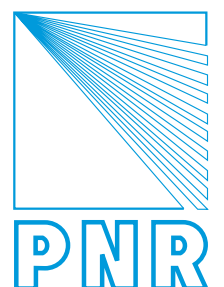
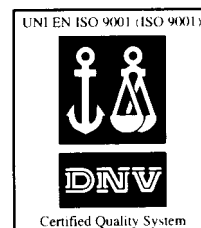




AIR ASSISTED ATOMIZERS

CTG AZ15 BR



INTRODUCTION

INDEX

Page

Introduction - Atomizing liquids and air assisted atomizers	1
Properties of an atomized spray	2
Ultrasonic atomizers	3
Atomizers and accessories	4
Atomizing units and carts	5
Classic atomizers	6
Set-ups and complete codes	7
Atomizing systems layout	8
Options and body styles	9
Pressure atomizers	12
Siphon atomizers	15
Large size atomizers	18
Accessories	21
Ambient humidification	22

TECHNICAL PUBLICATIONS

PNR manufactures a complete range of spray nozzles for general industrial applications, as well as several products and systems based on the spray technology. Complete information about our Company and our product range is available through the following publications.

PRODUCT RANGE	CTG TV10 BR
GENERAL PURPOSE SPRAY NOZZLES	CTG UG14 BR
AIR ASSISTED ATOMIZERS	CTG AZ15 BR
COMPLEMENTARY PRODUCTS AND ASSEMBLY FITTINGS	CTG AC14 BR
INDUSTRIAL TANK WASHING SYSTEMS	CTG LS14 BR
EVAPORATIVE COOLING LANCES	CTG LN14 BR
SPRAYDRY NOZZLES	CTG SP10 BR
STEELWORK NOZZLES	CTG SW04 BR

As a result of continuous product improvement, our technical publications are regularly updated, and automatically mailed to Customers whose address is registered into our Catalogue Mailing List.

We shall gladly register your name, when you mail to the nearest PNR Office or Distributor the form on page 25 duly filled with the required information.

NOTES

Our products and their performances are continuously reconsidered and improved in order to keep up with the latest state of technology.

We regret not to be able to give our Customers previous advice about these modifications: for this reason the data and the product specifications given in this Catalogue are always to be understood as indicative, and do not firmly engage our Company.

In case your specific application should imperatively require that one or more characteristics of one of our products, as given by this Catalogue, is strictly adhered to, we ask you to obtain a written confirmation about your requirements before sending your order.

All information contained into this Catalogue, including product data, product codes, diagrams and photographs are the exclusive property of Flowtech srl.

It is forbidden to reproduce any part of this Catalogue without having obtained a written permission from Flowtech srl.

Dimensions in this Catalogue are given in millimeters (mm).

All threads are manufactured according to the ISO 228 standards (European norms BS 2779 – DIN 259 – UNI 338).

Explanations about the abbreviations used in the Catalogue are given at page 25.

All Trademarks used in this Catalogue are the property of their respective owners.

AIR ASSISTED ATOMIZATION

Many different industrial processes require some liquid to be atomized into fine or very fine drops.

This result may be obtained spraying the liquid using a purely hydraulic atomizer, where the liquid is forced through a small dimension orifice at high pressure.

Two major inconveniences are to be expected by such a method:

- A It requires costly high pressure pumps and lines.
- B The small orifice of an hydraulic atomizer is very easily clogged, impairing the system reliability.

In the vast majority of industrial processes air assisted atomizers are being used, where compressed air supplies the required energy for atomizing the liquid.

This technology, while relatively expensive, allows for production of fine and very fine droplets so as to satisfy the requirements of any industrial application.

An air atomizing system has however two inherent limitations:

- A Because of the narrow inside passages it requires water and air to be properly filtered at system inlet.
- B Because of the high speed of the spray, it is only possible to obtain jets with limited spray angles.
Multiple orifice air nozzles are shown later in this catalogue to overcome this problem.

AIR ASSISTED ATOMIZERS

The first two sections of this Catalogue show the two types of atomizers which are largely used in the industry for numberless applications.

ULTRASONIC ATOMIZERS

These devices provide liquid atomization through a two step process:

- A Liquid is ejected through a number of small orifices into the nozzle outlet channel, where a high velocity air stream provides for the first liquid breakup through shear action onto the jets surface.
- B The air stream carrying the droplets impacts onto a resonator placed in front of the nozzle outlet orifice, generating a field of high frequency sound waves.
Flying through the sound wave field, the droplets undergo an additional breakup step.

Ultrasonic atomizers produce very fine sprays, with drop dimensions contained into a limited range, and can supply low capacity sprays in the range from 100 lph down.

The sound waves generate a typical noise, which requires the local noise level to be tested lower than legally admissible levels by law.

CLASSIC ATOMIZERS

These devices obtain liquid atomization by simple shear action, providing a high velocity air stream to impact onto a liquid flow.

In spite of their inherent low efficiency, and because of the low flow rates involved, conventional atomizers are the most convenient solution for most of the current applications.

A wide range of spray patterns, atomizer types and accessories has been developed in the time to suit many different industry requirements.

HUMIDIFICATION SYSTEMS

The third part of this Catalogue shows efficient air humidification systems based on our atomizers range, including accessories and control panels.

INTRODUCTION

SPRAY PROPERTIES

The atomization of a liquid by means of a compressible fluid like air, steam or a gas, is defined pneumatic, two-phase or twin-fluid atomization.

Many industrial processes require the availability of fine atomized droplets and the techniques to produce finely atomized sprays have been largely improved in the recent years, with new types of atomizers being developed.

In addition, more sophisticated process techniques have heightened the demand for a precise definition about the characteristics of the spray, whose most interesting parameters are listed below, and are now made available to the design engineer.

Arithmetic Mean Diameter AMD (D10) This is the arithmetic mean value as calculated on the diameters from the total number of drops in the sample spray.

Volume Mean Diameter VMD (D30) The diameter of that drop whose volume has the same value as the arithmetic mean of volume values on the total number of drops in the spray.

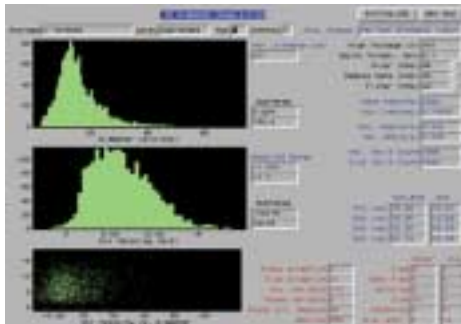
Sauter Mean Diameter AMD (D32) The diameter of that drop whose Volume/Surface ratio value is the same as the arithmetic mean of Volume/Surface values on the total number of drops belonging to the sample spray under examination.

In addition the following histograms and diagrams are usually used to define a sample spray:

- Volume percentage cumulative curve
- Distribution Curve of droplet diameters
- Distribution curve of droplet velocities.

Above parameter values and information make it possible to base process calculations upon precise data about atomization degree, heat exchange efficiency and jet behaviour in a given operational ambient.

The knowledge of the Sauter Mean Diameter (SMD or D32) value is of special importance in heat exchange calculations for evaporative cooling processes, since it makes it possible to evaluate the liquid exchange surface obtained atomizing into drops a given liquid volume.



PNR can supply upon request complete documentation containing test reports about the aforementioned parameters and additional information, for all PNR atomizers.

The diagrams beside show the distribution of droplet diameters and droplet velocities of a spray under test as available to our customers.



In the photo beside a test being performed at our laboratories. We use a computer driven laser interferometer to detect and record the spray parameters, while fluid capacities and feed pressure values are monitored through high precision instruments.

NOTE

Capacities mentioned in this Catalogue refer to processes where water is atomized by means of compressed air: atomizer performances when different fluids are used have to be determined by means of specific laboratory tests.

ULTRASONIC ATOMIZER RANGE

The range of ultrasonic atomizers, together with accessories and complete units derived from ultrasonic atomizers are shown in the following pages.

Ultrasonic atomizers offer the following distinct advantages:

- A** The droplets show not only a low mean value for SMD, but also a very narrow range for such SMD values. This means a very predictable spray behaviour, without drops much bigger or smaller than the spray SMD value : for example there will be no large drop falling to the ground before complete evaporation and causing a wet spot in an ambient humidification system.
- B** The high variations in local air pressure induced by the sound waves prevent dust and lime particles from building up at the orifice and impairing atomizer performance.

A typical application for ultrasonic atomizers is in ambient humidification systems, as shown at page 22.



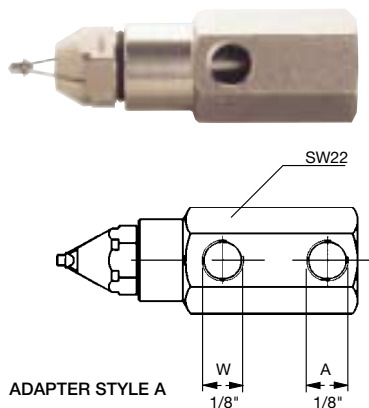
Page 4



Page 5

ULTRASONIC ATOMIZERS

NOZZLES AND ACCESSORIES



ADAPTER STYLE A

W = Water capacity (lpm)
A = Air capacity (N-cmph)

Ultrasonic atomizers MA series produce the finest atomized liquid sprays available for common industrial processes, as a full cone spray with a narrow spray angle.

Since water and compressed air are ejected from different orifices, their pressure values can be adjusted separately avoiding mutual influence: this allows for obtaining satisfactory operating conditions along a very wide range of fluid capacities.

Atomizer heads are normally assembled onto a style A adapter as shown in the diagram beside, while a choice of alternative adapter styles is given at the bottom of this page.

Materials Atomizer head B1 Aisi 303 stainless steel
Adapter B1 Aisi 303 stainless steel
 T1 Brass

ORDERING CODE

HEADS
The codes given in the capacity table beside refer to the atomizer head only, and can be used for ordering the head as a separate part.

ADAPTERS
Adapters can be ordered as separate parts completing their codes with the standard PNR material codes. Therefore replace xx with T1 for Brass and B1 for Aisi 303.

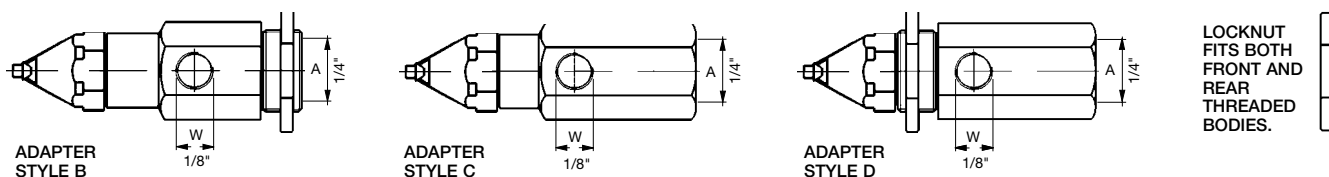
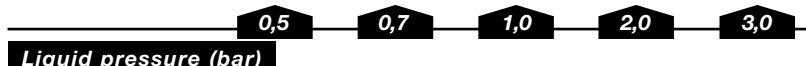
COMPLETE ATOMIZERS
To identify a complete atomizer, add to the head code the two digit suffix indicating the adapter style and material.

MAD 0801 B1 B C

Adapter material
A = T1 Brass
B = B1 Aisi 303

Adapter style
A = XMA 0103 xx
B = XMA 0101 xx
C = XMA 0102 xx
D = XMA 0100 xx

Head Code		Air pressure (bar)											
		W	A	W	A	W	A	W	A	W	A		
25°	MAD 0330 B1	2	0,10	3,1	0,12	3,0	0,15	3,1	0,27	2,7	-	-	
		3	0,05	3,7	0,10	3,1	0,12	3,6	0,20	3,7	0,32	2,9	
		4	0,02	4,7	0,05	4,8	0,08	4,4	0,18	4,4	0,25	4,2	
		5	-	-	0,02	5,3	0,05	5,3	0,13	5,5	0,22	5,2	
		6	-	-	-	-	0,02	6,1	0,12	6,0	0,18	5,8	
		6	0,23	2,7	0,28	2,9	0,37	2,7	0,72	2,2	-	-	
	MAD 0801 B1	3	0,22	3,6	0,27	3,6	0,32	3,5	0,52	3,2	0,82	2,7	
		4	0,18	4,5	0,22	4,4	0,28	4,6	0,45	4,6	0,62	4,7	
		5	0,12	5,4	0,18	5,3	0,25	5,6	0,40	5,4	0,53	5,4	
		6	0,07	6,2	0,13	6,3	0,22	6,2	0,35	6,3	0,50	6,2	
		MAD 1131 B1	2	0,50	7,3	0,60	6,6	0,73	6,9	1,15	5,6	-	-
			3	0,40	9,7	0,50	9,5	0,65	9,4	0,96	9,3	1,35	7,9
	4		0,27	11,6	0,37	11,9	0,55	11,8	0,93	12,1	1,20	11,5	
	5		0,13	13,9	0,23	13,8	0,38	14,0	0,87	14,1	1,15	13,8	
	6		0,07	18,6	0,13	18,7	0,27	8,7	0,72	18,9	1,10	19,0	
	40°		MAL 0800 B1	2	0,18	2,7	0,23	2,7	0,32	2,9	0,73	2,1	-
		3		0,15	3,7	0,18	3,9	0,25	3,5	0,50	3,7	0,85	2,6
		4		0,10	4,5	0,17	4,6	0,22	4,9	0,33	4,8	0,53	4,4
5		0,03		5,4	0,10	5,6	0,18	5,4	0,30	5,4	0,45	5,3	
6		-		-	0,03	6,2	0,12	6,3	0,27	6,2	0,38	6,3	
6		0,46		7,3	0,52	7,2	0,68	6,8	1,13	5,7	-	-	
MAL 1130 B1		3	0,38	9,5	0,47	9,7	0,65	10,2	0,95	9,4	1,27	7,7	
		4	0,23	11,8	0,35	11,8	0,50	11,9	0,88	12,1	1,15	11,8	
		5	0,13	13,5	0,23	13,9	0,37	14,0	0,82	14,1	1,10	14,2	
		6	0,07	16,0	0,13	16,2	0,27	16,2	0,63	16,2	1,03	16,3	
		MAL 1300 B1	2	0,95	14,6	1,12	16,5	1,40	16,3	2,42	10,4	-	-
			3	0,80	19,3	1,00	20,0	1,26	22,2	1,90	19,2	2,87	14,5
4			0,60	24,7	0,80	24,7	1,08	25,0	1,80	25,0	2,40	23,2	
5			0,42	29,9	0,60	30,3	0,90	30,4	1,70	30,5	2,27	29,9	
6			0,23	35,6	0,40	36,0	0,67	35,6	1,55	36,2	2,15	35,2	



Additional adapter styles offer different connecting options for connecting lines layout and for securing the atomizer when assembled through a wall, as shown below.

Locknut code VAC 0021 B1

ULTRASONIC ATOMIZERS

ATOMIZING CART

The atomizing cart allows access to areas where atomized liquids are required for providing ambient disinfection.

Our long experience with these applications has made it possible to combine ease of portability, long atomizing times, simple and reliable operation.

The stainless steel bottle, which is equipped with quick-coupling connections and a filling cover, contains both liquid supply and compressed air to provide pressure for the liquid line, while compressed air for atomizing must be available locally.

Two rubber lined wheels and a handle provide for convenient mobile capabilities.

The cart can be fitted with up to three MA atomizers, each one assembled onto a swivel joint for efficient spray orientation.

The unit can be driven both from an automatic PLC-driven and from a manual control cabinet, depending upon the application requirements.

Further details are shown on our data sheet 9121.

Weight	13 kg
Pressure tank capacity	19 liters

ATOMIZING TROLLEY



CLASSIC ATOMIZERS



The following pages show our complete range of conventional atomizers, ie devices where the liquid jet is broken down into fine droplets by shear action from a jet of impinging high velocity air.

Because of the many different application requirements, several options are available to provide the most suitable atomizer: some of those options are shown later on in this Catalogue.



Page 7

ATOMIZER SET-UP

The set-up is the actual atomizer, that is the device where the liquid flow and the air flow come to impact with each other and originate the mist spray.

A set-up is composed of a liquid nozzle and an air nozzle, whose dimensions are matched together in order to assure the desired value for flow rate, type of jet and spray angle.

Several types of set-ups are available, whose specifications are given in the following pages.



Page 8

BODY TYPES

The atomizer body serves the purpose of conveniently connecting the set-up to the feed lines for air and water, and it may include several optional devices like shut-off needles or orifice cleaning needles.

MX series bodies include an air operated cylinder for remote operation.

Our standard range of manual or automatic bodies, including additional options, is shown in the following pages.



Page 21

ACCESSORIES AND OPTIONS

Atomizer accessories, special coatings and body options to cope with specific requirements are shown later on in this catalog.

Special coatings offer increased inner surface resistance to wear and lime build up, allowing for longer time between maintenance operations.



Page 24

CONTROL CABINET

Our self contained cabinets offer a proven and professional tool to adjust your atomizing system for optimized operation.

See detailed description at page 24.

CLASSIC ATOMIZERS

SPRAY SET-UP

A spray set-up is composed of two parts, an air nozzle and a liquid nozzle. When assembled, the air nozzle fits precisely onto the liquid nozzle and the combination of the two provides the required geometry to originate the spray.

Such parameters as the number, the size and the profile of their orifices determine all the characteristics of the atomized spray which is produced by that given set-up, as follows:

TYPE OF JET



The flow rate tables in the following catalogue pages show the spray set-up codes and their operational characteristics (air and liquid flow rates versus feeding pressures, and approximate spray dimensions).

Spray dimensions, taken in still air, are given for different values of air pressure with indication of maximum throw, and distance up to which the spray remains coherent.

PRINCIPLE OF OPERATION	Internal mix	See page 9
	External mix	
TYPE OF WATER FEEDING	Pressure feeding	See diagrams at page 9
	Siphon feeding	

SET-UP PARTS

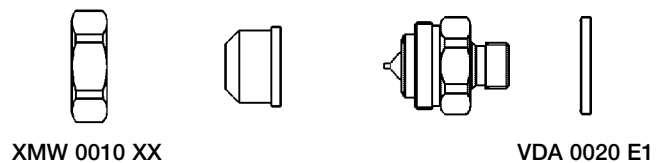
The set-up code, as given from the Catalogue and completed with the material code, can be used to order air and liquid nozzles together.

Under each set-up code, the catalogue tables show single codes for air (An) and liquid (Ln) nozzles, so that these parts can be ordered separately if replacement is needed.

The locknut and the Teflon seal used for assembling the two nozzles can be ordered too as spare parts, specifying the codes given beside.

All PNR set-up parts are interchangeable and can always be matched together, even when made out of different materials. That makes it possible, for example, to match a wear resistant stainless steel set-up with a cost effective brass body.

SCREW-CAP AIR NOZZLE LIQUID NOZZLE SEAL



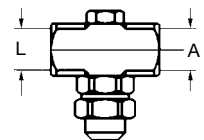
Set-up Code	SUB 1520
Ln XMW 5001	Liquid nozzle
An XMW 4001	Air nozzle

COMPLETE ATOMIZER CODE

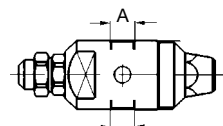
Once the desired spray characteristics have been identified (the right set-up has been chosen), the set-up code needs to be completed with the body and the option codes to precisely identify the complete atomizer code.

There are basically two types of body available, on which a set-up can be assembled:

BASIC BODY The body serves the only purpose of connecting the set-up with the air and liquid feed lines. The plug on the back of the body can be replaced by different kinds of devices, allowing to shut off or clean the liquid nozzle.



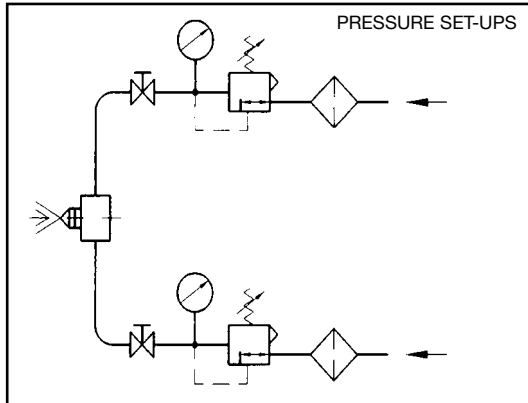
AUTOMATIC BODY Here the body has a built in pneumatic cylinder, which allows for starting and stopping the spray operation from a remote location. Shut-off only needle, cleaning needle, and single air inlet are the available options.



CLASSIC ATOMIZERS

ATOMIZER FEEDING

An atomizing system can be built so that the liquid is fed to the atomizer under pressure, or it can be alternatively obtained from an ambient pressure container. This is accomplished either by gravity feed or by liquid siphoning.



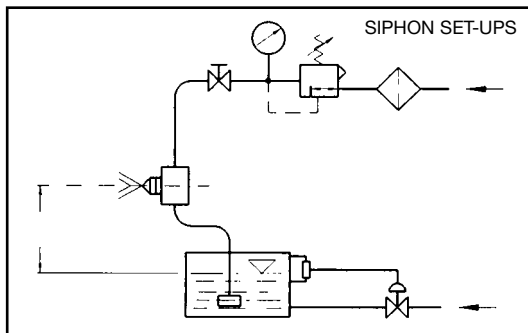
PRESSURE SET-UPS

These are used in most applications, with a wide range of spray patterns and flow rate values available.

Atomizing flow rates and droplet dimensions are obtained by adjustment of the pressure value in the two fluids.

At a given liquid pressure, the air pressure can be adjusted until the best suited flow rate values and droplet size are reached.

As an example, increasing air pressure will reduce the liquid flow rate, and produce finer droplets.



SIPHON SET-UPS

These set-ups deliver the lowest possible flow rates for an air assisted atomizer and allow for a very simple system lay-out.

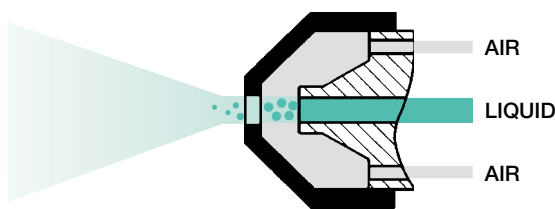
They make it possible to spray additives in a simple way from an ambient pressure container.

The same adjustment procedure for atomizing conditions applies for the pressure set-ups.

In addition, the liquid flow rate can be changed adjusting the height of the liquid container with respect to the atomizer, both on siphon and on gravity feed.

PRINCIPLE OF OPERATION

The set-up can be so designed that air and liquid are mixed inside the atomizer, and ejected through the same orifice, or that air and liquid impact, mix and generate the atomized spray after having been ejected from the atomizer through separate orifices.



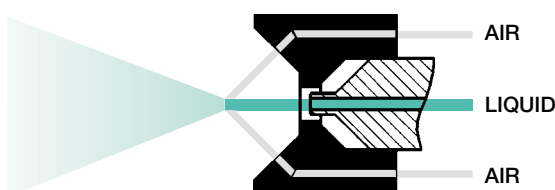
INTERNAL MIX SET-UPS

The most commonly used type, with a wide range of flow values and spray patterns available.

The set-up is designed in such a way that two fluids come in contact inside the nozzle, and the resulting mist spray exits from the nozzle orifice (s).

In these set-ups, changes in the pressure value of one of the fluids will affect the flow rate of the other one.

Increasing air pressure will result in lower liquid flow rate and finer droplets, and vice-versa.



EXTERNAL MIX SET-UPS

Here the two fluids exit from separate orifices, they impact and mix outside the nozzle, pressure values can be easily and independently adjusted and their flow rates easily controlled.

Also, viscous or contaminated liquids can generally be atomized with an external mix set-up.

Increase in air pressure will result in finer atomization, but normally the spray droplet size is slightly larger as compared to an internal mix set-up.

These set-ups can only produce a flat spray pattern.

MW

BODY TYPES AND OPTIONS

BASIC BODY

COMPLETE CODE





- Replace the first two letters in the set-up code (SU) with the body code (MW).
- Add the material code for the material you require.
- Add the codes for the required options, if any.

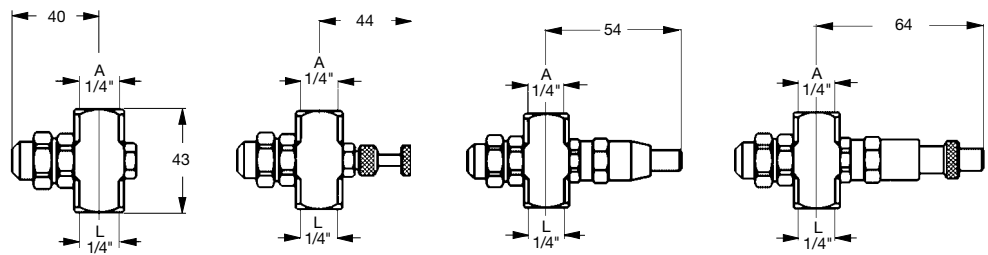
MWB 1520 **B1** **B**

MATERIALS

- B1 = Aisi 303 Grade stainless steel
- D1 = PVC
- E6 = Lucite
- T8 = Nickel plated

OPTIONS

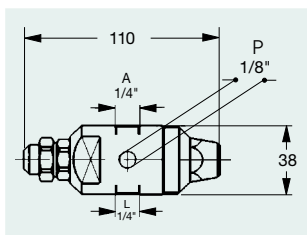
- A  STANDARD
- B  SHUT-OFF NEEDLE
- C  CLEANING NEEDLE
- D  CLEANING AND SHUT-OFF NEEDLE



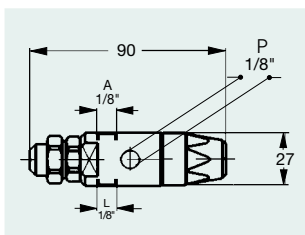
A = 1/4" Air inlet
L = 1/4" Water inlet

BODY TYPES AND OPTIONS

MX



STANDARD SIZE



MINI SIZE

- A = Atomizing air inlet
- L = Water inlet
- P = Cylinder air inlet



AUTOMATIC BODY

MX automatic bodies have a built-in pneumatic cylinder, which controls the spray operation by means of a needle opening and closing the water inlet of the liquid nozzle.

Normally atomizing air is let to flow continuously, while cylinder command air is used to start and stop liquid atomizing cycles. For longer idle times between two atomizing cycles, where too much atomizing air would be wasted while liquid is not being atomized, sequenced shut-off should be provided for the two air lines.

That means atomizing air is shut-off after liquid shut-off, and it is started before the liquid is: this procedure avoids liquid dripping at the end of atomizing cycle.

See also "Single air inlet body" option, page 21.

UNIQUE NO-DRIP NEEDLE

Other manufacturers offer conventional shut-off needles. These needles try to stop water flow through contact between two stainless steel conical surfaces, which results obviously into dripping.

Our engineers developed a unique needle to assure positive water shut-off and completely drip free operation, and solved this problem completely (Italian patent MI 96U – 000541).

All PNR automatic atomizers include this better and more consistent design.

COMPLETE CODE

- Replace the first two letters in the set-up code (SU) with the body code (MX).
- Add the material code for the material you require.
- Add the codes for the required options, if any.

MXB 1520 B1 B

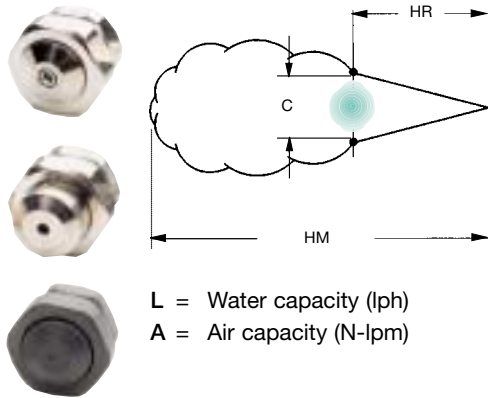
MATERIALS

- B1 = AISI 303 Grade stainless steel
- T8 = Nickel plated brass

OPTIONS

- A SHUT-OFF NEEDLE
- B CLEANING NEEDLE
- MA SHUT-OFF NEEDLE, SMALL BODY
- MB CLEANING NEEDLE, SMALL BODY

INTERNAL MIX SET-UPS



L = Water capacity (lph)
A = Air capacity (N-lpm)

FULL CONE SPRAY

These single orifice set-ups produce narrow angle full cone shaped atomization, with a spray angle value of about 20°.

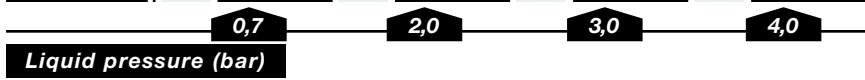
More precise details are given in the jet dimension table on the right of the page.

Jet length can reach between 2500 and 9000 mm depending upon set-up size and operating conditions.

See advice on adjustment for flow rates and droplet size at page 8.

- Materials**
- T8 Nickel plated brass
 - B1 AISI 303 stainless steel
 - B3 AISI 316 stainless steel
 - D1 PVC
 - E6 Lucite

Set-up Code	Air pressure (bar)																	
	0,7		2,0		3,0		4,0		PA	PL	HR	C	HM					
SUB 1520	0,7	2,5	15,6	1,4	6,4	13,9	2,7	6,2	23,0	3,5	7,8	28,0	-	-	-	-	-	
	0,9	1,8	19,0	1,7	5,5	16,7	2,8	5,7	25,0	3,7	7,3	29,0	0,9	0,7	300	68	2700	
	1,0	1,4	22,0	2,0	4,5	19,8	3,0	5,2	27,0	3,9	6,4	33,0	1,7	1,5	330	75	3000	
	-	-	-	2,2	3,4	24,0	3,1	4,7	29,0	4,2	5,5	38,0	2,5	2,0	360	82	3400	
	Ln XMW 5001	-	-	-	2,4	3,0	26,0	3,2	4,3	31,0	4,5	4,5	43,0	3,1	3,0	390	96	3800
	An XMW 4001	-	-	-	2,5	2,5	28,0	3,4	3,9	33,0	4,6	4,1	45,0	4,5	4,0	440	116	4400
SUB 1670	0,7	2,5	18,7	1,7	6,7	29,0	2,2	9,2	34,0	2,8	11,9	39,0	-	-	-	-	-	
	0,9	2,0	22,0	1,8	6,4	31,0	2,5	8,2	39,0	3,1	11,0	43,0	0,9	0,7	430	90	3700	
	1,0	1,6	26,0	2,0	5,9	34,0	2,8	7,2	44,0	3,4	10,1	47,0	1,5	1,5	460	105	4000	
	-	-	-	2,1	5,2	37,0	3,0	6,7	47,0	3,7	9,2	52,0	2,4	2,0	480	109	4300	
	Ln XMW 5001	-	-	-	2,2	4,8	40,0	3,1	6,3	49,0	3,9	8,4	58,0	3,0	3,0	510	116	4600
	An XMW 4002	-	-	-	2,4	4,3	43,0	3,2	5,9	52,0	4,2	7,6	62,0	3,9	4,0	560	147	5200
SUB 2142	0,9	4,8	21,0	2,0	10,7	33,0	2,7	16,5	37,0	3,4	20,0	43,0	-	-	-	-	-	
	1,1	4,1	27,0	2,1	9,8	37,0	2,8	15,4	38,0	3,7	18,4	47,0	1,5	0,7	480	100	4000	
	1,4	3,4	33,0	2,4	8,2	42,0	3,1	13,6	43,0	3,9	16,8	50,0	2,5	1,5	510	116	4300	
	1,5	3,1	35,0	2,7	6,8	48,0	3,4	11,8	49,0	4,2	15,2	55,0	3,0	2,0	530	120	4600	
	1,7	3,0	39,0	3,0	5,9	55,0	3,7	10,4	55,0	4,5	13,8	60,0	3,4	3,0	560	137	4900	
	Ln XMW 5002	1,8	2,9	41,0	3,2	5,0	59,0	3,9	9,1	61,0	4,8	12,4	65,0	4,2	4,0	600	158	5300
SUC 2376	2,0	2,8	44,0	3,5	4,1	65,0	4,2	7,9	65,0	4,9	11,8	68,0	-	-	-	-	-	
	1,1	13,0	76,0	2,8	20,0	136	3,4	32,0	149	4,6	37,0	193	-	-	-	-	-	
	1,4	8,9	91,0	3,1	16,3	149	3,9	25,0	170	5,3	29,0	220	1,7	0,7	660	209	4900	
	1,5	7,2	98,0	3,4	11,9	163	4,6	15,9	205	5,6	25,0	235	2,8	1,5	760	268	6100	
	1,7	5,8	105	3,9	7,0	187	5,3	9,1	240	6,0	21,0	250	3,9	2,0	810	286	6700	
	Ln XMW 5003	1,8	4,7	112	4,2	4,7	205	5,6	6,8	255	6,3	17,4	270	5,3	3,0	910	337	7900
SUC 2690	2,0	3,6	119	4,6	3,0	220	6,0	5,0	275	6,7	14,0	290	6,0	4,0	970	359	9100	
	2,1	2,7	127	-	-	-	6,3	3,6	290	7,0	11,0	305	-	-	-	-	-	
	0,9	31,0	57,0	2,1	53,0	96,0	2,7	80,0	103	3,8	88,0	135	-	-	-	-	-	
	1,0	25,0	66,0	2,4	41,0	112	3,0	69,0	117	4,2	73,0	156	1,0	0,7	610	182	4900	
	1,1	18,5	75,0	2,7	31,0	127	3,2	59,0	130	4,6	61,0	176	1,8	1,5	690	218	5800	
	1,3	12,9	85,0	2,8	26,0	136	3,5	49,0	146	4,9	48,0	196	2,8	2,0	760	268	6700	
SUC 3129	-	-	-	3,0	22,0	144	3,7	44,0	154	5,3	39,0	215	3,5	3,0	790	278	7000	
	Ln XMW 5004	-	-	-	-	-	3,8	37,0	161	5,6	31,0	240	4,9	4,0	910	337	8500	
	An XMW 4003	-	-	-	-	-	3,9	35,0	170	6,0	23,0	260	-	-	-	-	-	
	1,0	44,0	86,0	2,0	123	108	2,2	199	88,0	3,0	250	99,0	-	-	-	-	-	
	1,1	32,0	102	2,1	108	119	2,5	174	110	3,2	225	120	1,0	0,7	890	298	6100	
	-	-	-	2,2	95,0	130	2,8	146	133	3,5	205	141	1,7	1,5	990	349	7000	
SUC 3129	-	-	-	2,4	79,0	143	3,1	121	154	3,8	182	163	2,4	2,0	1040	385	7600	
	Ln XMW 5005	-	-	-	2,5	64,0	155	3,2	108	166	4,1	159	184	3,1	3,0	1070	396	7900
	An XMW 4004	-	-	-	2,7	52,0	166	3,4	95	176	4,6	121	225	3,8	4,0	1170	455	9100
	-	-	-	2,8	42,0	178	3,5	84	187	4,9	93,0	255	-	-	-	-	-	



1/4" SIZE

PRESSURE PRINCIPLE

WIDE ANGLE FULL CONE SPRAY

Multiple orifice set-ups shown in this page can produce wider angle atomized sprays, as a result from the combination of several standard round sprays.

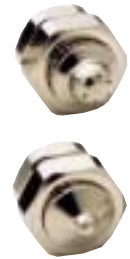
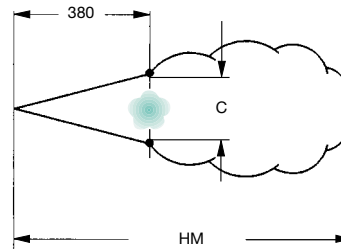
The resulting encompassed angle of the spray is approximately 60 degrees, more precise indications are given in the jet dimensions table on the right of the page.

Jet length can reach between 1.500 and 10.400 mm according to set-up size and operating conditions.

See advice on adjustment for flow rates and droplet size on page 8.

- Materials**
- T8 Nickel plated brass
 - B1 AISI 303 stainless steel
 - B3 AISI 316 stainless steel
 - D1 PVC

INTERNAL MIX SET-UPS



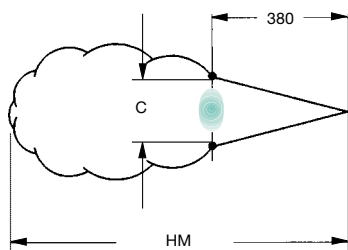
L = Water capacity (lph)
A = Air capacity (N-lpm)

Set-up Code	Air pressure (bar)																		
	0,7		1,5		2,0		2,5		3,0		3,5		4,0		PA	PL	C	HM	
	L	A	L	A	L	A	L	A	L	A	L	A	L	A					
SUL 1640	0,6	5,3	10,2	1,5	8,1	16,4	2,4	8,9	22,0	3,1	10,5	24,0	0,7	0,7	230	1500			
	0,7	4,3	12,2	1,8	6,6	21,0	2,7	8,1	26,0	3,4	9,7	28,0	1,4	1,5	240	1800			
	0,9	3,0	14,2	2,1	4,9	25,0	3,0	6,4	30,0	3,9	7,8	36,0	1,8	2,0	250	2100			
	1,0	1,7	17,0	2,4	3,2	29,0	3,2	4,9	34,0	4,2	6,1	42,0	3,0	3,0	260	2700			
	Ln XMW 5001	-	-	-	-	-	-	3,4	4,2	37,0	4,6	4,4	47,0	3,9	4,0	300	4000		
An XMW 4010	-	-	-	-	-	-	3,5	3,4	40,0	4,9	2,8	54,0	-	-	-	-			
SUM 2220	0,9	7,0	50,0	2,0	18,5	68,0	2,8	25,0	84,0	3,7	31,0	96,0	-	-	-	-			
	1,0	2,1	62,0	2,1	15,1	76,0	3,0	22,0	92,0	3,8	28,0	105	0,9	0,7	310	1800			
	-	-	-	2,2	11,7	85,0	3,1	18,5	101	3,9	26,0	113	1,7	1,5	330	2400			
	-	-	-	-	-	-	3,2	15,1	109	4,1	23,0	122	2,1	2,0	330	3200			
	Ln XMW 5003	-	-	-	-	-	-	3,4	12,1	119	4,2	20,0	130	3,2	3,0	340	4100		
An XMW 4011	-	-	-	-	-	-	3,5	9,1	130	4,6	13,6	153	4,1	4,0	370	5900			
SUL 2330	1,1	12,3	40,0	2,7	21,0	69,0	4,2	19,3	100	5,6	22,0	130	-	-	-	-			
	1,3	9,9	45,0	3,0	16,3	78,0	4,6	14,6	113	6,0	17,6	142	1,5	0,7	230	2700			
	1,4	7,9	50,0	3,2	12,3	86,0	4,9	10,8	124	6,3	14,0	152	3,0	1,5	240	4600			
	1,5	6,1	54,0	3,4	10,7	91,0	5,3	8,1	135	6,7	11,4	163	3,4	2,0	240	5500			
	Ln XMW 5003	1,7	4,9	58,0	3,5	9,3	94,0	5,6	6,2	146	7,0	9,1	174	5,3	3,0	250	7300		
An XMW 4013	1,8	3,9	62,0	3,9	6,4	105,0	6,0	4,9	157	-	-	-	6,3	4,0	300	9400			
SUM 2460	2,0	3,1	67,0	4,2	4,7	115,0	6,3	4,0	167	-	-	-	-	-	-	-			
	0,7	24,0	32,0	2,1	33,0	66,0	2,8	52,0	65,0	3,7	63,0	68,0	-	-	-	-			
	0,9	13,6	44,0	2,2	26,0	78,0	3,0	46,0	76,0	3,8	58,0	79,0	0,9	0,7	360	2100			
	1,0	7,6	57,0	2,4	18,9	89,0	3,1	39,0	87,0	3,9	52,0	101	1,5	1,5	370	3200			
	Ln XMW 5004	-	-	-	2,5	11,7	100	3,2	33,0	99,0	4,2	41,0	111	2,4	2,0	370	4100		
An XMW 4011	-	-	-	-	-	-	3,4	26,0	110	4,6	27,0	138	3,2	3,0	380	5000			
SUM 2860	1,3	36,0	85,0	3,1	53,0	156	4,2	64,0	197	5,6	74,0	245	-	-	-	-			
	1,5	29,0	102	3,2	50,0	163	4,9	51,0	230	6,0	68,0	260	2,0	0,7	330	5500			
	1,8	23,0	117	3,4	47,0	170	5,6	40,0	265	6,3	62,0	280	3,0	1,5	340	6400			
	2,0	19,7	125	3,5	45,0	177	6,0	34,0	285	6,7	56,0	295	3,9	2,0	370	8200			
	Ln XMW 5004	2,1	16,7	133	3,9	38,0	194	6,3	28,0	300	7,0	51,0	315	6,0	3,0	380	9100		
An XMW 4012	2,3	14,0	142	4,6	25,0	230	6,7	22,0	320	-	-	-	6,3	4,0	410	10400			
SUQ 3140	2,4	11,4	149	4,9	18,5	245	7,0	17,8	335	-	-	-	-	-	-	-			
	1,7	25,0	156	3,4	50,0	250	4,6	62,0	320	6,0	93,0	395	2,0	0,7	460	5500			
	1,8	19,7	167	3,5	43,0	260	4,9	47,0	345	6,3	77,0	425	3,2	1,5	470	6400			
	2,0	15,1	178	3,7	41,0	275	5,3	36,0	375	6,7	62,0	460	3,9	2,0	510	7300			
	Ln XMW 5005	2,1	11,4	193	3,9	27,0	300	5,6	26,0	405	7,0	52,0	495	5,3	3,0	530	7900		
An XMW 4014	2,3	7,6	205	4,1	23,0	310	6,0	18,9	435	-	-	-	6,3	4,0	580	9800			
	-	-	-	4,2	18,9	320	6,3	13,6	460	-	-	-	-	-	-	-			
	-	-	-	4,4	15,9	335	-	-	-	-	-	-	-	-	-	-			

0,7 2,0 3,0 4,0

Liquid pressure (bar)

INTERNAL MIX SET-UPS



L = Water capacity (lph)
A = Air capacity (N-lpm)

FLAT SPRAY

Flat fan shape atomized sprays can be produced with the set-ups listed in this page.

Precise dimensions of the atomized jet for each set-up can be obtained from the table on the right.

Jet length can reach between 1.800 and 5.200 mm, according to set-up size and operating conditions.

See advice on adjustment for flow rates and droplet size at page 8.

- Materials**
- T8 Nickel plated brass
 - B1 AISI 303 stainless steel
 - B3 AISI 316 stainless steel
 - D1 PVC

Set-up Code	Air pressure (bar)																
	0,7		2,0		3,0		4,0		PA	PL	C	HM					
	L	A	L	A	L	A	L	A									
SUU 2101	0,7	5,5	24	2,0	8,6	42	2,7	11,2	52	3,9	12	69	1,1	0,7	460	2600	
	0,9	4,7	27	2,2	7,5	47	3,0	10,1	56	4,6	9,7	81	2,1	1,5	660	3000	
	1,0	4,1	31	2,5	6,2	52	3,2	9,1	62	5,3	7,5	93	2,8	2,0	760	3200	
	1,1	3,5	34	2,8	5,2	57	3,5	8,1	66	6,0	5,3	104	3,5	3,0	860	3400	
	1,3	3,0	37	3,1	4,2	63	4,2	5,4	79	6,3	4,3	110	6,0	4,0	940	4000	
	1,4	2,5	40	3,2	3,7	65	4,6	4,2	85	6,7	3,3	116	-	-	-	-	
Ln XMW 5001 An XMW 4020	1,5	2,0	44	3,4	3,2	68	4,9	3,1	91	7,0	2,4	122	-	-	-	-	
SUU 2160	1,3	3,9	30	3,0	6,1	52	3,9	9,4	60	5,3	10,2	78	1,5	0,7	460	1800	
	1,4	3,0	33	3,1	5,3	54	4,2	7,2	67	5,6	8,3	84	2,7	1,5	690	2000	
	1,5	2,3	35	3,2	4,5	57	4,6	5,3	73	6,0	6,6	89	3,2	2,0	910	2000	
	1,7	1,8	38	3,4	3,8	59	4,9	3,8	80	6,3	5,1	98	4,2	3,0	940	2100	
	1,8	1,3	41	3,5	3,2	62	-	-	-	-	-	-	5,6	4,0	970	2300	
	2,0	1,0	44	3,9	1,8	68	-	-	-	-	-	-	-	-	-	-	
Ln XMW 5002 An XMW 4022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUM 2167	1,0	9,0	25	2,4	11,6	48	3,1	15,6	56	4,2	17,1	73	1,4	0,7	170	3000	
	1,1	7,8	30	2,5	10,4	51	3,2	14,6	59	4,6	15	80	2,5	1,5	200	3700	
	1,3	6,6	32	2,7	9,40	54	3,4	13,7	62	4,9	12,8	87	3,2	2,0	220	4000	
	1,4	5,2	36	3,0	7,30	61	3,8	10,8	71	5,3	11	94	3,8	3,0	280	4200	
	1,7	3,1	44	3,2	5,50	68	4,2	8,5	82	5,6	9,4	103	5,3	4,0	330	4800	
	2,0	2,0	50	3,5	4,10	75	4,9	5,2	98	6,3	7,2	119	-	-	-	-	
Ln XMW 5002 An XMW 4021	2,2	1,1	56	3,8	2,90	81	6,0	2,3	120	7,0	6,1	134	-	-	-	-	
SUU 2171	0,9	8,2	20	2,1	13,5	36	2,7	19,1	42	4,6	16,1	69	1,1	0,7	710	2100	
	1,0	6,8	23	2,4	11,4	42	3,0	17,1	46	4,9	13,8	76	2,1	1,5	810	2400	
	1,1	5,5	27	2,7	9,20	47	3,2	15,1	52	5,3	11,5	83	3,0	2,0	890	2600	
	1,3	4,1	30	3,0	7,10	53	3,5	13,1	57	5,6	9,3	90	3,5	3,0	970	2700	
	1,4	2,9	34	3,2	5,00	59	4,2	8,1	72	6,0	7,3	97	5,6	4,0	970	3200	
	1,8	-	-	-	3,4	4,00	63	4,6	5,9	79	6,3	5,6	104	-	-	-	-
Ln XMW 5002 An XMW 4020	-	-	-	3,5	3,30	66	4,9	4,0	86	6,7	4,3	112	-	-	-	-	
SUM 2320	1,1	11,2	54	2,7	19,6	93	3,5	27	112	4,6	33	137	1,4	0,7	200	3000	
	1,3	8,5	60	2,8	17,3	98	3,7	25	116	4,9	28	149	2,4	1,5	330	3200	
	1,4	6,5	65	3,0	15,2	103	3,8	23	121	5,3	24	161	3,0	2,0	460	3400	
	1,5	5,0	71	3,1	13,2	109	3,9	21	126	5,6	19,7	174	3,7	3,0	460	3500	
	1,7	3,8	77	3,2	11,4	114	4,1	18,9	132	6,0	15,7	187	5,3	4,0	480	4000	
	2,0	-	-	-	-	-	-	4,2	17	137	6,3	12,4	200	-	-	-	-
Ln XMW 5003 An XMW 4024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
SUM 2600	1,0	17,0	23	2,4	28,0	51	3,4	38	72	3,9	65	75	1,1	0,7	150	2400	
	1,1	11,0	27	2,5	23,0	59	3,5	33	80	4,2	53	89	2,1	1,5	170	3000	
	1,3	7,6	33	2,7	18,9	66	3,7	28	89	4,6	40	108	2,8	2,0	220	3400	
	1,4	3,2	40	2,8	15,1	74	3,8	23	97	4,9	30	127	3,7	3,0	280	3600	
	1,8	-	-	-	3,0	11,7	79	3,9	19,7	105	5,3	21	149	4,9	4,0	350	4000
	2,0	-	-	-	-	-	-	4,2	13,1	120	5,6	13,8	173	-	-	-	-
Ln XMW 5004 An XMW 4023	-	-	-	-	-	-	4,6	7,2	138	6,3	3,2	225	-	-	-	-	
SUQ 2700	0,9	27,0	33	2,4	39,0	67	3,2	58	76	4,6	59	106	1,1	0,7	300	3400	
	1,0	20,0	38	2,7	30,0	77	3,5	47	87	5,3	40	132	2,4	1,5	410	3500	
	1,1	15,9	45	3,0	24,0	87	3,8	38	97	5,6	32	145	3,2	2,0	430	3700	
	1,3	12,5	48	3,2	17,8	98	3,9	34	103	6,0	26	158	3,9	3,0	480	3800	
	1,4	10,2	56	3,4	15,1	103	4,2	27	113	6,3	20	172	6,0	4,0	510	4400	
	1,5	7,6	62	3,5	12,9	109	4,6	20	126	6,7	15,9	185	-	-	-	-	
Ln XMW 5004 An XMW 4024	-	-	-	3,7	10,6	114	4,9	14,8	140	7,0	12,7	198	-	-	-	-	
SUQ 3126	1,0	29,0	90	2,1	100	119	3,0	126	140	4,1	140	181	1,0	0,7	250	3400	
	1,1	18,9	108	2,2	79,0	133	3,1	110	151	4,2	125	193	1,8	1,5	430	3800	
	-	-	-	2,4	62,0	147	3,2	95	163	4,6	89	225	2,4	2,0	460	4300	
	-	-	-	2,5	48,0	162	3,4	78	184	4,9	58	265	3,4	3,0	530	4600	
	-	-	-	2,7	36,0	177	3,5	62	193	5,3	34	305	4,9	4,0	580	5200	
	Ln XMW 5005 An XMW 4025	-	-	-	-	-	-	3,7	48	210	5,6	16,7	340	-	-	-	-
-	-	-	-	-	-	-	3,8	37	225	-	-	-	-	-	-	-	

0,7
2,0
3,0
4,0

Liquid pressure (bar)

1/4" SIZE

SYPHON PRINCIPLE

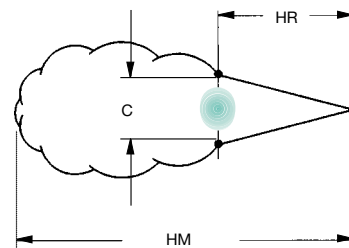
ROUND AND FLAT SPRAY

These set-ups are designed to work with water fed from an ambient pressure reservoir, either by liquid syphon aspiration or by gravity head. The flow rate tables therefore give the liquid flow rate for both suction head (green field) and gravity head (white field).

Approximate jet dimensions are given in the table on the right and advice on adjustment for flow rates and droplet size at page 8.

- Materials T8 Nickel plated brass
- B1 AISI 303 stainless steel
- B3 AISI 316 stainless steel
- D1 PVC

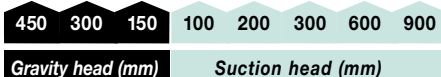
INTERNAL MIX SET-UPS



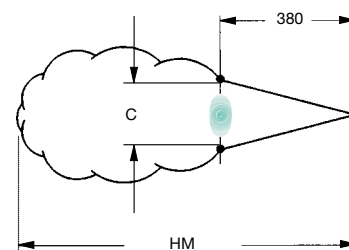
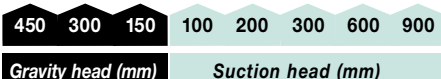
L = Water capacity (lph)
A = Air capacity (N-lpm)



Set-up Code	Air pressure (bar)										Full cone spray			
	Air capacity (N-lpm)										PA	HR	C	HM
	Water capacity (lph)													
SUC 1120	0,7	11	1,5	1,3	1,1	0,9	0,7	0,5	-	-	0,7	280	89	1800
Ln XMW 5006	1,5	17	1,8	1,7	1,5	1,3	1,2	1,1	0,6	-	1,5	280	89	1900
An XMW 4040	3,0	28	2,1	1,9	1,7	1,5	1,4	1,3	1,1	0,8	3,0	300	95	2300
	4,0	36	2,2	2,0	1,8	1,6	1,5	1,4	1,2	0,9	4,0	360	114	2600
SUC 1190	0,7	13	2,4	2,1	1,7	1,5	1,2	0,8	-	-	0,7	300	95	2100
Ln XMW 5001	1,5	20	2,8	2,6	2,4	2,1	1,9	1,6	0,9	-	1,5	330	104	2300
An XMW 4040	3,0	32	3,4	3,1	2,9	2,8	2,6	2,4	1,7	1,1	3,0	380	120	2600
	4,0	41	3,7	3,4	3,3	3,1	2,9	2,7	2,1	1,5	4,0	430	144	3000
SUC 1200	0,7	23	2,5	2,3	2,0	1,6	1,4	1,1	-	-	0,7	300	95	2400
Ln XMW 5001	1,5	36	2,9	2,8	2,5	2,2	2,0	1,7	0,9	-	1,5	330	104	2700
An XMW 4041	3,0	58	3,4	3,3	3,2	2,9	2,8	2,5	1,9	1,2	3,0	380	127	3400
	4,0	74	3,7	3,6	3,5	3,4	3,3	3,0	2,5	2,0	4,0	430	151	4000
SUC 1290	0,7	19	4,5	4,0	3,4	2,1	1,8	1,4	-	-	0,7	380	140	3000
Ln XMW 5002	1,5	31	5,3	4,9	4,4	3,5	2,9	2,7	1,8	-	1,5	410	152	3400
An XMW 4041	3,0	50	6,0	5,6	5,0	4,4	4,0	3,4	2,4	1,2	3,0	460	170	4000
	4,0	65	5,7	5,4	5,0	4,2	3,9	3,5	2,8	1,9	4,0	510	198	4600
SUC 2105	1,5	58	22,0	19,9	16,3	12,3	10,5	8,3	2,8	-	1,5	460	137	3700
Ln XMW 5004	3,0	88	25,0	23,0	19,5	16,7	14,2	11,5	6,4	2,8	3,0	510	161	4300
An XMW 4042	4,0	111	26,0	24,0	21,0	18,4	15,7	12,9	7,9	4,5	4,0	530	168	4900
	5,6	147	26,0	24,0	22,0	19,7	17,0	14,6	9,8	6,1	5,6	580	194	5500
SUC 2180	2,0	144	-	-	-	27,0	22,0	16,8	-	-	2,0	510	180	6700
Ln XMW 5005	3,0	190	-	-	-	30,0	26,0	21,0	-	-	3,0	530	187	7000
An XMW 4043	4,0	240	-	43,0	40,0	31,0	28,0	23,0	11,0	-	4,0	580	215	7600
	5,6	315	44,0	42,0	39,0	31,0	28,0	24,0	16,7	8,3	5,6	630	245	8200



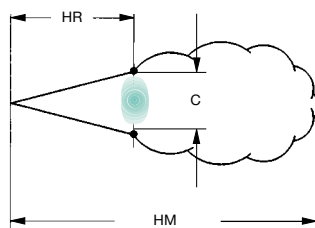
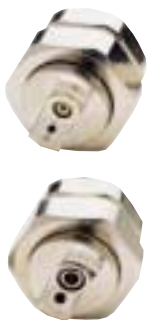
Set-up Code	Air pressure (bar)										Flat spray		
	Air capacity (N-lpm)										PA	C	HM
	Water capacity (lph)												
SUQ 0860	0,7	28	1,3	1,2	1,1	1,0	1,0	0,8	0,6	0,5	0,7	380	2100
Ln XMW 5002	1,5	43	1,2	1,1	1,0	0,9	0,9	0,8	0,7	0,5	1,5	380	2100
An XMW 4026	2,0	50	0,8	0,8	0,7	0,6	0,5	-	-	-	2,0	380	1800
SUQ 1280	1,5	56	3,7	3,5	3,3	2,9	2,8	2,5	2,3	2,1	1,5	380	2700
Ln XMW 5007	2,0	65	3,4	3,3	3,1	2,8	2,7	2,6	2,4	2,2	2,0	420	2700
An XMW 4027	3,0	87	2,8	2,7	2,5	2,4	2,2	2,1	1,9	1,7	3,0	460	3000
	4,0	110	1,9	1,8	1,6	1,5	1,3	1,2	-	-	4,0	480	2700
SUQ 1370	1,5	68	5,1	4,8	4,5	3,8	3,7	3,5	3,0	2,4	1,5	270	3400
Ln XMW 5003	2,0	78	4,9	4,7	4,4	3,6	3,4	3,2	2,9	2,3	2,0	280	3400
An XMW 4028	3,0	103	3,4	3,2	3,0	2,2	2,0	1,7	-	-	3,0	300	3000
	3,5	117	2,2	2,0	1,7	-	-	-	-	-	-	-	-
SUQ 1540	1,5	63	7,6	7,2	6,6	5,7	5,4	5,1	4,6	3,7	1,5	270	3400
Ln XMW 5003	2,0	73	7,6	7,3	6,8	5,9	5,7	5,5	5,0	4,2	2,0	290	3400
An XMW 4029	3,0	96	6,4	6,1	5,7	5,0	4,5	4,1	3,3	-	3,0	330	3400
	3,5	110	4,2	3,7	3,2	2,6	-	-	-	-	-	-	-



L = Water capacity (lph)
A = Air capacity (N-lpm)



EXTERNAL MIX SET-UPS



L = Water capacity (lph)
A = Air capacity (N-lpm)

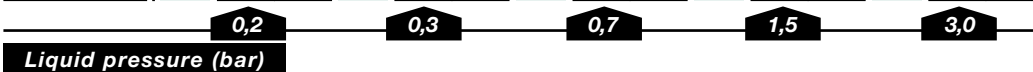
FLAT SPRAY

These set-ups are designed so that liquid and air are ejected from different orifices and impact outside the nozzle, producing the atomized spray.

They are therefore recommended for atomizing viscous liquids. Approximate jet dimensions, depending upon set-up size and operating conditions are shown on the right. Detailed information can be found on page 8.

Materials
T8 Nickel plated brass
B1 AISI 303 stainless steel
B3 AISI 316 stainless steel

Set-up Code	Air pressure (bar)																				
	L		A		L		A		L		A		L		A		PA	PL	C	HM	HR
SUL 2110	0,2		25	0,4		26	0,7		31	1,4		45	2,8		74		0,2	0,2	230	900	150
	0,4		26	0,7		31	1,1		40	1,8		54	3,5		85		1,1	0,2	230	1200	150
	0,7		31	1,1		40	1,4		45	2,1		60	4,2		102		1,4	0,4	230	1200	150
	1,1	2,8	40	1,4	3,5	45	1,8	5,3	54	2,8	7,8	74	4,9	11	119	1,4	1,4	250	1500	180	
	1,4		45	1,8		54	2,1		59	3,5		85	5,3		128	1,8	0,7	240	1500	150	
	Ln XMW 5006 An XMW 4030	1,8		54	2,1		59	2,8		74	4,2		102	5,6		139	2,8	1,4	280	1800	180
	2,1		59	2,8		74	3,5		85	5,6		139	6,3		159	4,9	2,8	240	2400	180	
SUT 2111	0,4		22	0,4		22	0,4		25	0,6		34	0,7		34		0,6	0,7	400	1800	300
	0,5	2,8	25	0,5	3,5	25	0,6	5,3	28	0,7	7,8	34	1,1	11	45	1,4	1,5	410	1800	350	
	0,5		27	0,6		28	0,7		34	1,1		45	1,8		62	1,4	1,5	410	2700	300	
	An XMW 4031	0,6		28	0,7		34	0,9		40	1,4		54	2,5		79	1,1	2,0	480	2600	350
SUR 2166	0,4		26	0,7		31	1,1		40	1,8		54	3,2		82		0,4	0,2	220	1000	140
	0,7		31	1,1		40	1,4		45	2,1		59	3,5		85		1,4	0,2	220	1700	150
	1,1		40	1,4		45	1,8		54	2,8		74	4,2		102		1,8	0,4	230	1800	165
	1,4	4,5	45	1,8	5,5	54	2,1	8,3	59	3,5	12,2	85	4,9	16,6	119	1,8	1,4	290	2100	190	
	1,8		54	2,1		59	2,8		74	4,2		102	5,3		127	2,1	0,7	250	1800	180	
	Ln XMW 5001 An XMW 4030	2,1		59	2,8		74	3,5		85	4,9		119	6,3		159	3,5	1,4	300	2400	220
	2,8		74	3,5		85	4,2		102	6,3		159	6,7		164	5,3	2,8	250	3000	190	
SUV 2172	0,4		22	0,4		22	0,6		28	0,7		34	1,1		34		0,7	1,5	580	1800	460
	0,6	4,5	28	0,7	5,5	34	0,7	8,3	34	1,4	12,2	54	1,4	17,2	54	1,4	1,5	560	2400	430	
	0,7		34	1,1		45	1,4		54	2,1		71	2,1		71	1,8	2,0	580	2700	460	
	An XMW 4031	1,1		45	1,4		54	2,1		71	2,5		79	2,5		79	1,8	3,0	660	2900	480
SUS 2330	0,7		31	1,1		40	1,4		45	2,5		68	3,5		85		0,7	0,2	250	1200	165
	1,1		40	1,4		45	1,8		54	2,8		74	4,2		102		1,8	0,2	250	1800	165
	1,4		45	1,8		54	2,1		59	3,5		85	4,9		119		2,1	0,4	240	1800	180
	1,8	8,5	54	2,1	10,4	59	2,8	15,9	74	4,2	23	102	5,3	33	127	2,5	1,4	320	1800	200	
	2,1		59	2,8		74	3,5		85	4,9		119	5,6		139	2,8	0,7	300	2300	190	
	Ln XMW 5002 An XMW 4030	2,8		74	3,5		85	4,2		102	5,6		139	6,3		159	4,2	1,4	360	3000	200
	3,5		85	4,2		102	4,9		119	6,3		159	7,0		176	5,3	2,8	300	4000	200	
SUV 2331	0,4		25	0,4		25	0,4		25	0,7		34	1,4		34		0,6	0,7	630	1500	480
	0,5	8,5	27	0,6	10,4	28	0,6	15,9	28	0,9	23	40	1,8	33	62	0,7	1,5	630	1800	480	
	0,6		28	0,7		31	0,7		34	1,1		45	2,1		45	1,4	1,5	660	2400	530	
	An XMW 4031	0,7		34	0,8		34	0,9		40	1,4		54	2,5		79	1,8	2,0	690	2700	510
SUQ 2520	0,7		85	1,0		102	1,4		116	2,5		178	3,2		212		0,7	0,2	250	1700	190
	1,0		102	1,4		116	1,8		139	2,8		195	3,5		232		1,8	0,2	250	2700	190
	1,4		116	1,8		139	2,1		156	3,5		227	3,9		255		2,1	0,4	280	3000	190
	1,8	13,4	139	2,1	16,4	156	2,5	25	178	4,2	37	266	4,2	52	275	2,5	0,7	280	3500	220	
	2,1		156	2,8		195	2,8		195	4,9		312	4,9		314	2,5	1,4	360	3700	230	
	Ln XMW 5007 An XMW 4032	2,8		195	3,5		227	3,5		227	5,6		360	5,6		360	4,2	1,4	370	4300	230
	3,5		227	4,2		266	4,2		266	6,3		411	6,3		411	4,9	2,8	320	4900	220	
SUV 2521	0,6		91	0,7		102	1,4		156	2,1		210	3,2		285		2,1	0,7	560	4300	400
	0,7	13,4	102	1,1	16,4	130	2,1	25	210	2,8	37	260	4,2	52	360	2,1	1,5	580	4000	460	
	1,1		130	1,8		184	2,5		235	3,5		310	5,3		430	4,2	1,5	640	5200	480	
	An XMW 4033	1,4		156	2,1		210	2,8		260	4,2		360	5,6		455	3,9	2,0	690	4600	510



1/4" SIZE

PRESSURE PRINCIPLE

FLAT SPRAY

EXTERNAL MIX SET-UPS

Set-up Code	Air pressure (bar)																			
	L		A		L		A		L		A		L		A		PA	PL	C	HM
SUT 2680 Ln XMW 5003 An XMW 4032	0,7		85	1,4		116	1,8		139	2,8		195	3,5		232	0,7	0,4	270	2100	190
	1,0		102	1,8		139	2,1		156	3,2		212	4,2		275	1,8	0,7	270	3000	190
	1,4		116	2,1		156	2,5		178	3,5		227	4,9		314	2,5	1,4	330	3400	220
	1,8	17,6	139	2,5	22	178	2,8	33	195	4,2	48	266	5,3	68	340	2,8	1,4	360	3800	220
	2,1		156	2,8		195	3,5		227	4,9		312	5,6		360	2,8	1,4	370	4000	250
	2,8		195	3,5		227	4,2		266	5,6		360	6,3		411	4,2	2,1	370	4900	250
3,5		227	4,2		266	4,9		312	6,3		411	6,6		428	5,3	2,8	360	5800	230	
SUV 2681 Ln XMW 5003 An XMW 4033	0,6		91	0,7		102	1,1		130	2,5		235	3,5		310	1,8	0,7	640	3000	480
	1,1	17,6	130	1,4	22	156	1,8	33	184	3,2	48	285	4,6	68	380	2,5	1,5	640	3800	460
	1,4		156	1,8		184	2,5		235	3,9		330	6,0		475	4,2	1,5	580	4900	430
	1,8		184	2,1		210	2,8		260	4,2		360	6,7		525	4,2	2,0	610	5200	430
SUN 3101 Ln XMW 5004 An XMW 4032	1,0		102	1,8		139	2,5		178	3,2		212	3,9		255	1,0	0,2	250	2700	200
	1,4		116	2,1		156	2,8		195	3,5		227	4,2		275	2,1	0,2	290	3000	220
	1,8		139	2,5		178	3,2		212	3,9		246	4,6		297	2,8	0,4	360	3500	240
	2,1	36	156	2,8	45	195	3,5	68	227	4,2	100	266	4,9	141	314	3,2	1,4	390	3700	280
	2,5		178	3,2		212	4,2		266	4,9		312	5,6		360	3,5	0,7	380	4000	270
	2,8		195	3,5		227	4,9		312	5,6		360	6,3		411	4,2	1,4	390	4800	280
3,5		227	4,2		266	5,6		360	6,3		411	7,0		453	5,6	2,8	380	5900	240	
SUN 3102 Ln XMW 5008 An XMW 4034	1,8		235	1,8		235	2,5		300	3,9		410				1,8	0,2	290	3000	200
	2,1		260	2,1		260	2,8		330	4,2		445				2,8	0,2	300	3400	200
	2,5		300	2,5		300	3,2		355	4,6		480				2,8	0,3	300	4000	200
	2,8	36	330	2,8	45	330	3,5	68	380	4,9	100	529				3,5	0,7	320	4300	220
	3,2		355	3,2		355	3,9		410	5,3		565				3,9	1,5	340	4600	220
	3,5		380	3,5		380	4,2		445	5,6		600				4,2	1,0	330	4700	230
4,2		445	4,2		445	4,9		520	6,3		685				4,9	1,5	340	5500	230	
SUW 3141 Ln XMW 5004 An XMW 4033	0,7		102	1,1		130	1,8		184	3,2		285	5,3		430	2,8	0,7	810	4000	580
	1,1	36	130	1,4	45	156	2,1	68	210	3,5	100	310	6,0	141	475	3,2	1,5	790	4300	580
	1,4		156	2,1		210	2,8		260	4,9		405	6,7		525	5,6	1,5	660	5800	510
	1,8		184	2,5		235	3,2		285	5,9		455	7,0		550	3,9	2,0	840	4300	640
SUN 3175 Ln XMW 5009 An XMW 4034	2,1		260	2,8		330	3,9		410	4,9		520				2,1	0,2	340	3500	240
	2,5		300	3,2		355	4,2		445	5,3		565				3,2	0,2	360	4300	240
	2,8		330	3,5		380	4,6		480	5,6		600				3,9	0,3	360	4900	250
	3,2	64	355	3,9	78	410	4,9	119	520	6,0	175	640				4,9	0,7	360	5500	250
	3,5		380	4,2		445	5,3		565	6,3		685				4,9	1,5	380	5500	250
	4,2		445	4,9		520	5,6		600	6,3		685				5,3	1,0	380	5800	250
4,9		520	5,6		600	6,3		685							5,6	1,5	380	6100	250	
SUN 3280 Ln XMW 5005 An XMW 4034	2,8		330	3,5		380	4,6		480	5,6		600				2,8	0,2	360	4600	250
	3,2		355	3,9		410	4,9		520	6,0		640				3,9	0,2	370	4900	250
	3,5		380	4,2		445	5,3		565	6,3		685				4,6	0,3	370	5200	250
	3,9	102	410	4,6	125	480	5,6	192	600		280					5,3	0,7	380	5500	270
	4,2		445	4,9		520	6,0		640							5,6	1,0	410	5500	270
	4,6		480	5,3		565	6,3		685							5,6	1,5	410	5800	270
4,9		520	5,6		600										6,0	1,5	410	6100	270	

0,2

0,3

0,7

1,5

3,0

Liquid pressure (bar)

GENERAL INFORMATION

MW



STANDARD BODY

When atomizers offering higher capacity values are required it is necessary to use larger size types, as shown in the following pages.

These larger atomizers, with several set-ups types, offer a liquid capacity range from 32 to 1158 liters per hour (lph).

The large size standard body has 1/2" female thread connections, while there is no automatic body available in this size.


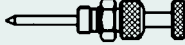


The atomizer body can be completed with the usual choice of options as shown in the following.

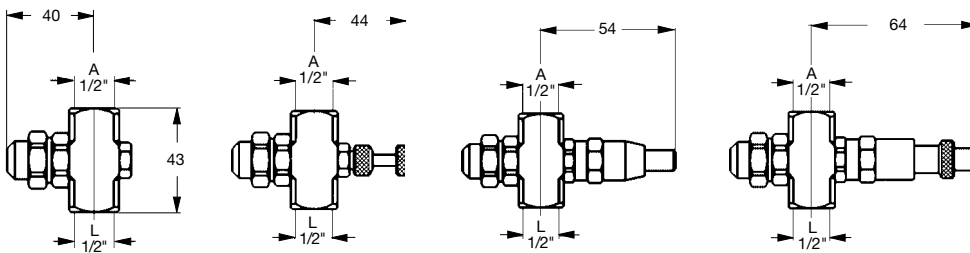
MWB 1520 B1 B

MATERIALS

- B1 = Aisi 303 stainless steel
- B3 = Aisi 316 stainless steel
- D1 = PVC
- T8 = Nickel plated brass

OPTIONS

- A  STANDARD
- B  SHUT-OFF NEEDLE
- C  CLEANING NEEDLE
- D  CLEANING AND SHUT-OFF NEEDLE



A = 1/2" Air inlet
L = 1/2" Liquid inlet

1/2" SIZE

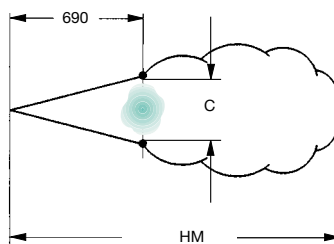
PRESSURE PRINCIPLE

LARGER CAPACITIES

Larger capacities can be obtained from the set-ups shown in this page, working exclusively on the internal mix principle and fluid pressure feed. Please note the larger dimensions for set-up and body, as shown in the diagrams on the left page. Approximate jet dimensions are given in the table on the right, for the different sizes, and advice on spray adjustment at page 8.

- Materials T8 Nickel plated brass
- B1 AISI 303 stainless steel
- B3 AISI 316 stainless steel
- D1 PVC

INTERNAL MIX SET-UPS



L = Water capacity (lph)
A = Air capacity (N-lpm)

Set-up Code	Air pressure (bar)																			
	L		A		L		A		L		A		L		A		PA	PL	C	HM
SUL 3316 Ln XMW 5201 An XMW 4110							2,1	213	176	3,1	316	214	4,2	238	351	2,1	2	690	6700	
							2,3	127	249	3,2	195	292	4,3	154	439	3,2	3	690	7300	
										3,4	107	371	4,5	100	521	4,3	4	690	8500	
SUL 3192 Ln XMW 5201 An XMW 4111	0,6	102	184	1,1	215	153	2,5	185	355	3,7	192	560	5,0	230	830	0,7	0,4	650	6100	
	0,7	57	230	1,3	124	230	2,7	146	410	3,9	150	620	5,3	158	940	1,3	1,0	670	7900	
	0,9	32	280	1,4	84	280	2,8	112	465	4,0	119	680	5,6	108	1080	2,8	2,0	650	6400	
				3,0	86	520	4,2	86	770							4,0	3,0	670	7300	
				3,1	65	580	4,6	51	910							5,3	4,0	690	8200	
SUL 3300 Ln XMW 5201 An XMW 4112	0,7	129	325	1,7	182	540	3,1	265	810	4,3	350	1000				0,9	0,4	690	7900	
	0,9	82	370	1,8	143	590	3,2	215	860	4,6	260	1080				1,7	1,0	660	7300	
	1,0	45	415				3,4	173	910	5,0	186	1200				3,4	2,0	660	7000	
				3,5	136	950										4,6	3,0	690	8500	
				3,6	120	980														
SUL 3740 Ln XMW 5202 An XMW 4113	0,7	134	315	1,3	320	440	2,1	575	570	3,0	740	710	3,9	840	860	0,7	0,4	910	3400	
	0,9	100	380	1,4	255	520	2,2	505	640	3,1	690	770	4,1	790	930	1,4	1,0	910	4900	
				1,5	200	590	2,4	440	720	3,2	630	840	4,2	740	990	2,5	2,0	810	6100	
				1,7	154	670	2,5	380	790	3,4	570	910	4,4	690	1070	3,4	3,0	740	6700	
							2,7	330	860	3,5	520	980	4,5	650	1140	4,5	4,0	730	7600	
							2,8	275	930	3,7	470	1050	4,6	600	1210					
							3,0	235	1010	3,8	420	1120	4,8	550	1280					
							3,1	195	1080	3,9	345	1190	4,9	510	1350					
										4,1	325	1260	5,1	465	1430					
													5,2	425	1490					
													5,3	390	1560					
													5,5	350	1640					
SUB 3230 Ln XMW 5201 An XMW 4101	1,3	34	350	1,7	146	365	3,0	230	510							1,4	0,4	6700		
	1,4	25	390	1,8	121	395	3,1	200	550							2,0	1,0	7300		
	1,5	20	415	2,0	102	430	3,2	176	590							3,2	2,0	8200		
	1,7	15,5	445	2,1	86	460	3,4	154	620											
				2,3	72	490	3,5	135	660											
				2,4	60	520	3,6	118	700											
SUB 3740 Ln XMW 5202 An XMW 4102	0,7	134	315	1,3	320	440	2,1	575	570	3,0	740	710	3,9	840	860	0,7	0,4	230	7000	
	0,9	100	380	1,4	255	520	2,2	505	640	3,1	690	770	4,1	790	930	1,4	1,0	280	6400	
				1,5	200	590	2,4	440	720	3,2	630	840	4,2	740	990	2,5	2,0	250	11300	
				1,7	154	670	2,5	380	790	3,4	570	910	4,4	690	1070	3,4	3,0	250	12500	
							2,7	330	860	3,5	520	980	4,5	650	1140	4,5	4,0	250	14300	
							2,8	275	930	3,7	470	1050	4,6	600	1210					
							3,0	235	1010	3,8	420	1120	4,8	550	1280					
							3,1	195	1080	3,9	345	1190	4,9	510	1350					
										4,1	325	1260	5,1	465	1430					
													5,2	425	1490					
													5,3	390	1560					
													5,5	350	1640					
SUM 3184 Ln XMW 5201 An XMW 4120				1,8	154	590	3,4	184	950							2,0	1,0	910	5800	
				2,0	119	640	3,5	157	1010							3,5	2,0	970	7000	
				2,1	93	690	3,7	133	1060											
							3,8	112	1110											
SUQ 3740 Ln XMW 5202 An XMW 4121	0,7	134	315	1,3	320	440	2,1	575	570	3,0	740	710	3,9	840	860	0,7	0,4	1190	4000	
	0,9	100	380	1,4	255	520	2,2	505	640	3,1	690	770	4,1	790	930	1,4	1,0	2110	4600	
				1,5	200	590	2,4	440	720	3,2	630	840	4,2	740	990	2,5	2,0	2080	5200	
				1,7	154	670	2,5	380	790	3,4	570	910	4,4	690	1070	3,4	3,0	2160	5800	
							2,7	330	860	3,5	520	980	4,5	650	1140	4,5	4,0	2260	6400	
							2,8	275	930	3,7	470	1050	4,6	600	1210					
							3,0	235	1010	3,8	420	1120	4,8	550	1280					
							3,1	195	1080	3,9	345	1190	4,9	510	1350					
										4,1	325	1260	5,1	465	1430					
													5,2	425	1490					
													5,3	390	1560					
													5,5	350	1640					

WIDE ANGLE ROUND SPRAY

ROUND SPRAY

FLAT SPRAY

0,35

1,0

2,0

3,0

4,0

Liquid pressure (bar)

LARGER CAPACITIES

EXTERNAL MIX - FLAT SPRAY

Set-up Code	Air pressure (bar)																			
	L		A		L		A		L		A		L		A		PA	PL	C	HM
SUM 4195 Ln XMW 5001 An XMW 4035	2,1		877	2,8		1075	3,2		1174	3,9		1358	5,6		1839	2,5	0,2	520	5800	
	2,4		962	3,2		1174	3,5		1273	4,2		1457	6,0		1952	3,5	0,4	550	6700	
	2,8	522	1075	3,5	681	1273	3,9	795	1358	4,9	953	1641	6,3	1158	2037	3,9	0,5	580	7020	
	3,2		1174	3,9		1358	4,2		1457	5,3		1754	6,6		2122	4,9	0,7	610	7630	
				4,2		1457	4,6		1556	5,6		1839	7,0		2207	6,3	1,0	660	8850	
	0,2		0,35		0,5		0,7		1											
	Liquid pressure (bar)																			

INTERNAL MIX - HOLLOW CONE SPRAY

Set-up Code	Air pressure (bar)																		
	L		A		L		A		L		A		L		A				
SUZ 3460 Ln XMW 5002 An XMW 4046	1,0	213,0	345	1,7	394	453	2,5	439	634	3,4	462	787	5,0	484	1138				
	1,1	145,0	418	1,8	324	526	2,7	372	702	3,5	416	843	5,2	439	1197				
	1,3	97,6	575	2,0	275	574	2,8	322	750	3,7	372	891	5,3	409	1254				
	1,4	59,0	538	2,1	207	642	3,0	277	818	3,8	325	956	5,5	366	1310				
				2,3	159	702	3,1	272	874	3,9	282	1019	5,6	325	1367				
				2,4	116	758	3,2	188	931	4,1	250	1084	5,8	297	1429				
				2,5	93	829	3,4	145	990	4,2	209	1135	5,9	257	1486				
				2,7	27	900	3,5	114	1050	4,4	168	1189	6,0	232	1551				
										4,5	141	1259	6,3	182	1670				
										4,6	77	1296							
	0,7		1,4		2,1		2,8		4,2										
	Liquid pressure (bar)																		

SIPHON SET-UP - ROUND SPRAY

Set-up Code	Air pressure (bar)										PA	HM		
	Air capacity (N-lpm)													
	Liquid pressure (bar)					Liquid capacity (lph)								
SUC 2230 Ln XMW 5201 An XMW 4045	0,7	360				40					1,5	6100		
	1,5	570				97	64,0				2,0	6700		
	2,0	660				117	90,0				3,0	7300		
	3,0	870				150	123,0	90			3,5	7900		
	3,5	990	300	265,0	235	163	133,0	104			4,0	8800		
	4,0	1100	305	270,0	240	170	143,0	115			5,0	9800		
	5,0	1300	315	280,0	250	183	157,0	129	53		5,6	10700		
5,6	1450	320	290,0	255	188	164,0	136	62						
	450		300		150		100		200		300		600	
	Gravity head (mm)						Suction head (mm)							

OPTIONS AND ACCESSORIES

SINGLE AIR INLET (U option)

MX atomizers can be supplied with a single air inlet port, feeding both nozzle and shut-off cylinder.

This design requires only one air valve, and stops air flow when no spray is required.

However, the liquid trapped in the nozzle at shut-off time will be atomized with low/no air pressure, with the result of some dripping at the end of each spray cycle.

This option should be considered where the time between two spraying cycles is relatively important, some liquid dripping can be tolerated and system cost is a prime factor.



SPECIAL NOZZLE COATINGS

A range of high technology coatings are available to our customers upon request, to solve problems such as solid lime build-up or excessive wear on both liquid and air nozzles.

These include coating with Teflon® and different types of extra hard linings to suit various operation requirements.

Our offices will gladly assist you with the selection of the best solution to your problems.



SPECIAL PURPOSE BODIES

Our Engineering Office can study, design and test special bodies and assembly systems to solve your specific application problems.

We can supply under confidentiality agreement special parts, specifically designed for individual customers needs, which are not advertised.



WALL MOUNTING NIPPLES

These specially designed nipples make it possible to efficiently operate a standard MW atomizer directly through the wall of tanks, or through steel sheet air ducts, without need of any other additional part or assembly fittings.

Two different models, for thin or thick walls, are available.

See our Accessories Catalogue CTG AC15 BR for details and product codes.



PRESSURE TANKS

Portable pressure tanks use compressed air to pressurize the liquid, and make it possible to operate air atomizers anywhere, without depending upon a liquid pump, or even a compressed air net.

Portable pressure tanks are made out AISI 304 grade stainless steel, with quick couplings for feed hoses, pressure tight lid, tank base and top protected by a thick rubber coating.

Details and product codes on our Accessories Catalogue CTG AC15 BR.



AMBIENT HUMIDIFICATION SYSTEMS



Page 23



Page 24

Keeping the air humidity level within the correct values in a given ambient, either in still or flowing air, can serve different purposes in a large number of industrial applications, where the material or the product being processed must be maintained in a controlled humidity condition.

In other cases an atomizing system can be used to keep ambient temperature under control by means of evaporative cooling, or be used for flying dust abatement, ambient disinfection, or even to assist an existing fire fighting system.

Performing this operation in an efficient way requires professional, well proven and reliable equipment, like our standard products shown in the following pages.

PNR Offices and Distributors can gladly supply you with additional information about how you can design and calculate your own humidification system in a fast and efficient way.

AMBIENT HUMIDIFICATION SYSTEMS

PNR automatic atomizers, MX series, and ultrasonic atomizers, MA series, are widely used as the atomizing devices for industrial humidification systems.

In the following page they are shown fitted with the accessories that make them ready for an easy and efficient installation with professional results.

Our standard control cabinets have been designed to assure safe and flexible operation for humidification systems, and proved to offer outstanding performances along years of reliable operation.

All internal components and electronic devices have been carefully chosen to assure reliability and top quality performances.

Each single cabinet is assembled and tested in our own facilities prior to delivery.

ATOMIZING DEVICES

MX ATOMIZERS

An automatic atomizer, MX series, with the convenience of its built-in air operated cylinder controlling the liquid feed, is a very efficient atomizing device for any humidification system.

They can be delivered in two different types, that is with two different air inlet ports for atomizing air and cylinder control air, or with a single air inlet port serving the two functions. In the latter case a minimum air pressure value of 2 bar is required.

Our unique drip-free shut-off needle assures perfect operation and avoids any danger of originating wet spots on the ground.

A swivel joint assembly allows for easy orientation of the atomized spray in the most convenient direction, so as to obtain optimum distribution of the evaporating droplets into the ambient air.

Liquid and air nozzles are protected by a special surface coating against the danger of lime build-up from hard water, to assure minimum maintenance cost.

These atomizers can be delivered in Nickel plated brass or Aisi 303 Stainless steel.

RECOMMENDED MODELS

MXB 2142 B1B	Stainless steel	Two air inlets
MXB 2142 B1BU		Single air inlet
MXB 2142 T8B	Brass	Two air inlets
MXB 2142 T8BU		Single air inlet



ULTRASONIC ATOMIZERS

Thanks to their optimum efficiency, ultrasonic atomizers are the best solution to produce the very fine mists required in humidification and disinfection systems, with an overall limited operating cost. They offer a long throw with an excellent evaporation rate.

However, their principle of operation requires sound waves to be produced and the consequent operational noise restricts their use to such systems where personnel is not exposed to noise levels exceeding the limit values specified by local safety regulations.

TYPES AVAILABLE

Electric drive

The atomizer is assembled onto a PVC body containing an electrovalve for water inlet, which allows for a drip-free operation. Each single atomizer has to be connected to the electric power line (220 V, 48 V or 24 V available).

Pneumatic drive

The atomizer is assembled onto a stainless steel body, where the water inlet is operated by an air pilot valve: water feed is automatically closed when air pressure falls lower than 2.5 bar. This system is very easy to be assembled since it does not require any electrical wiring, the limit being that the air driven pilot valve can only be used with plain water.

Both types are supplied complete with:

- Wall attachments in stainless steel. With swivel joint
- Quick connection fittings for air and water

RECOMMENDED ATOMIZERS

MAD 1131 B1

MAD 0802 B1

Contact our offices for further details.



CONTROL PANELS



HYDRO PNEUMATIC CABINET

Manual control cabinets are the simple and cost convenient solution for the fine tuning the operation of a complete humidification system, whatever atomizer types is used. The system can be set to produce a lighter or heavier mist according to the user requirements, just setting the pressure values for air and water to different values.

Our cabinets, which come pre-assembled and complete with all necessary devices to control air and liquid lines, offer the convenience of a tested ready-assembled unit, whose design has been optimized for the application.

They are equipped with:

- Inlet ball valves for air and water
- First water filter, 100 micron
- Fine water filter, 5 micron
- Air filter, 100 micron
- Electrovalves, for air and water lines
- Pressure regulators, for air and water, with inlet and outlet control manometer.
- System drain ball valves for air and water.

Cabinets have a steel body, protected with epoxy paint (stainless steel on request).
IP 55.9 electrical protection grade.

The table below shows the product code with reference to the the size of feed lines for air and water.
More detailed information is available on Data Sheet 9197.

Maximum System Capacity

Code				Maximum System Capacity	
	L	AA	AC	MXB 2142	MAD 1131
UMQ AA01 V0	1/4"	3/8"	1/4"	20	6
UMQ AA02 V0	3/8"	1/2"	1/4"	40	12
UMQ AB01 V0	1/4"	3/8"	*	20	6
UMQ AB02 V0	3/8"	1/2"	*	40	12

L = Water inlet

AA = Atomizing air

AC = Cylinder drive air

* These cabinets have one only air line

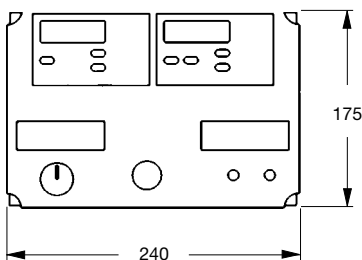
HUMIDITY CONTROL CABINET



This modern cabinet makes available to our Customer the most advanced equipment on the market.

It offers the safety and convenience of a pre-programmed microprocessor unit which not only performs all the control work for A fully automatic system operation, but has the added possibility of an easy atomizing cycle TIME adjustment to cope with any given requirement.

- The system can be operated in Manual (On/Off) or Automatic mode.
- Automatic programming for continuous operation or spray/idle cycles
- Push button pre-setting of desired humidity and temperature values
- Digital reading for actual humidity and temperature values
- Automatic stop if actual temperature lower than preset value
- Delivery includes tem,perature/humidity sensor
- 220 V, 50 Hz power feed



Product Code **UMQ B001 V0**

Further details on Data Sheet 9198

GENERAL INFORMATION

ABBREVIATIONS

A	AIR CAPACITY	N-lpm	HR	COHERENT SPRAY LENGTH	mm	W	WATER CAPACITY	lpm
AN	AIR NOZZLE	-	L	WATER CAPACITY	lph			
C	WIDTH OF SPRAY	mm	LN	LIQUID NOZZLE CODE	-			
CH	WRENCH SIZE	mm	PA	AIR PRESSURE	bar			
HM	MAX SPRAY LENGTH	mm	PL	WATER PRESSURE	bar			

PRODUCT WARRANTY

Pnr products will be replaced or repaired, at the option of Pnr and free of charges, if found defective in manufacturing, labeling or packaging.

The above warranty conditions will apply if notice of defect is received by Pnr within 30 days from date of product installation or one year from date of shipment.

The cost of above said replacement or repair shall be the exclusive remedy for any breach of any warranty, and Pnr shall not be held liable for any damage due to personal injuries or commercial losses coming from product malfunction.

Our Company Procedure for warranty requires the following steps:

- 1 Contact our Quality Manager and obtain from Pnr a return authorization number
- 2 Return the products together with our form 3DA A04 duly filled
- 3 We shall issue a test report, send you a copy and return the product (replaced or repaired).

Our Company scope is obtaining full Customer satisfaction, and we are fully aware of the inconvenience which can be originated from a defective product.

Please be assured we shall do our best to make available a perfect product in the shortest possible time.

We also provide, for products which are not defective, a product return policy as follows.

PRODUCTS DELIVERED IN ERROR FROM PNR

- 1 Obtain from Pnr a return authorization number
- 2 Return the products together with our form duly filled
- 3 Pnr shall issue a Credit Note for full product and shipping costs.

PRODUCTS ORDERED INCORRECTLY TO PNR

- 1 Obtain from Pnr a return authorization number
- 2 Return the products, at your expense, together with our form duly filled
- 3 Products shall be in original conditions, inside the original packing
- 4 A re-stocking charge of 15% applies.

NON CATALOG PRODUCTS

Can only be returned after a quotation from Pnr is obtained.

SENDING LIST

In order to receive automatically updates of our Catalogues, please photocopy the card below and mail it to any Pnr Office in a sealed envelope.

Your details will be recorded into our permanent mailing list.

CTG AZ15 BR

01	COMPANY		SPRAY NOZZLES	
02	NAME		AIR ASSISTED ATOMIZERS	
03	FUNCTION		EVAPORATIVE COOLING LANCES	
04	ADRESS		SPRAYDRY NOZZLES	
05	PHONE	FAX	TANK WASHING SYSTEMS	
06	WEB SITE	E-MAIL	ACCESSORIES AND FITTINGS	

PNR UK LTD

16, Sugarbrook Rd - Aston Fields Ind. Estate
BROMSGROVE WORCS B60 3DW
Tel. (01527) 579066 - Fax (01527) 579067
www.pnr-nozzles.com - E-mail: spraynozzles@pnr.co.uk

CTG AZ15 BR



Our products are distributed through:

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PNR Deutschland
PNR France

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