



SPRAY NOZZLES FOR INDUSTRIAL APPLICATIONS



UH SERIES SPRAY LANCES

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Spray lances **are reliable tools used for many years in numerous industrial processes**, such as cement production, waste incineration, gas cooling, injection of chemical components, and NOx control.

PNR Italia spraying lances are **flexible and adaptable tools to every customer's need** and guarantee optimal positioning and alignment of the spray in the fume ducts.

Our engineers can design lances for any application and system.

Nozzles and lances are available in various materials to respond to every request and industrial sector.

OPERATION

Based on their operation, we can divide the lances into two types:

HYDRAULIC SINGLE-FLUID LANCES

In this lance type, the sprayed liquid is the only fluid to pass through the nozzle. Hydraulic lances are flexible tools and can respond quickly to any changes in the processes in which they are involved.

DOUBLE-FLUID LANCE AIR & LIQUID, WITH ATOMIZER

Dual fluid lances use modern technology to produce the best possible atomization. The air jet's energy modulates the liquid flow to obtain a spray of finely atomized drops at high speed.

The advantages associated with this type of lance are:

EFFICIENCY

Problems such as liquid deposits at the base of cooling towers, sludge accumulation, or water pollution are eliminated or significantly reduced.

FLEXIBILITY

Thanks to the air, an exact flow rate adjustment is possible.



APPLICATIONS

PNR Italia lances have as their primary application the cooling of fumes and gases in various industrial sectors (cement factories, waste incinerators, and others) and the injection of chemical components, the steam desuperheating, and also the control of NOx.



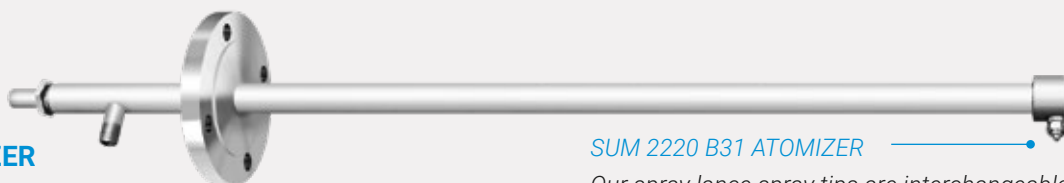
MATERIALS

PNR Italia lances are usually made of 316 / 316L Stainless Steel, but other materials resistant to chemical agents and high temperatures are available depending on the needs.

SINGLE-FLUID LANCE



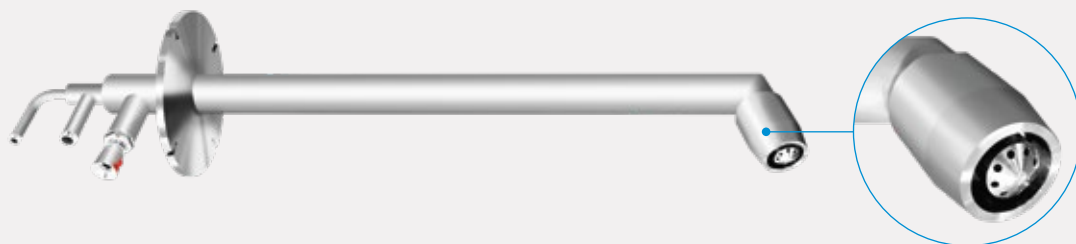
DOUBLE-FLUID LANCE WITH STANDARD ATOMIZER



SUM 2220 B31 ATOMIZER

Our spray lance spray tips are interchangeable, thanks to their unique design

DOUBLE-FLUID LANCE WITH MF ATOMIZER AND PROTECTION TUBE



ACCESSORIES AND ADDITIONAL OPTIONS

PNR Italia lances can be custom-made according to the customer's needs, and each application requires specific accessories.

Among the many options available, we can list:

PROTECTION TUBE - the lance can be inserted into a protection tube, generally made of Hastelloy alloys, protecting it from high temperatures. The tube has the function of cooling the lance itself and the liquid.

AIR AMPLIFIER - an air amplifier connected to the protective tube sucks the air from the surrounding environment, minimizing the use of compressed air from the system, with consequent savings in economic terms.

MAINTENANCE SOLUTIONS - retractable lances allow you to withdraw your nozzle, isolate it from the process, and remove it entirely for servicing without taking your process offline. Proceed with maintenance and then reinsert the lance in its seat.

CONNECTIONS - like all our nozzles, also our lances can be flanged, threaded, or with quick coupling to adapt to each system. The connection to the ducts can be flanged or tri-clamp.

DESIGN, TESTING, AND QUALITY CONTROL

All products we supply to customers have undergone strict testing.

The design of many of our lances takes place through **CFD (Computational Fluid Dynamics)** studies. Quality control and tests are conducted internally in our laboratory.

Some tests we can carry out:

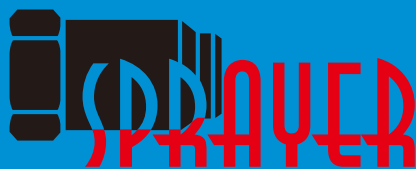
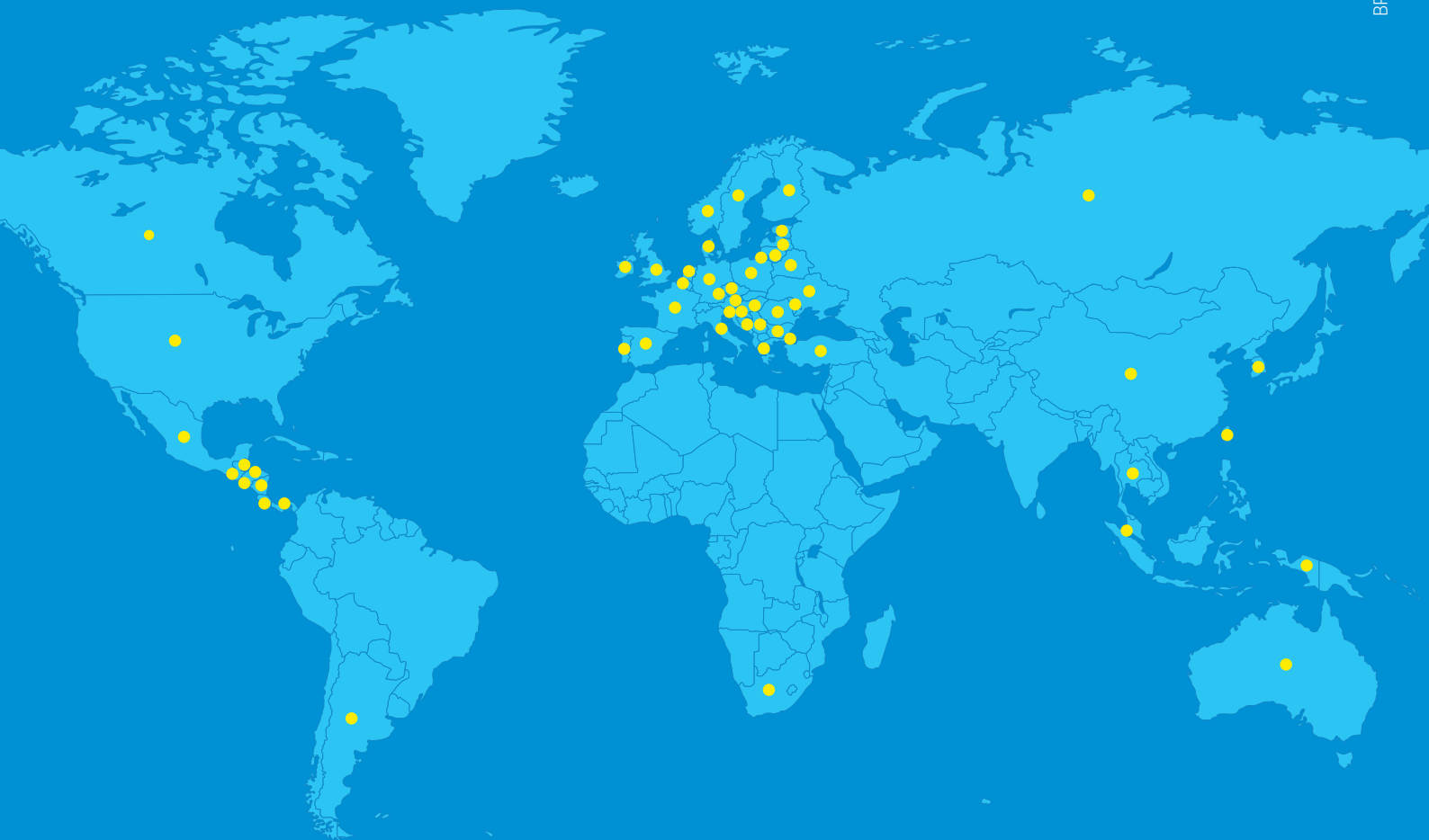
- PMI test: composition of materials
- Penetrant liquid test and x-rays of welds
- Visual and dimensional check
- Performance test: flow rate and angle vs. pressure, spray coverage
- Laser test to determine the size of the droplets in the operating conditions required by the customer.



**PNR ITALIA IS COMPLETELY
AVAILABLE FOR
CUSTOMIZED TESTS AND
TAILOR-MADE SOLUTIONS**

A GLOBAL PRESENCE ALL OVER THE WORLD.

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