A PNR Italia solution guarantees fire prevention

A winemaking equipment manufacturer solves the problem of self-combustion

INDUSTRY
Wine-making industry

APPLICATION OF PNR ITALIA PRODUCTS
Fire fighting

PROBLEM
Prevent self-ignition

PNR ITALIA SOLUTION
Manifolds system and full cone nozzles

SCENARIO FOR THE SECTOR
Vine shoots' transformation

From November to February, the pruning of vine plants produces considerable quantities of **wood residues** - long and mostly thin branches - called "**vine shoots.**"

Although they may seem worthless materials, there has been a progressive technological advance for the recovery and enhancement of these production waste in recent years. The vine shoots can be transformed into pellets in a righteous path of differentiation of energy resources.

The stages of vine shoot processing and transformation

Pellets are mainly obtained from the pruning of the vines. The process takes place first in the vineyards, collecting the waste and then passing through the dryers and compactors.

HARVEST: The vine shoots are collected from the ground by special shredders that separate the wood chips from grass and leaves;

DRYING: The drying phase can occur naturally in about two months or by special machinery capable of significantly reducing processing times;

FRAGMENTATION : Once dried, the material is transformed into fine sawdust, which will then be transformed into pellets;

TRANSFORMATION INTO PELLETS : The sawdust - without other binders - is compressed into pellets in special mills working at a temperature between 40 and 80 ° C.

THE PROBLEM OF OUR CLIENT

The customer who turned to PNR Italia is a manufacturer of wine-making equipment.

The need was to prevent possible self-combustion fires on a belt that conducts the vine shoots in a dryer.
The dryer reaches an operating temperature between 100 and 120 ° C.

The conveyor belt is 11m long and 3m wide, and the pressure of the customer's system is about 3.5 bar.

PNR ITALIA SOLUTION

The PNR Italia technical department designed a two manifolds system as long as the conveyor belt placed 70 cm above the belt.

Each manifold is equipped with 10 full cone spiral E nozzles, for a total of 20 nozzles throughout the system.

Each nozzle is placed at 1.10m from the other, except for the two at the ends of the manifold, located at 55cm respectively from the beginning and end of the manifold.

ADVANTAGES FOR OUR CLIENT

EBU nozzles ensure optimal coverage of the area in case of fire.

FOCUS SUL PRODOTTO

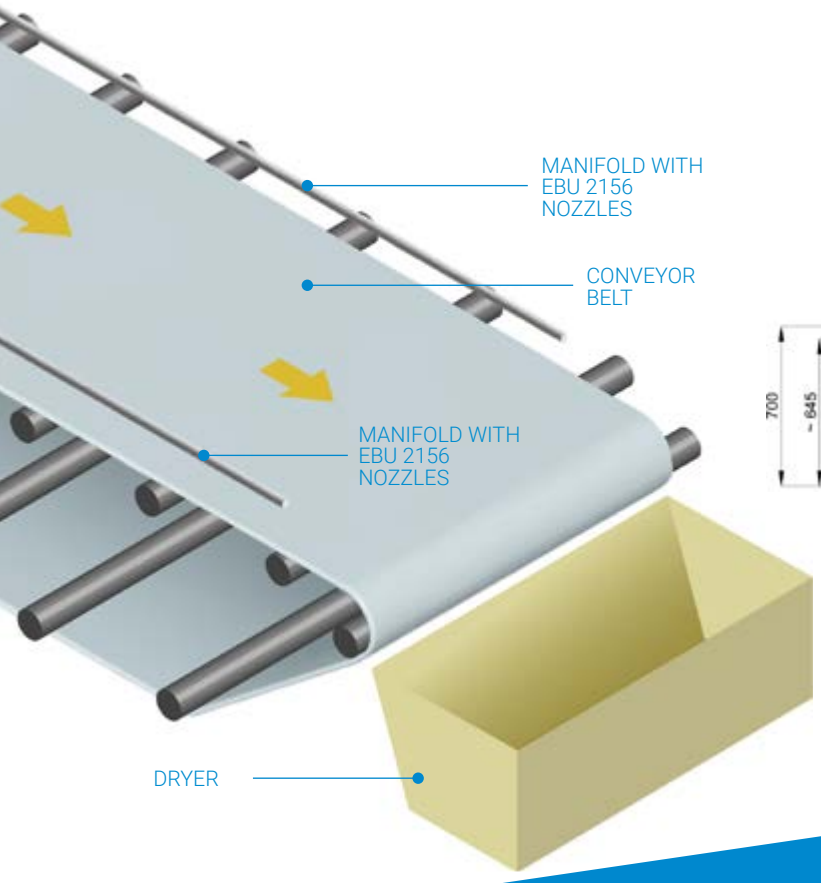
EBU 2156
FULL CONE NOZZLES

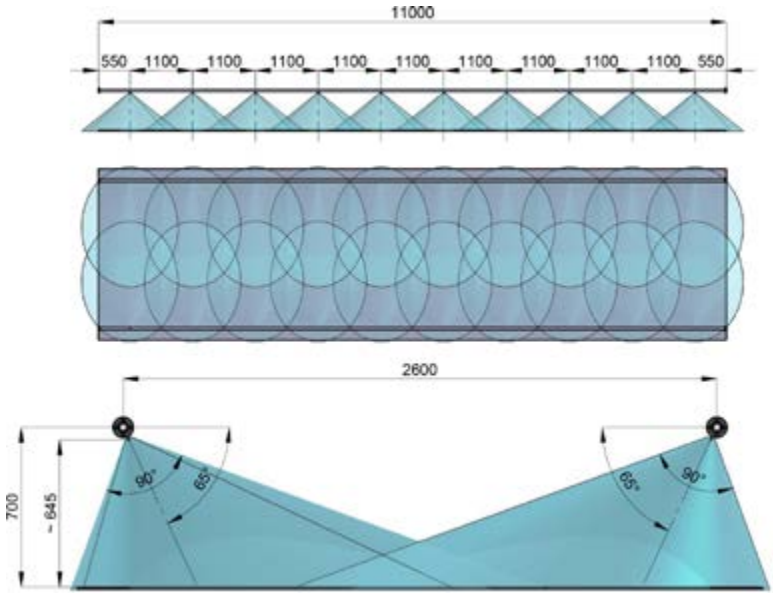
E full cone nozzle works on the impact principle, by the deflection of a water stream that impacts onto a spiral profiled surface which provides the desired spray angle. Their special design makes them virtually clog-free and produces a wider spray coverage than other nozzles for a given flow and pressure.

PERFORMANCES

SYSTEM

@PW= 3 BAR	UNIT OF MEASUREMENT	THEORETICAL VALUE
MANIFOLD FLOW RATE	LPM	156
SYSTEM FLOW RATE	2X156= **312LPM @ 3 BAR**	





CONVEYOR BELT COVER STUDY
FRONTAL VIEW | PLAN | SECTION

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