

## CLASSIC ATOMIZERS

### SPRAY SET-UP

A spray set-up is made out of a liquid nozzle and an air nozzle. When assembled the air nozzle fits precisely onto the liquid nozzle and the combination of the two provides the correct inside geometry to produce the spray.

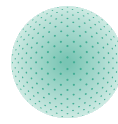
Such parameters of the two parts like the number, dimensions and profile of their inside passages determines all the characteristics of the atomized spray produced by that given set-up.

A set-up can be selected according to the choices beside.

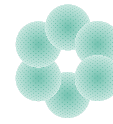
The capacity tables in the following catalog pages show the specification of each individual set-up, that is air and liquid capacities as a function of air and liquid feed pressures, and spray dimensions.

Spray dimensions are understood measured in still air for several pressure values, and cannot be precisely defined, therefore we give indicative values of the maximum throw and of the distance for which the spray maintains a consistent shape.

#### SPRAY PATTERN



**FULL CONE**  
Round spray pattern



**WIDE FULL CONE**  
Cluster spray pattern



**FLAT JET SPRAY**  
Flat spray pattern

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	Siphon feeding	

### SET-UP PARTS

The set-up code, complete with the material code, can be used to order air and liquid nozzle together.

Under the set-up code, air (An) and liquid nozzle (Ln) codes are shown separately for ordering them as spare parts, while Teflon seal and locknut can be ordered with the codes shown beside.

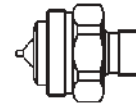
All Pnr components are made interchangeable and can be combined even if made in different materials, like for example assembling an erosion resistant set-up in stainless steel with a brass body.



LOCKNUT



AIR NOZZLE



LIQUID NOZZLE



SEAL

XMW 0010 XX

VDA 0020 E1\*

<b>Set-up code</b>	SUB 1520
<b>Ln XMW 5001xx</b>	Liquid nozzle code
<b>An XMW 4001xx</b>	Air nozzle code

\* Standard seal is Teflon, copper gasket VDA 0020 T3

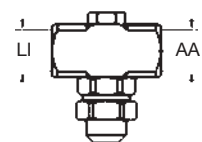
### COMPLETE ATOMIZER CODE

Once the set-up code (and therefore the spray characteristics, has been chosen) it is necessary to choose the body and the options required to come to the complete atomizer code.

A set-up can be assembled basically on two different body types:

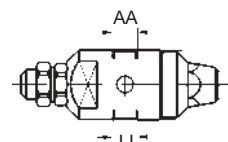
#### BASIC BODY

This body serves the only purpose of connecting the set-up inlets to the air and liquid feed lines. The plug on the body top can be replaced by several option equipment as shown next page



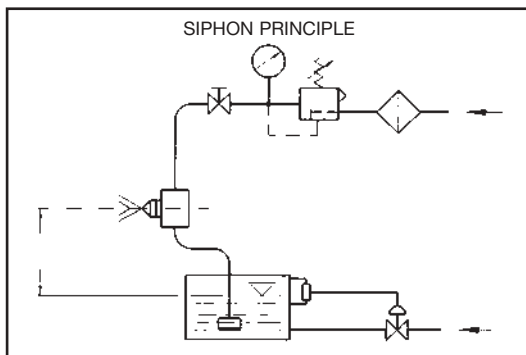
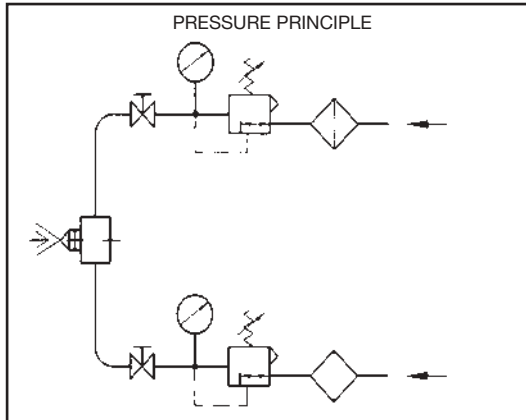
#### AIR ACTUATED BODY

This body has a built in air cylinder allowing to start and stop the spray from a remote location. Additional options are shown at page 10 and 21.



## ATOMIZZATORI CONVENZIONALI

### ATOMIZER FEEDING



An atomizer can work on two different liquid feed principles, that is

- Liquid is supplied to the atomizer through a line under pressure.
- Liquid is aspirated by the atomizer from a container at ambient pressure.

#### PRESSURE PRINCIPLE

It is the most widely used, and therefore a large range of capacities and spray patterns are available.

Liquid capacity, air capacity and droplet sizes can be adjusted by regulating the air and liquid feed pressures and the two fluids are mixed inside the atomizer prior to be ejected.

(Internal mix atomizers).

A different type allows for mixing the fluids just after they are ejected from the orifice, avoiding mutual influence of the two fluid pressure values inside a mixing chamber and allowing wider regulation range.

(External mix atomizers).

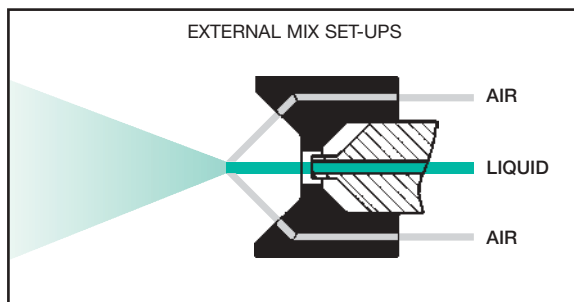
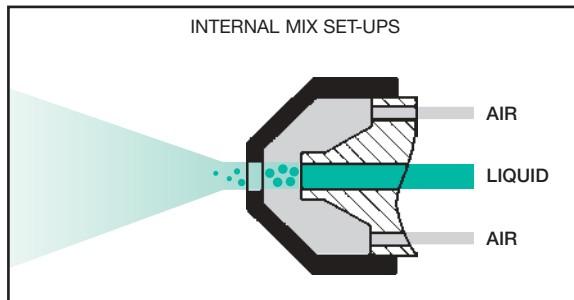
#### SIPHON PRINCIPLE

These atomizers offer lower capacity values for liquids and a simpler layout since the liquid is aspirated from the atomizer through a Venturi effect.

The liquid is simply supplied from an open container, whose level can be lower or higher than the atomizer one to fine tune the liquid capacity.

The atomizing air provides the vacuum necessary into the mixing chamber for the Venturi effect.

### JET FORMATION



The set-up can be designed in two different ways so as to obtain the following actions

- Air and liquid are mixed up in a mixing chamber inside the atomizer and then they are ejected through the orifice as a spray.
- Air and liquid are ejected from the atomizer through different orifices, and the spray is generated by the impact of the two jets.

#### INTERNAL MIX SET-UPS

The spray is ejected from one or more orifices in the wall of a mixing chamber.

In these atomizers a change in the pressure of one of the fluids inside the mixing chamber has an influence on the capacity of the second fluid and this effect reduces the ease of regulation.

As an example, increasing the air pressure will decrease the liquid quantity being atomized and the droplet size, and vice-versa.

#### EXTERNAL MIX SET-UPS

The two fluids are ejected through different orifices, their mixing happens outside the orifice.

Therefore their pressure values can be adjusted avoiding cross influence with a more precise and stable regulation.

External mix set-ups can only work with liquid feed under pressure, and only produce flat jet sprays.