PNR Solutions

PNR designs a washing system for the wine sector

Nozzles and washing heads for the treatment of tannin powders in the wine-making industry



INDUSTRY
Wine-making industry

APPLICATION OF PNR PRODUCTS
Washing of machinery for the treatment of tannin powders

PROBLEM OF OUR CLIENT
Internal and external washing of machinery

PNR SOLUTION
Manifold system with high impact jet nozzles and washing heads

SCENARIO FOR THE SECTOR

Tannins in the wine sector

Tannin is one of the four characteristics - in addition to acidity, alcohol and residual sugars - **that make wines resistant to aging.**

The tannin that we find naturally in the wine comes from its extraction from the grape pips during pressing or maceration. A part of the tannins is given to the wine also by wooden barrels where it is aged.

Tannins are also available in the form of liquid or powder additives as well, to be added to wine in its various production phases. The purposes of using this kind of additives are many, from the stabilization of the wine itself to the elimination of sulfur compounds with an unpleasant odor, up to the control of bacterial activity and molds.

Tannins extraction - industrial process

The extraction of tannin starts from the wood or from the pods of some plant species that boast a higher concentration of this substance.

1 | WOOD CUTTING AND REST: The cut logs are stacked and left to rest outside (in the open air);

2 | SHREDDING: The logs are chopped to expose as much surface as possible to water and facilitate the release of tannin;

3 | EXTRACTION: The chopped wood is dropped into large autoclaves with hot water and steam above 100 degrees;

4 | COOLING AND REFINING: The obtained tannin is cooled to precipitate the not completely soluble substances and impurities. Tannin is purified and refined according to the final use;

5 | FROM LIQUID TO POWDER: The liquid tannin can be sold as it is. However, to facilitate transport, storage and use, it can also be reduced to powder.

GEDO

Distribution et conseil : GEDO FRANCE
04 85 88 02 75 | tete@gedo.fr | tetelavage.gedo.fr
565 avenue du Prado - 13008 Marseille - France

THE PROBLEM OF OUR CLIENT

The customer who contacted us needed to wash the inside and outside of a machine for the treatment of tannin powders in the wine sector.

PNR SOLUTION

The Technical Department of PNR has developed a system of **manifolds with nozzles and washing heads** that could wash a mesh basket for the treatment of tannin powders, which rotates along its longitudinal axis inside a box.

On the upper part of the manifold, placed inside the box and around the basket, there are **9 high impact nozzles K**. Their jet is directed on the outside of the basket.

8 UBC rotating washing heads have been installed in the two C-brackets that support the manifolds structure, 4 per side of which 2 at the bottom and 2 at the top.
The action of the washing heads is aimed at cleaning the residues removed from the K nozzles, in order to keep the inside of the box clean.

At the intersection between the C-shaped manifolds and the longitudinal manifold, **three-way ball valves** have been installed, which manage the flow of the liquid, directing it first to the flat jet nozzles and then to the washing heads.

ADVANTAGES FOR OUR CLIENT

Before our intervention, the washing process was carried out manually and using high pressure washers, resulting in high costs and extensive use of water resources.

The solution proposed by PNR allows to improve the washing process, optimizing costs and times.

WATER SAVING + TIME SAVING = ECONOMIC SAVING

FOCUS ON THE PRODUCT

K FLAT FAN NOZZLE
HIGH IMPACT

K flat jet nozzles are designed with a spoon-shaped convex surface.
The liquid flow is concentrated and produces a narrow-angle flat jet with a high impact force.

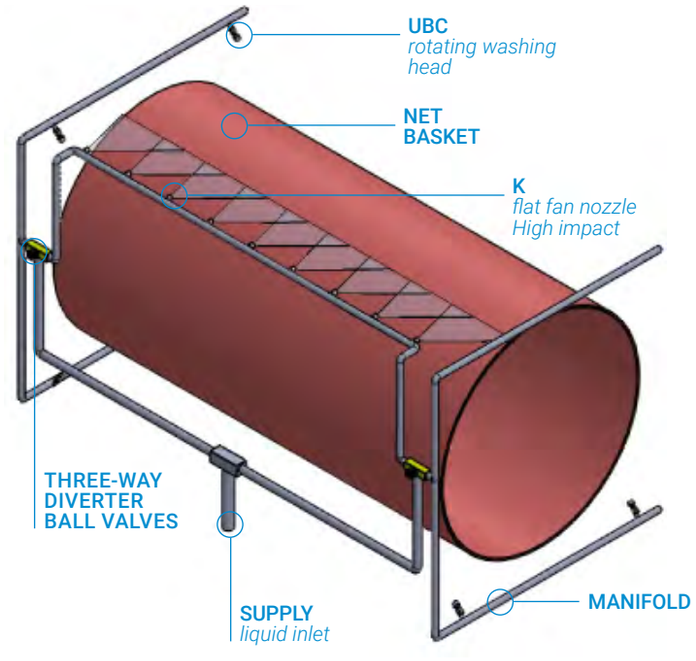
For this feature they are widely used in all work environments that require powerful jets.

K FLAT FAN NOZZLE
HIGH IMPACT

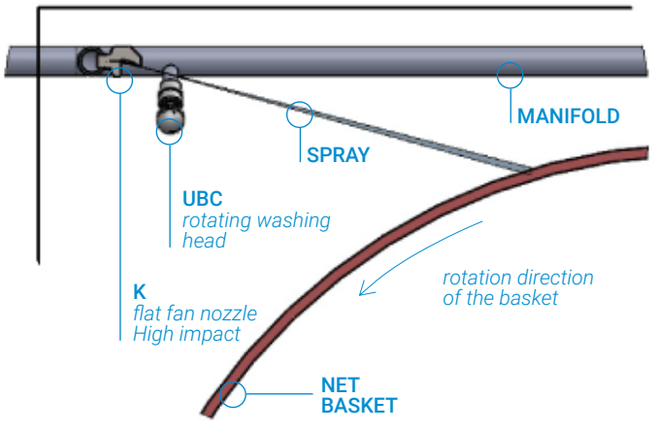


ROTATING WASHING HEAD UBC

They are built entirely in stainless steel, with the shaft mounted on a double crown of steel balls which allows the use in any position.



NET BASKET AND MANIFOLD
ISOMETRIC VIEW OF THE WASHING SYSTEM



NET BASKET AND MANIFOLD
DETAIL OF THE WASHING SYSTEM

PNR ITALIA SRL
Via Gandini 2, 27058 Voghera (PV), Italy
For more information visit www.pnr.eu
Call or write us for customized solutions!
+39 0383 344 611 info@pnr.it

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Distribution et conseil : GEDO FRANCE
04 85 88 02 75 | tete@gedo.fr | tetelavage.gedo.fr
565 avenue du Prado - 13008 Marseille - France