ADVANCE
Easy Moving

1

ASSEMBLY, USE AND MAINTENANCE MANUAL

CENTRAL VACUUM UNIT

NOVA 1 PLUS

CE

VACUUM UNIT
NOVA 1 Plus

INSTRUCTION MANUAL

- Type: feeding system for solid fuel boilers
- Model: Nova 1 Plus
- Revision 1.0.1

INDEX

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.

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.

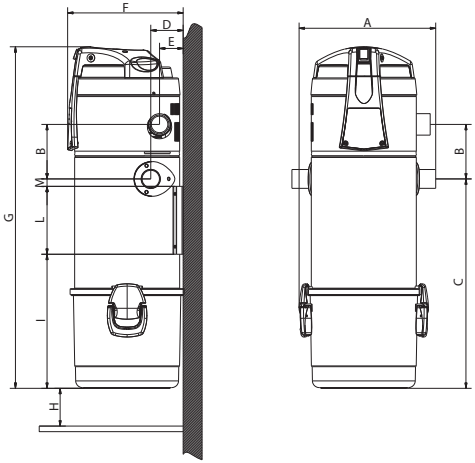
2.1 Installer's responsibilities

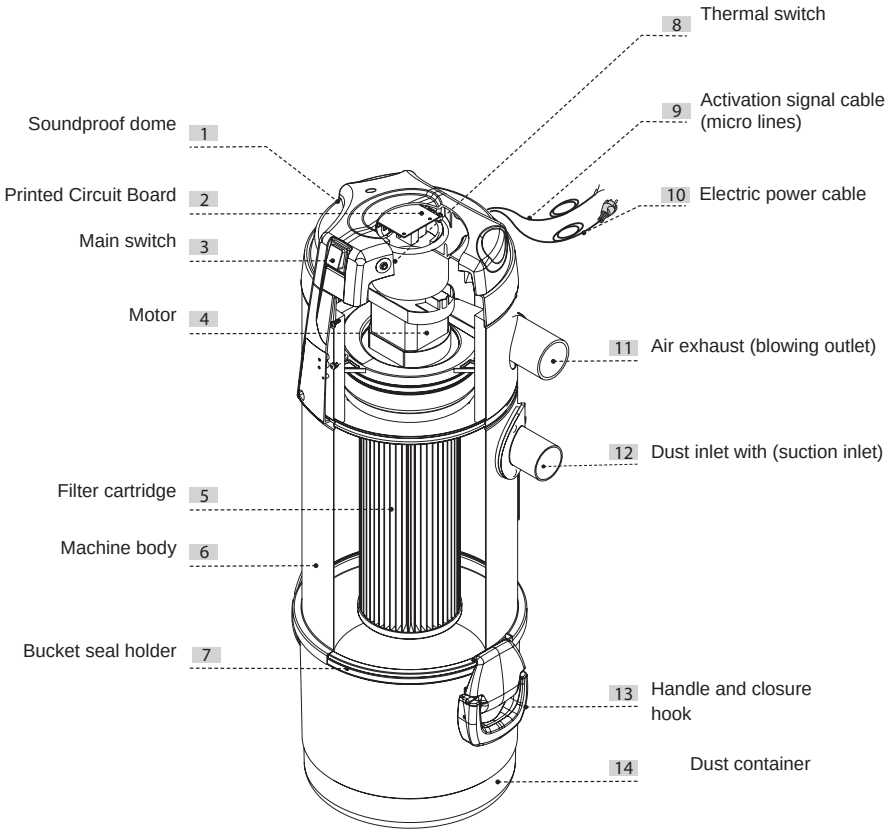
To ensure proper operation of the product, follow these guidelines:
- Only perform the activities described in these instructions
- Perform all activities in accordance with applicable regulations
- Explain to the user the operation and use of the product
- Explain to the user how to maintain the product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

3 TECHNICAL DATA, EXPLODED VIEW DRAWINGS AND DIMENSIONS

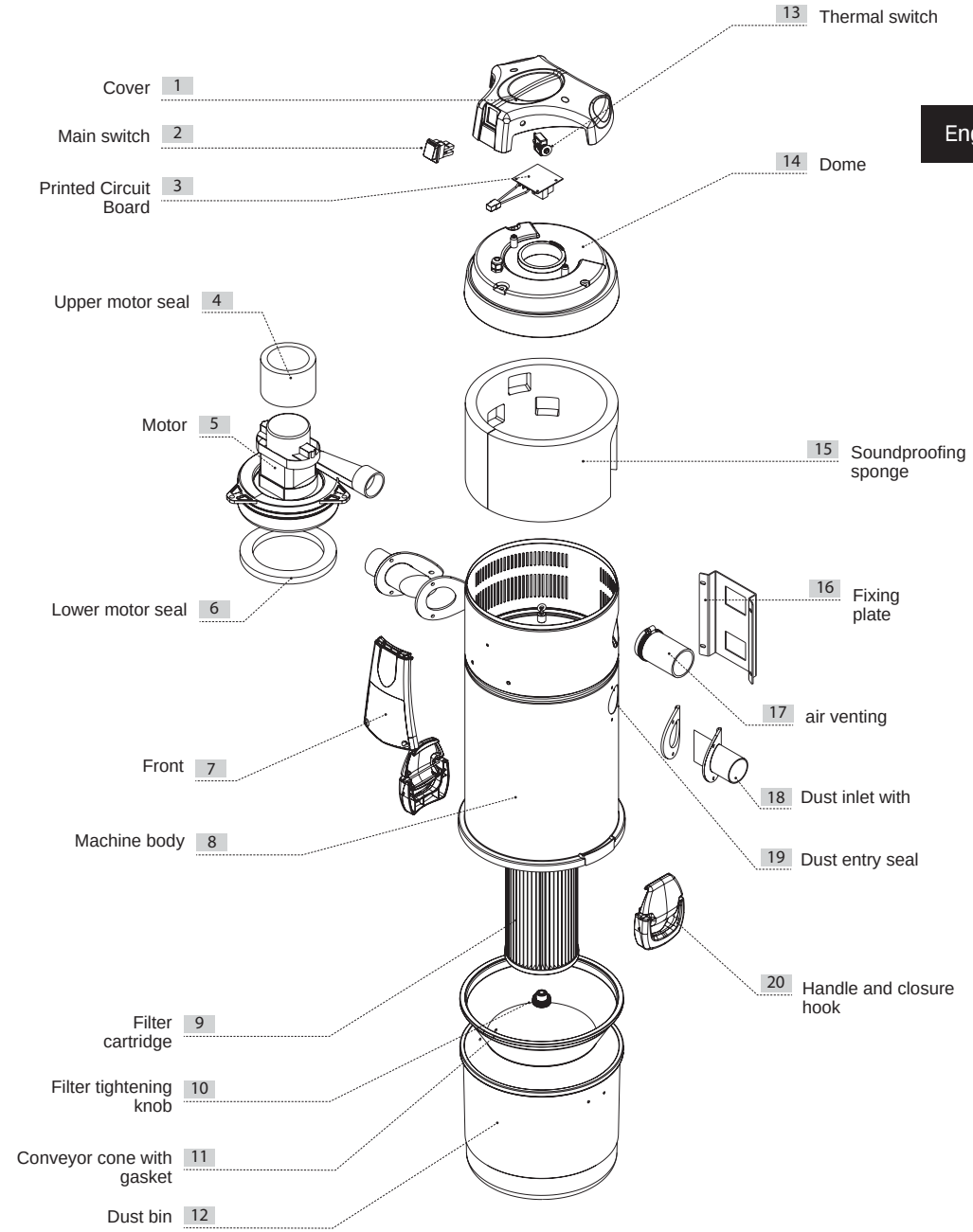
Model		Nova 1 Plus
Article		**AP1000.50.07**
Dust inlet pipe	Ø mm	50
Discharge pipe	Ø mm	50
IP protection degree	IP	20
Operating temperature min/max	°C	0 ÷ 40
Degree of humidity min/max	%	30 ÷ 95
Power supply	V ac	230
Frequency	Hz	50/60
Motor power	kW	1,8
Absorption	A	8
Thermal switch	A	9
Maximum air flow	m^3/h	225
Filtering surface	cm^2	6700
Filtering material		PTFE-H11
Dust container capacity	l	21
Weight	kg	10,5
Measurement A	mm	363
Measurement B	mm	145
Measurement C	mm	555
Measurement D	mm	86
Measurement E	mm	63
Measurement F	mm	305
Measurement G	mm	906
Measurement H (min)	mm	100
Measurement I	mm	356
Measurement L	mm	180
Measurement M	mm	20
Noise Level	dB(A)	< 70

N. B: Nominal noise levels. The values may vary depending on the environment in which the system is installed and the type of positioning



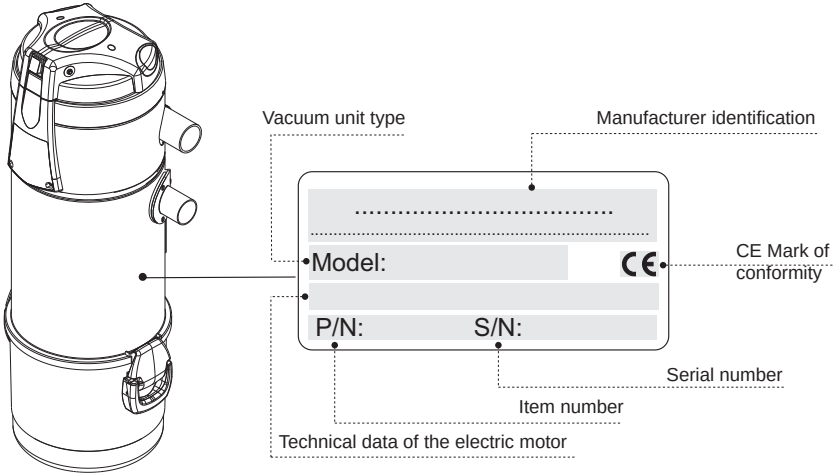

8 Thermal switch
9 Activation signal cable (micro lines)
Soundproof dome 1
Printed Circuit Board 2
10 Electric power cable
Main switch 3
Motor 4
11 Air exhaust (blowing outlet)
12 Dust inlet with (suction inlet)
Filter cartridge 5
Machine body 6
Bucket seal holder 7
13 Handle and closure hook
14 Dust container

English


13 Thermal switch
Cover 1
Main switch 2
Printed Circuit Board 3
14 Dome
Upper motor seal 4
Motor 5
15 Soundproofing sponge
Lower motor seal 6
16 Fixing plate
17 air venting
Front 7
18 Dust inlet with
Machine body 8
19 Dust entry seal
20 Handle and closure hook
Filter cartridge 9
Filter tightening knob 10
Conveyor cone with gasket 11
Dust bin 12

3.1 Identification plate

The CE identification plate is located to the piping network attachment side. Do not remove or damage the 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.

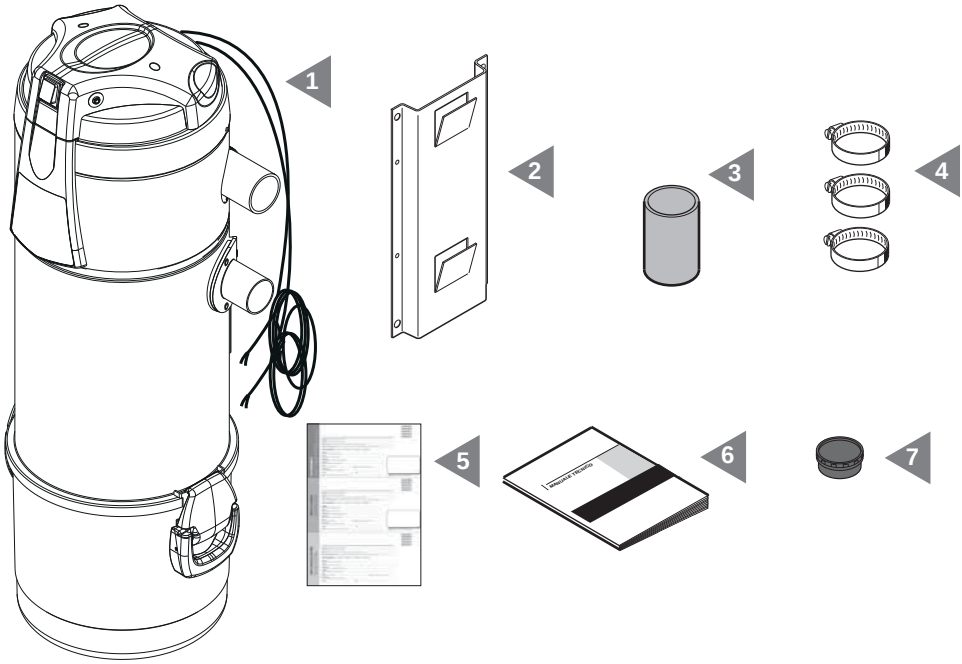
It is recommended to pay full attention to pictograms and warnings of danger and prohibition in the present different parts of the equipment: if not respected, hazardous situations may occur.

4 KIT AND ACCESSORIES

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:

English

1) N°1 vacuum unit
2) N°1 fixing plate for wall mounting of the vacuum unit
3) N°1 gum sleeve for the connection to the piping network
4) N°4 metal clamps for sleeves fixing
5) N°1 warranty form
6) N°1 assembly, use and maintenance manual
7) N°1 dust inlet closing cap



5 PROPER USE OF THE PRODUCT

The vacuum unit has been designed to be installed for the pneumatic transport of pellets or other biomass fuels with a medium-fine size: it can move a large amount of air into the pipes connected, allowing the solid fuel to be conveyed and transported together with the air.
This product is suitable for working with biomass fuel such as pellets, olive pomace, crushed shells of dried fruit, corn, but it cannot work with fuels 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.
The vacuum unit moves the fuel from the main storage tank and convey it to the boiler tank continuously and automatically: obviously, to achieve this, it is also essential to install the other components of the system.
When the vacuum unit is working, it also eliminates the dust from the transported fuel, retaining the waste in the bucket thanks to the high efficiency filter inside it.
Using the vacuum unit, the fuel transport system can be combined with a central vacuum system with one or more cleaning sockets. In the catalog you can find all the accessories needed for this purpose (see chapter 7). The product is suitable to serve boilers with a maximum power of 100 Kw/h and with a fuel consumption lower than 25 kg/h.

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.
The product should not be exposed to atmospheric agents and should not be installed in areas subject to high humidity, possible flooding, high temperatures and dust presence.

6.1 Instruction for the installation of systems

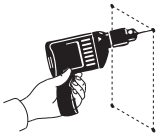
Consider that in pneumatic fuel transport systems there are two different types of pipe features:
A sections of pipes where only air and eventually dust pass through
B- sections of pipes where both air and fuel pass through
Mandatory all sections of piping through which the fuel passes must be made with 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 lenght 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

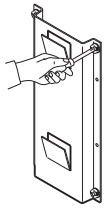
The control unit must be firmly fixed to the wall or to another stable and robust support. A support plate is provided to facilitate this operation.
The floor height of the unit must be at least 18 cm in order to allow the removal of the filter and the emptying of the bucket.

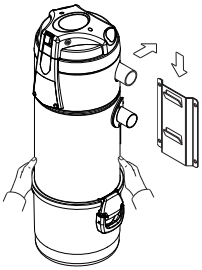
Trace the drilling points using the plate supplied as drilling template **1**



2 Do the drilling

Screw the screws into the dowels and check that the plate is well anchored to the wall. **3**





4 Hook the suction unit to the anchor plate by lifting it, placing it against the wall and lowering it until it engages in the fixing plate.

6.3 Connection to the piping network

Using the sleeves or a flexible hose section, connect the suction and discharge pipes from the system to the vacuum unit.
Do not glue the hoses extremities to the vacuum unit's joints.
The maximum gross length admitted between the point of fuel sampling and system is 25 m.
The calculation of net piping length is affected by:

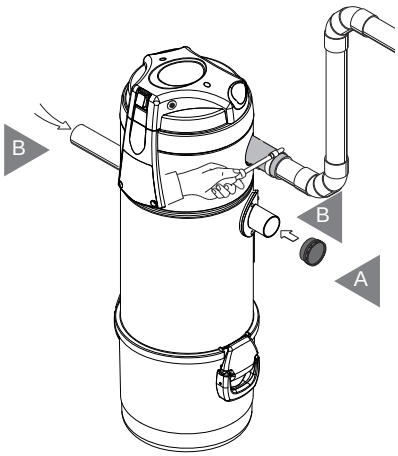
- The type of fuel to be transported
- The quantity of curves in the tract where the fuel passes through
- The length of vertical tracts where the fuel passes through

The exhaust pipe (air expulsion from the unit) maximum length admitted is 5 m (single-pipe system)

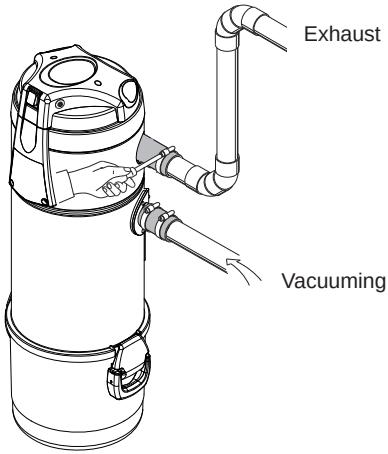
The exhaust pipe of the air (from the unit) maximum length admitted, in case it returns to the point of fuel sampling, is 10 m (double-pipe system)

See "installation data sheet" on our website

1. Put the closure cap (A) on the extremity of the vacuuming joint which is not used for the connection (B).



2. Connect the suction and the exhaust hoses of the machine using the sleeves or a tract of flexible hose.

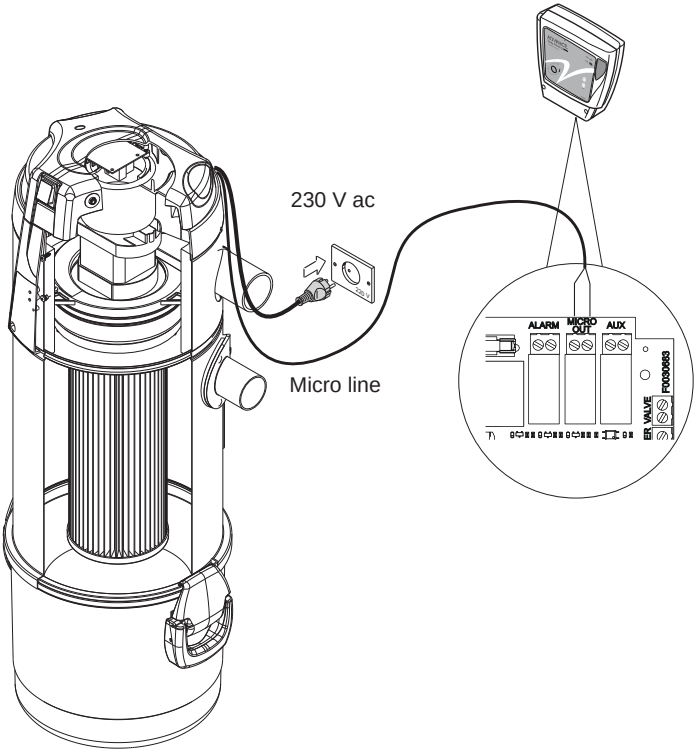


6.4 Electrical Connection

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.

English

Connect the two MICRO line wires to the MICRO OUT terminal on the control panel.
Connect the power cable to a 230 V ac power outlet.



7 START UP AND USE

Don't use the vacuum unit without filter cartridge.
Before proceeding to unit start up, it is opportune to check that the pipes are correctly and firmly fixed to it, and that electrical connections comply with the current law, as well as the electric system to which it is connected.
Read all the manuals of the different components of the system before proceeding.
The vacuum unit can be installed in systems only for pneumatic fuel transport or in systems where dust suction is also possible.

If the vacuum unit is used only for pneumatic fuel transport, its operation is managed automatically by the control panel, and it only works when it is required to transport the fuel.
If the plant is also used for dust aspiration and so if one or more aspiration sockets have been provided in the system, its operation is twofold and it is always managed by the control panel.
In this case it works either when it is required to transport the fuel or when it is required the dust suction through the installed suction inlets (see components and accessories in the catalog).

Control Panel

Cleaning suction inlet

Sectioning valve Fuel/Dust

To switch on the vacuum unit, simply insert the plug into an electrical outlet; at this point it is ready to work only when prompted by the already connected control panel (see 6.4).
In order to avoid irreparable damages to the filter and the central unit, the suction of fine powders such as ash, cement, gypsum, flour, talcum etc. must be avoided without the interposition of an additional and adequate filter available among those in the catalog.

Separator of fine powders and ash with casters

Fixed separator of powders and ashes

7.1 Thermal switch

The thermal switch's task is to protect the electrical and electronic parts of the vacuum cleaning unit from overcurrents and short circuits.
The button of the switch during correct operation will be positioned inside its own seat, while in the event of a successful protection the button will be released from its seat.
The reset must be done manually by pressing the button, this operation will be effective only if the cause of the block has been solved.
If blocking occurs repeatedly, the intervention of a specialized technician is necessary.

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.
In the absence of a specific maintenance plan, a complete product inspection is recommended for each filling of the fuel storage tank.
The checks to be carried out at least yearly are:
- Check electrical wiring condition
- Check motor brushes condition
- Check filter cartridge condition

The checks to be carried out at least every two weeks are:
- clean the filter with compressed air or wash it with low pressure water
- Empty the dust collecting bucket

The filter cartridge should always be correctly fixed. A wrong mounting could cause serious damages to the motor and the control panel.
Do not use the vacuum unit without the filter cartridge.
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 vacuum unit, it is recommended to use only original spare parts.

DESCRIPTION OF SPARE PART
Bright button 01
Electronic board
Motor
Motor Brushes
Thermal switch
Filter PTFE
Transparent dust bin
Cone of bin sealing

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

English

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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info@advanceeasymoving.com - www.advanceeasymoving.com