

## 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.

## 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

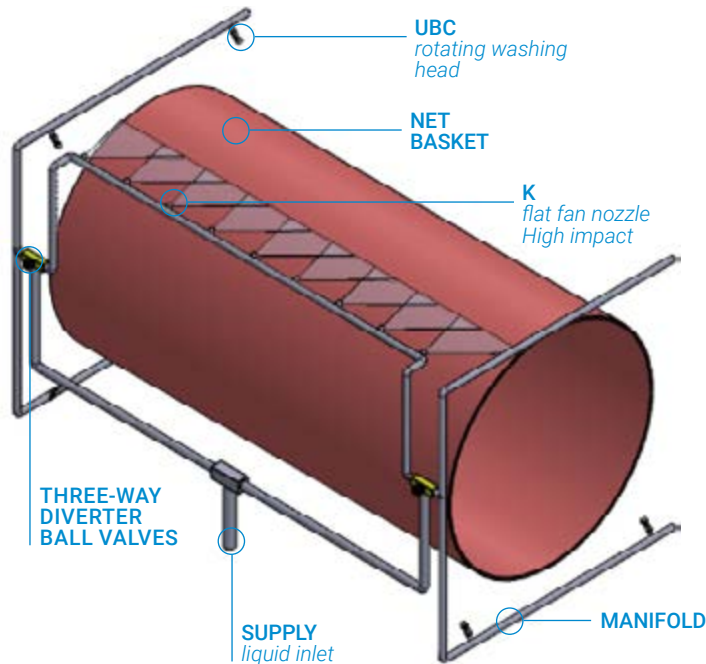
The Technical Department of PNR has developed a system of **manifolds with nozzles and washing heads** that could wash a mesh basket for the treatment of tannin powders, which rotates along its longitudinal axis inside a box.

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.



NET BASKET AND MANIFOLD  
ISOMETRIC VIEW OF THE WASHING SYSTEM

## 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.

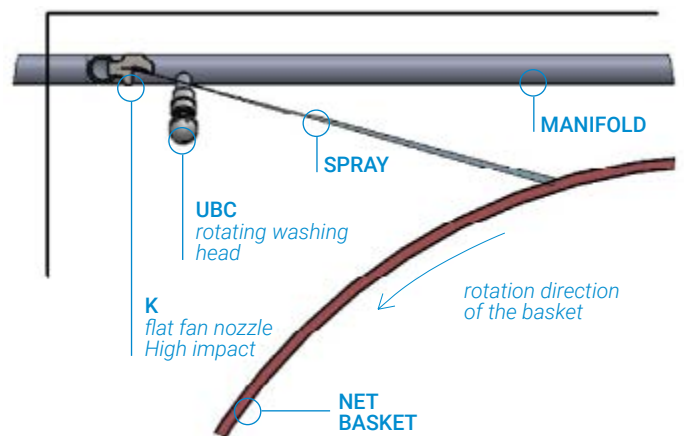
### K FLAT FAN NOZZLE HIGH IMPACT



ROTATING WASHING HEAD UBC

### 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  
DETAIL OF THE WASHING SYSTEM

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