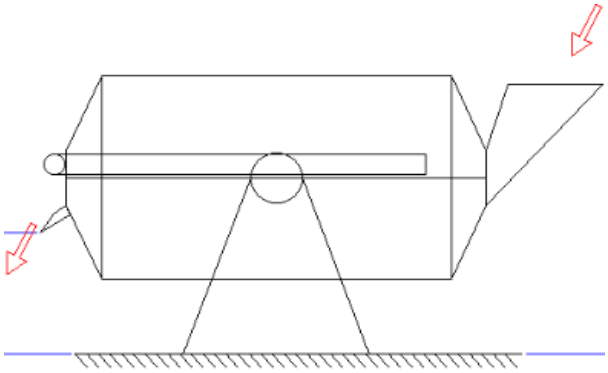
ROTATING DRUM FOR DRYING SOIL FERTILIZER:
Offer nº 0220 Date: November 12, 2020



ROTARY DRUM FOR DRYING fertilizing soil, according to the sample sent, at an initial 40% relative humidity, to reduce it to a final 10%.

TARGET:

This offer refers to the supply and commissioning of a system for drying the defined material:

Material:

DESCRIPTION

(According to sample provided by the client)

Remains from the “Bauer” separator.

Compost soil without lumps greater than 10 mm, or Ø2 mm fibers greater than 30 mm. Relative humidity: 40%

Wet product density: 526 kg/m3

Process requested:

Drying of the material at a temperature equal to or less than 40ºC.

The process admits exceeding said temperature in short periods of time (to be defined). The normal adjustment range for this type of process is a tolerance of 5ºC and a response or correction time of 30”.

Desired production:
Up to 600 kg of dry product, at 10% humidity, in batches every 16 hours.
(Initial entry of 840 kg of wet product with a humidity of 40%)
A loading time (at the customer's expense) of up to 2 hours (between 10 and 20 liters per minute) and a discharge time to the subsequent crusher (at the customer's expense) of 2 hours with a similar flow rate is estimated.
The loading and unloading flows will be adjusted to the possibilities of the product.
The loading and unloading levels will depend on the final design of the machine and its needs.

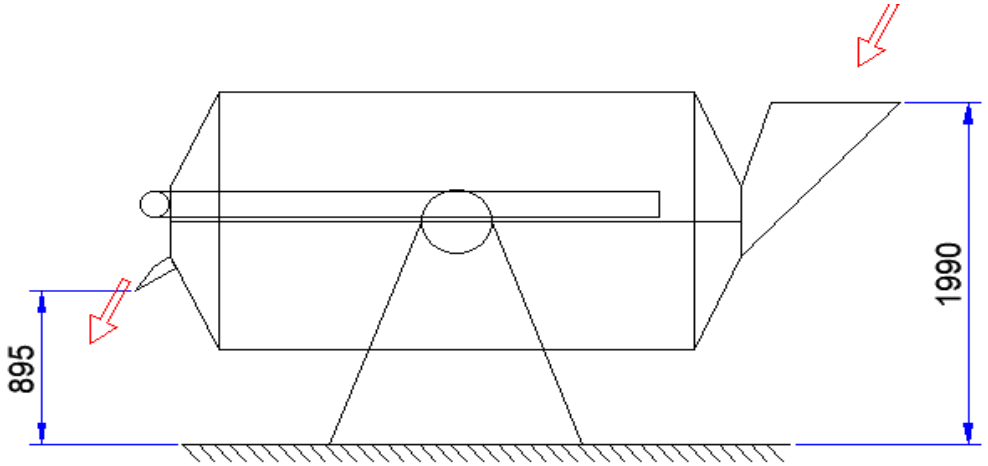
EQUIPMENT DESCRIPTION:

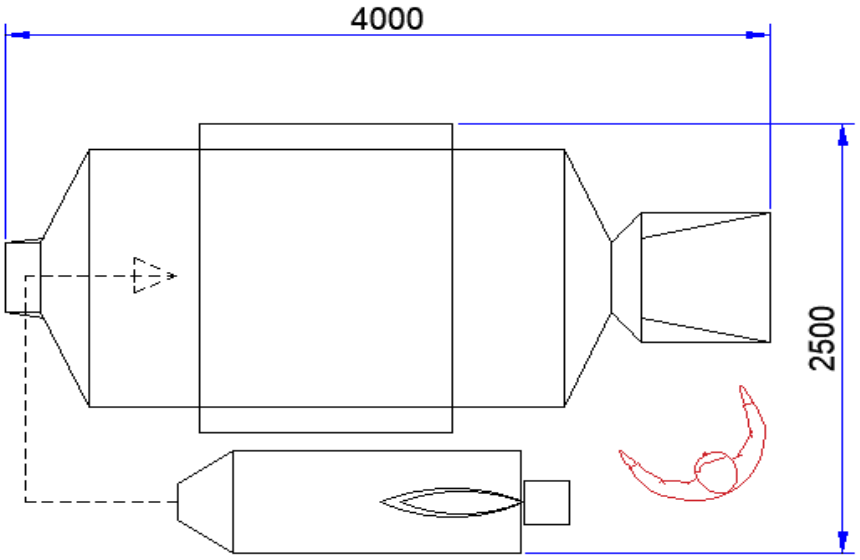
Below we detail the study of the prototype calculated for your needs.
The main drying system consists of a drying drum to process the entire batch (600 kg/ batch, equivalent to 1.2 m3/batch).
It has been planned that the operation of the equipment will be in batches, although during the loading and unloading operations it can continue processing if required.
The residence time, up to 16 hours, can be regulated depending on the needs, as well as the air temperature <40ºC and the material turning regime.
The drying drum will have sufficient capacity for a good mixing of the product/air that guarantees its homogeneous mixing and exchange.
The rotation regulation will be adjustable, to have the appropriate rpm range for each phase (loading, unloading, heating, etc.).
The rotation of the drum will be carried out through an electric motor with a reduction box and the appropriate pinion and crown transmission.
To facilitate the logistics of the process, the drum will be loaded at one end through a hopper and unloading will be done at the opposite end through an adjustable evacuation ramp.
The set has an additional tilting system to facilitate loading and unloading operations.
The resulting dimensions will be adapted as far as possible to the needs of the layout of the other existing machines.
The thermal power generator is installed on one side of the drum, coming from an autonomous gas-oil heating group.
Said group, totally autonomous (including diesel tank) will have an independent steel combustion chamber so as not to contaminate the product of the process with the combustion gases.
It will communicate through a pipe to the inside of the drum.
All the resulting air (and its humidity) will be expelled outside the equipment through its loading and unloading openings, not being used for the process.
The entire set will have a CE marking that guarantees good practice in reference to safety and performance, having all the accessories required by current regulations.
The planned occupancy for the needs of the supply is about 4 m long by 2 wide.
(Studying any space improvement necessary during the development of the project.
The validation tests, regulation and delivery of the equipment will be carried out in our workshops and the equipment will be delivered "turnkey" without the need for any type of

regulation or adjustment, except those that must be carried out in their premises, with the product to be dried.
The operation of the equipment is very simple, the temperature is fixed, the amount of air injected (which speeds up the process) and the speed of rotation of the drum (which also speeds up the process) can be varied, finally we have the permanence time of the product (up to 16 hours if necessary) but our experience (and based on the samples provided) tells us that the drying process can be carried out in a smoother way (less turns and less air) so as not to excessively change the mechanical conditions of the product.
During loading and unloading operations, the inclination of the drum can be varied to facilitate the transport of the product.
Eurotech rotary drums are designed for drying bulk materials.
Its size, thermal and electrical power, is determined by the amount of water to evaporate from each product to be dried.
The drying air is calculated to work at a low temperature, so as not to damage the bacteria of the material.
Trommel construction:
Carbon steel plate, with internal turning blades, to facilitate the drying of the material to be treated. Completely painted externally.
Rotary system:
Two raceways, two groups of hardened steel rollers and shafts with bearings.
Traction system:
Toothed crown, pinion and motor reducer, with electronic variator of the speed of rotation in the control panel that allows the adjustment of the desired speed of the drum.
Drying control:
Through temperature controller by electronic thermostat and by electronic regulation of the rotation rpm of the drum.

Installed electrical and thermal power:
Installed thermal power: 70 KW.
Installed electrical power: 12 KW.
Scorecard:
Independent electrical cabinets for the rotary dryer and the heat generator group, with pushbuttons, contactors, magneto-thermal relays, thermostats, frequency variator, indicator light for all motors and installed probes, with signaling and other necessary elements, all according to current regulations .

ORIENTATION: (MM)





1- 1- The system is completely autonomous, in the loading and unloading operations it is recommended the presence of an operator to ensure/regulate the inlet and outlet flows of the machine. Internally, the drying process is 100% Plug & Play, although an adjustment of the machine's own parameters (temperature, time, rotation speed) is required to define and optimize the process.
2- 2- The machine support system is equipped with adjustable feet
3- (optional) that allow a correct leveling of the equipment and exclude it from civil works for its levelling. The system is capable of correcting unevenness of 10%. We understand that this option is more economical and practical.