

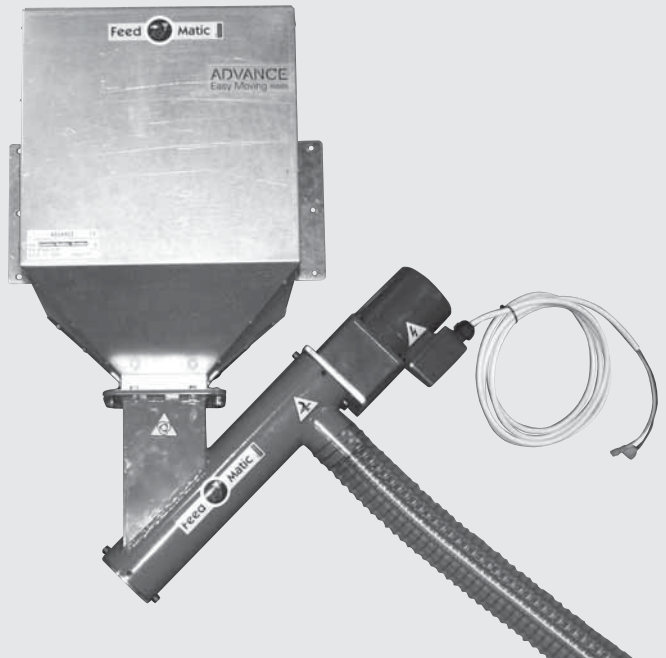
# ADVANCE

Easy Moving

7

## ASSEMBLY, USE AND MAINTENANCE MANUAL

### FEED MATIC







## INSTRUCTION MANUAL

- Type: feeding system for solid fuel burners
- Model: Feed Matic
- Revision 1.0.4

# FEED MATIC

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## 1 INTRODUCTION

Dear customer,  
the manufacturer would firstly like to thank you for the choice you made in buying on of 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.

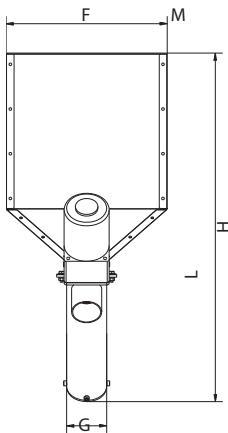
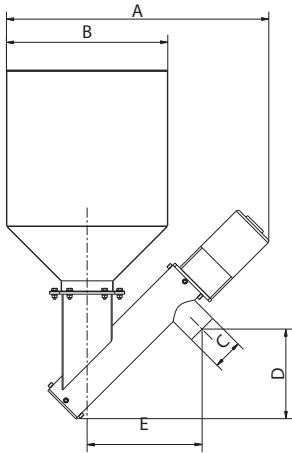
The manufacturer reserves the right to make improvements or modifications to this manual and to the equipment at any time, without obligation to advise third parties.

## 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.

### 3 TECHNICAL DATA AND DIMENSIONS OF THE PRODUCT

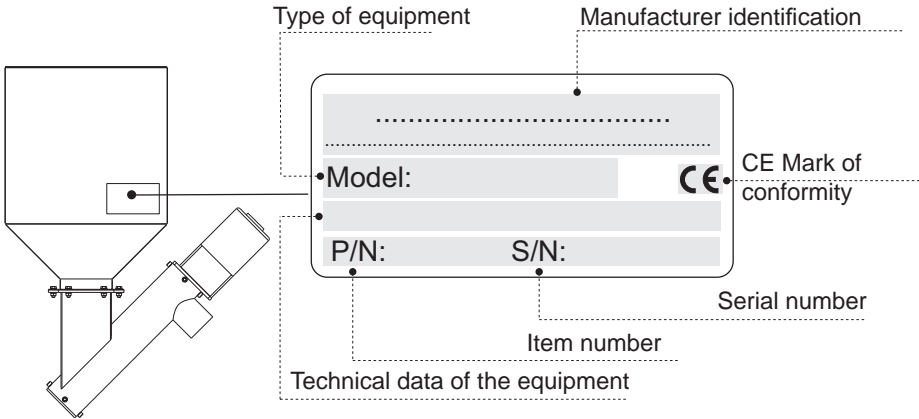
English



Article	AP3400.00.05	
Power supply	V ac	220
Frequency	Hz	50
IP protection degree		54
Temperature min/max	°C	0 ÷ 40
Degree of humidity min/max	%	30 ÷ 95
Power consumption	W	40
Absorption	A	0,34
Capacitor	μF	2,0
Revolutions per minute	RPM	8
Weight	Kg	17
Measurement A	mm	525
Measurement B	mm	322
Measurement C	Ø mm	60
Measurement D	mm	180
Measurement E	mm	230
Measurement F	mm	322
Measurement G	Ø mm	80
Measurement H	mm	700
Measurement L	mm	500
Measurement M	mm	53

### 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.

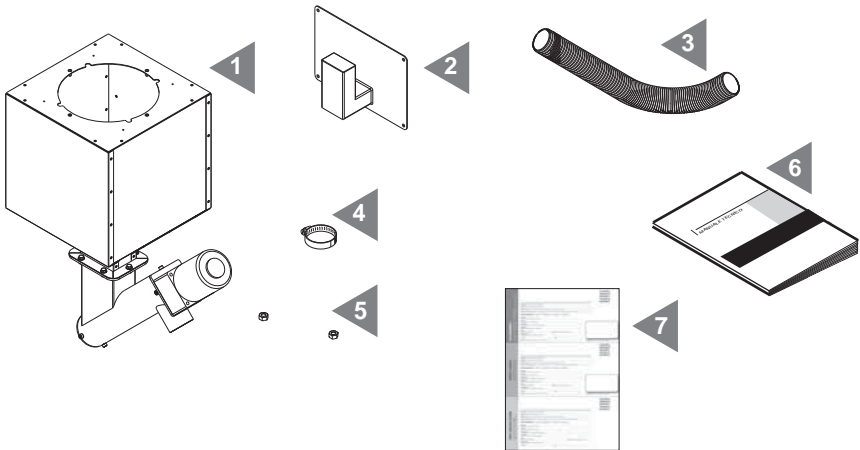
It is recommended to pay full attention to pictograms and warnings of danger and prohibition in the present different parts of the equipment: if not respected, hazardous situations may occur.

## 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) N°1 Screw conveyor
- 2) N°1 wall fixing plate
- 3) N°1 1,5m flexible anti-static hose
- 4) N°1 hose clamp
- 5) N°2 fixing bolts
- 6) N°1 intallation, use and maintenance manual
- 7) N°1 warranty form

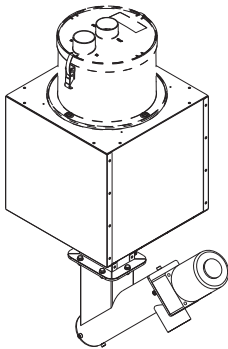


## 5 PROPER USE OF THE PRODUCT

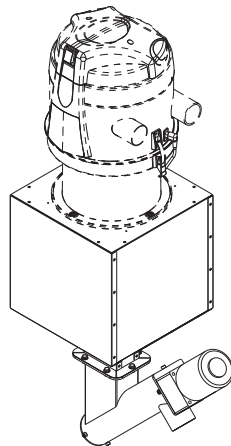
The screw conveyor has been designed to be installed for the pneumatic transport of pellets or other biomass fuels with a medium-fine size. This product is suitable to store and dose biomass fuel such as pellets, olive pomace, crushed shells of dried fruit, corn, but it cannot work with fuels having 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.

The screw conveyor has been designed to be installed for the pneumatic transport of pellets or other biomass fuels with a medium-fine size is designed to feed pellet burners in boilers and firesides. The screw conveyor motor is suitable to be directly controlled from burner instrument panel to which it is connected. The fuel is stored and dosed directly on burner command through the antistatic polyurethane tube that must be connected to the feeding hose of the burner itself. Screw conveyor is specially designed to accommodate in the upper part the dosing terminal of the fuel pneumatic transport system, such as the dispenser or the integrated suction unit.



Installation Example with  
Dispenser



Installation example with  
vacuum unit

## 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.



## 6.1 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

## 6.2 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 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.**

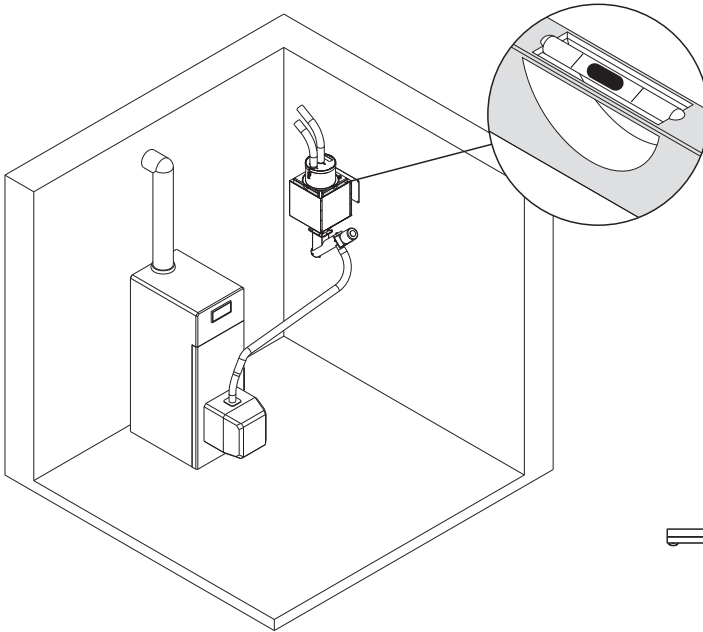
### 6.3 Positioning

In order to allow proper use of the product and easy maintenance it is advisable to provide free and bright spaces around it.

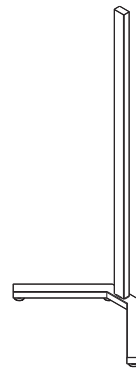
Ensure that the equipment is always positioned correctly with a spirit level.

The screw conveyor can be fixed directly to the wall by means of the supplied plate or, in case of excessive distance from a sufficiently sturdy support, a self-supporting column may also be purchased as optional: it can be requested directly to Technical Offices.

The assembly of the auger to the tank is 180° reversible, which makes both left and right transport possible, simply by disconnecting the six fixing bolts of the flanges and reverse the orientation of the auger.



Installation example



Optional self-supporting column  
on request

## 6.4 Installation of the pneumatic transport system

The installation of the fuel transport system terminal must be done at the top of the screw conveyor. Fixing operation must be made using the four screw-thread inserts that can be found on the upper plate.

See examples on page 8.

## 6.5 Connection to the burner

Connect the dispensing outlet of the screw conveyor to the feeding tube of the burner with the supplied Ø 60 mm anti-static transparent flexible hose.

The electrical connection of the screw conveyor must be done according to the instruction manual of the burner to which it will be connected.

See installation example on page 10.

## 7 START UP

Before proceeding with screw conveyor start-up, make sure that the vacuum system has already fed the fuel into the galvanized metal container above the feeding screw conveyor. Then, with the ignition of the burner, the screw conveyor will be driven directly by the burner for the time required for fuel feeding.

## 7.1 Calibration with pellets

The data below will allow the optimization of burner calibration with screw conveyor.

- Flow calculated with PELLET EN-PLUS A1

- 220 v 8 rpm gearmotor.

Average flow rates:

Average flow rate 15 sec. 212 gr.

Average flow rate 30 sec. 424 gr.

Average flow rate 60 sec. 844 gr.

- Weighted flow = **14 gr./sec.** (+ o – 10%)

- The flow rates for other permitted fuels (see point 5) must be calculated from time to time before burner calibration (see section 7.1)

Fuel dispensing Serial calibration	
Type	EN-Plus A1 wood pellets
Quantity	14 grams / sec ± 10%

## 7.2 Calibration with other types of fuel

**This operation must be carried out only by qualified personnel.**

The calibration is necessary if the fuel type is replaced or when the same fuel type has different characteristics regarding mainly specific weight and granulometry. Possible calibrations mainly concern these types fuel:

- **PELLET**

- **CRUSHED SHELLS OF DRIED FRUIT**

- **OLIVE POMACE**

- **CORN**

Proceed as follows:

- 1) Make sure that the screw conveyor is full of fuel
- 2) Connect the Ø 60 mm hose to the dispensing outlet
- 3) Place a bin under the tube to contain dispensed fuel
- 4) Make screw conveyor work for 15 sec. and weigh how much fuel is delivered
- 5) Repeat the operation 4 for five times and calculate the average of fuel delivered
- 6) the average thus obtained must be divided by fifteen, obtaining the weight of the fuel delivered for each second of screw conveyor operation
- 7) Conform to the obtained data for the calibration of the burner

**This type of calibration is always indispensable since the fuels can vary their specific weight and their calorific value depending on their quality and environmental conditions.**

## 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.**

Before carrying out any maintenance work, make sure that the power supply is disconnected and that it cannot be restored automatically.

In the absence of a specific maintenance plan, a complete product inspection is recommended at least yearly.

The checks to be carried out are:

- check the grounding condition of the antistatic tube and the electrical system
- check the electrical wiring condition
- remove any dust traces accumulated inside the screw conveyor compartment
- remove eventual dust traces accumulated inside the fuel storage compartment
- check that the screw-motor coupling is free to rotate without friction
- check anti-static flexible hose conditions.

### 8.1 Spare parts

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

DESCRIPTION CODE
Gearmotor

### 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.

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)

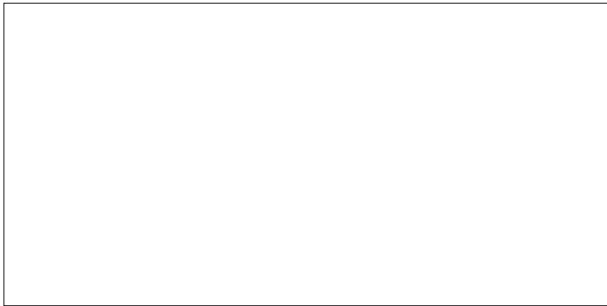
N° 2014/30/UE (EMC)











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