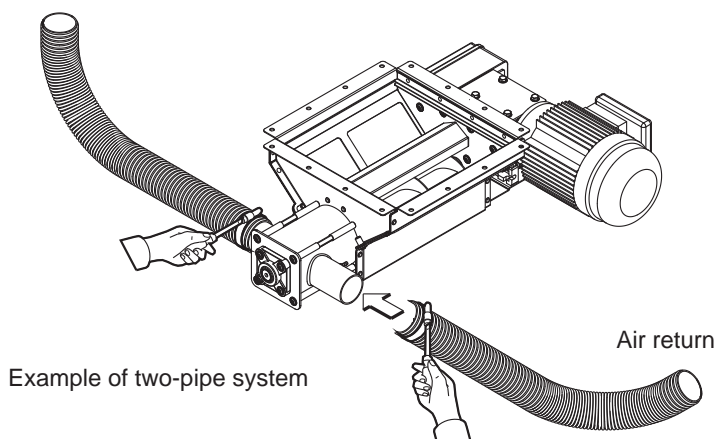
The fuel transport pipe can be placed in one of the two sleeves on the discharge collector. The remaining sleeve can be connected to the air return pipe from the vacuum unit, or alternatively it must be closed with the supplied plastic cap.

It is essential that the last pipe section connecting the suction case whit auger should be securely fastened to the bottom of the tank using the supplied screws. The figures below show a proper installation example. to the system is always made by at least a Ø 50 mm anti-static flexible pipe, which can be found in catalog.

Fuel transport



Fuel transport

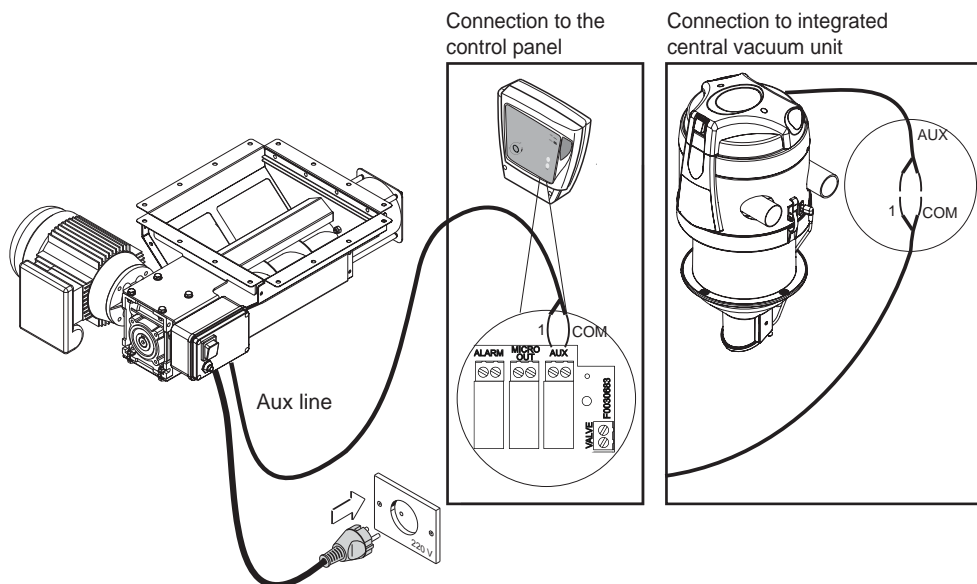


## 6.5 Electrical Connection

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

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



## 7 START UP

The start of the suction case whit auger is decided by the fuel transport control system, which can be found in the integrated central vacuum units 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 screw conveyor, the fuel is pushed to the outlet from where it is extracted by the pneumatic transport system.

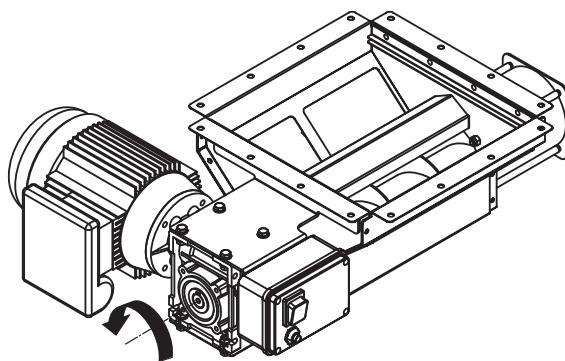
The force of the screw conveyor is such as to prevent the formation of fuel blocks in front of the outlet: however, this system is insufficient if the screw conveyor has to work with stones, metal objects, large pieces of wood or other objects that can cause its block. In this case the engine is protected by a thermal breaker that safeguards its integrity.

The vacuum sensor is designed to detect any malfunction of the fuel suction system, blocking the screw conveyor in this case.

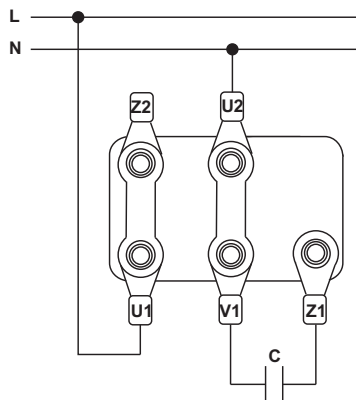
### 7.1 Switching on and use

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

- the tubes are correctly and securely fixed to the steel sleeves and the eventual cap is inserted in its seat
- the vacuum switch silicone hose is correctly assembled
- electrical connections have been carried out according to law, as well as the electrical system to which the suction case whit auger is connected
- Check that there are no foreign bodies in the storage warehouse.
- **the rotation direction of the screw conveyor is correct. If the direction of rotation does not correspond to the one shown in the figure below, proceed to the correct connection as indicated, acting within the control panel. (see figure)**



If the direction of rotation of the screw conveyor does not match the indications shown in the figure, check that the electrical connections and the orientation of the gearmotor terminal blocks are as shown in the figure below.



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

After reading also the manuals of all the components of the system, you can position the light switch of the control panel on 1 and start using the fuel transport system by following the adjustment steps described in integrated central vacuum units or control panel manual.

control panel manual



integrated  
central  
vacuum units



## 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
- open the plastic crankcase and remove any traces of dust inside

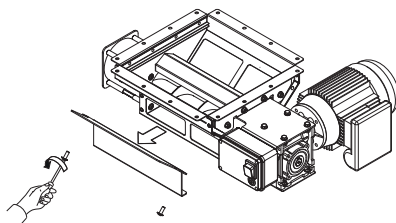
It is also advisable to thoroughly clean the fuel storage tank at least annually, in order to avoid dust accumulation and presence of foreign bodies.

### 8.1 Removal of foreign body and/or clogging in the screw conveyor case and/or maintenance

**During maintenance operations, there is a serious risk of injury.**

Before any maintenance work, make sure that the power supply is disconnected (even from auxiliary devices) and that it cannot be automatically restored.

Insert the shutter placed between the storage and the suction case whit auger until the deep end before any other operation.



Open the side inspection doors to remove any foreign bodies and trace of dust.

Fix the two inspection doors again and remove the closing shutter.  
Restore the power supply.



## 8.2 Spare parts

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

DESCRIPTION SPARE PART
Gear motor 250 W
Circuit board
Vaccum switch
0-1 switch

## 8.3 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.

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 CERTIFICAZIONI

### **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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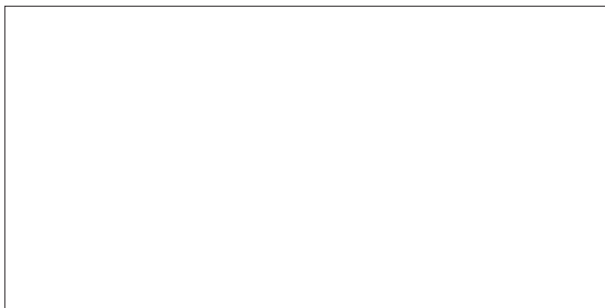
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