- NOZZLES
- ATOMIZERS
- FILTERS
- TANK WASHING HEADS

Amerispray

Uni-Spray Systems Inc.

Global Partnership

SPRAY NOZZLES
BOQUILLAS DE ASPERSIÓN



ATOMIZING NOZZLES
BOQUILLAS ATOMIZADORAS




TANK CLEANING NOZZLES
CABEZAS DE LAVADO DE TANQUES




PAPER MILL PRODUCTS
PRODUCTOS PARA FABRICA DE PAPEL





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F.M. S.r.L. was established in August 1972, to produce metal parts for the aeronautical industry. Their search for continuous improvement, along with the desire to enter new markets and create new products, was realized in the 80s with the development of a new range of industrial spray nozzles. The nozzle line was initially built and marketed just for the Italian market. Success in that market eventually led to sales throughout Europe, and ultimately throughout the world. Amerispray's collaboration with the factory - F.M. S.r.L., Eurospray Spray and Filter Technology S.L., will allow Amerispray to provide the highest level of products and engineering services in the world.

F.M. S.r.L. *se estableció en agosto 1972, para producir piezas de metal para la industria aeronáutica. Su búsqueda de la mejora continua, junto con el deseo de ingresar a nuevos mercados y crear nuevos productos, se realizó en los años 80 con el desarrollo de una nueva gama de boquillas de pulverización industriales. La línea de boquillas fue inicialmente construida y comercializada solo para el mercado italiano. El éxito en ese mercado llevó finalmente a ventas en toda Europa y, finalmente, en todo el mundo. La colaboración de Amerispray con la fábrica - F.M. S.r.L., Eurospray Spray and Filter Technology S.L., permitirán a Amerispray proporcionar el más alto nivel de productos y servicios de ingeniería en el mundo.*

Uni-Spray Systems Inc. is a full-service, high-precision manufacturer that offers the metal-finishing and packaging industries a single source for moulded plastic parts and assemblies. In addition to these proprietary product lines, we supply extensive custom injection moulding, engineering and design services.
Founded in 1987 as a producer of quality plastic nozzles, Uni-Spray has set itself apart from its competitors by also building and supplying custom-designed plastic piping systems that incorporate Uni-Spray nozzles and cam-operated couplings. Our in-house engineers have designed seals for popular filling machines such as Krones, Meyer, H&K, Cemco, Crown and Simonazzi.
Uni-Spray has since evolved to deliver parts and assemblies solutions to a wide range of industries. Backed by a state-of-the-art production facility and a team of professionals dedicated to excellence in customer satisfaction, Uni-Spray Systems is committed to the manufacture of high-quality industrial products. As both moulder and designer, we are uniquely positioned to quickly and effectively develop and launch new products.

Uni-Spray Systems Inc. *es una empresa productora que garantiza un servicio completo y de alta precisión ofreciendo un solo interlocutor para las industrias del tratamiento de superficies y del embalaje para las piezas plásticas impresas y ensambladas.*
Además de estas líneas de productos, Uni-Spray suministra instalación personalizada para inyección, servicios de ingeniería y de diseño.
Fundada en 1987 como productora de boquillas en plástico de calidad, Uni-Spray se ha distinguido de sus competidores al construir y suministrar sistemas de tuberías de plástico personalizados que incorporan boquillas y levas de Uni-Spray. Sus ingenieros internos han diseñado juntas para máquinas de llenado conocidas como Krones, Meyer, H&K, Cemco, Crown y Simonazzi.
Desde entonces, Uni-Spray ha evolucionado para proporcionar componentes y soluciones ensambladas para una amplia gama de industrias.
Respaldada por un centro de producción de última generación y un equipo de profesionales dedicados únicamente a la satisfacción del cliente, Uni-Spray se dedica a la producción de productos industriales de alta calidad.
Como modelador y también como diseñador, Uni-Spray se encuentra en una posición privilegiada para desarrollar y lanzar nuevos productos de manera rápida y efectiva.

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The spray nozzle.

The spray nozzle transforms the energy of a liquid into kinetic energy. The latter is utilized to break the liquid into small particles and to disperse them evenly according to the desired pattern. In some cases the kinetic energy is used to give higher penetration force to the jet. The combination of the nozzle type, nozzle size, and liquid pressure, determines the flow. As you increase pressure, you increase flow rate/ capacity. Tables are located throughout the catalog to help you determine the flow rate of each nozzle at varying pressures.

La boquilla pulverizadora.

La boquilla pulverizadora transforma la energía total de un líquido en energía cinética. Esta última es utilizada para descomponer el líquido en pequeñas partículas y distribuirlas uniformemente de acuerdo con la distribución deseada. En ciertos casos, la energía cinética es utilizada para conferir al líquido una mayor penetración. En otros, la boquilla permite obtener un caudal variable en función de la presión, la cual se puede fácilmente calcular gracias a las tablas del catalogo.

Capacity

In general the relaionship between the capacity and the pressure is the following:

$$Q_2 = Q_1\sqrt{\frac{P_2}{P_1}}$$

Q1 and P1 are known capacity and pressure. Q2 is the resulting capacity at desired pressure P2. All the tables of the catalog are based on water. For liquid with a specific gravity other than 1 multiply the catalog water capacity by the following conversion:

Caudal

En general la relación entre el caudal y la presión es la siguiente:

$$Q_2 = Q_1\sqrt{\frac{P_2}{P_1}}$$

Siendo Q1 y P1, el caudal y la presión conocidas. Q2 es el caudal resultante en función de la presión escogida P2. Todas las tablas del catálogo están basadas en el agua. Para los líquidos cuya densidad especifica es distinta de 1, es preciso multiplicar por los factores de conversión indicados en la tabla inferior:

specific gravity	peso especifico	0.8	0.85	0.9	0.95	1	1.1	1.2	1.3	1.4	1.5
conversion factors	factores de conversión	1.12	1.085	1.052	1.207	1	0.954	0.913	0.87	0.845	0.816

Type of nozzle.

There are several different nozzle designs and patterns. The ideal type and pattern to use will vary according to the application. The four basic spray patterns are:

Tipos de boquillas.

Disponemos de una amplia gama de boquillas, que permiten resolver cualquier problema de pulverización.
A continuación se describen las principales categorías:

Hollow cone spray: type A

A round pattern with the spray concentrated on the outer rim of the pattern. The interior of the pattern has no droplets, which makes it a hollow cone. The impact area of a hollow cone pattern is cylindrical. The diameter of the circumference is relative to the spray distance of the nozzle and the spray angle.

Aspersión Cono Vacio: tipo A

Las partículas se distribuyen uniformemente para formar la superficie exterior de un cono. Por tanto, el área cubierta por el chorro sobre un plano perpendicular será una circunferencia cuyo diámetro será proporcional a la distancia de la boquilla y al ángulo de la misma.

Full cone spray: type B

A round spray pattern that is filled with liquid droplets. The impact area of the full cone pattern is circular, with a relatively even distribution of droplets throughout. The diameter of the circumference is relative to the spray distance of the nozzle and the spray angle.

Aspersión Cono Lleno: tipo B

En este tipo de chorro, la parte interna del cono está uniformemente constituida por partículas líquidas. El área cubierta por la boquilla, es perpendicular al chorro, y en este caso, es un círculo cuyo diámetro está en función de la distancia y del ángulo de aspersión.

Flat jet: type C

A flat spray pattern is primarily linear. Different nozzle types can produce different types of flat spray patterns, which can vary from purely linear to more elliptical in shape. The dimension of the lateral axis is relative to the distance between the nozzle and the covered area. The dimension of the longitudinal axis is relative both to the distance from the nozzle and the spray angle.

Aspersión Salida Plana: tipo C

En este caso, el área cubierta es perpendicular al chorro con una forma de elipse alargada cuya anchura es función de la distancia entre la boquilla y el área a cubrir. La dimensión longitudinal es función de la distancia así como del ángulo de aspersión.

Atomizing nozzle: type D

In air atomizing nozzles compressed air is mixed with liquid to create fine atomization. In hydraulic atomizing nozzles the atomized spray is created through hydraulic pressure, compressed air is not needed. From the tables you can choose the type of atomizer which best satisfies your specific requirements.

Atomizadores: tipo D

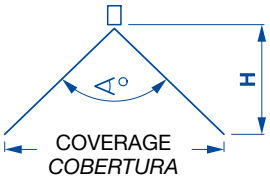
En estas boquillas, el aire comprimido se mezcla con el liquido, produciendo una atomización muy fina.
En las diferentes tablas, se pueden escoger las combinaciones de aspersion (boquilla de liquido + boquilla del aire) que mejor satisfaga sus necesidades especificas.

Spray angle.

The spray angle is usually measured near the orifice. As you increase the spray distance, the measurement of the spray width becomes less exact. Additionally, an increase in the viscosity of the liquid will reduce the spray angle. The table lists the theoretical coverages at various distances based on the spray angle. All measurements are based on spraying water.

Angulo de apsersión.

El ángulo de aspersión es medido generalmente cerca del orificio, Aumentando la distancia de medición, se pierde precisión a causa de la gravedad y de las condiciones ambientales. Es conveniente igualmente saber que un aumento de la viscosidad del producto reduce el ängulo de aspersión. En las tablas siguentes se indican las coberturas teóricas a diferentes distancias en función al ángulo de aspersión.



NB: Spray angle
NB: Angulo de aspersión

<°	THEORETICAL COVERAGE AT VARIOUS DISTANCE (H) - inches									
	DISTANCE (H) - inches									
	2	3	4	6	8	12	16	24	34	48
5°	0.2	0.3	0.3	0.5	0.7	1.0	1.4	2.1	3.0	4.2
10°	0.3	0.5	0.7	1.0	1.4	2.1	2.8	4.2	5.9	8.4
15°	0.5	0.8	1.1	1.6	2.1	3.2	4.2	6.3	9.0	12.6
20°	0.7	1.1	1.4	2.1	2.8	4.2	5.6	8.5	12.0	16.9
25°	0.9	1.3	1.8	2.7	3.5	5.3	7.1	10.6	15.1	21.3
30°	1.1	1.6	2.1	3.2	4.3	6.4	8.6	12.9	18.2	25.7
35°	1.3	1.9	2.5	3.8	5.0	7.6	10.1	15.1	21.4	30.3
40°	1.5	2.2	2.9	4.4	5.8	8.7	11.6	17.5	24.7	34.9
45°	1.7	2.5	3.3	5.0	6.6	9.9	13.3	19.9	28.2	39.8
50°	1.9	2.8	3.7	5.6	7.5	11.2	14.9	22.4	31.7	45
55°	2.1	3.1	4.2	6.2	8.3	12.5	16.7	25.0	35.4	50
60°	2.3	3.5	4.6	6.9	9.2	13.9	18.5	27.7	39.3	55
65°	2.5	3.8	5.1	7.6	10.2	15.3	20.4	30.6	43	61
70°	2.8	4.2	5.6	8.4	11.2	16.8	22.4	33.6	48	67
75°	3.1	4.6	6.1	9.2	12.3	18.4	24.6	36.8	52	74
80°	3.4	5.0	6.7	10.1	13.4	20.1	26.9	40	57	81
85°	3.7	5.5	7.3	11.0	14.7	22.0	29.3	44	62	88
90°	4.0	6.0	8.0	12.0	16.0	24.0	32.0	48	68	96
95°	4.4	6.5	8.7	13.1	17.5	26.2	34.9	52	74	105
100°	4.8	7.2	9.5	14.3	19.1	28.6	38.1	57	81	114
110°	5.7	8.6	11.4	17.1	22.9	34.3	46	69	97	137
120°	6.9	10.4	13.9	20.8	27.7	42	55	83	118	166
130°	8.6	12.9	17.2	25.7	34.3	51	69	103	146	206
140°	11.0	16.5	22.0	33.0	44	66	88	132	187	264
150°	14.9	22.4	29.9	45	60	90	119	179	254	358

Droplet size (atomization)

The major factors affecting droplet size are the capacity, liquid pressure, the spray pattern, and the nozzle type.
Usually an increase of the Flow, under the same liquid pressure, produces larger droplet sizes. An increase in pressure reduces the droplet size, while increasing the spray angle in most nozzle types. Air atomizing nozzles produce the smallest droplet sizes, full cone nozzles produce the largest droplet sizes. For every spray pattern, the table shows the median droplet sizes relative to the minimum and maximum capacity values, at a liquid pressure of 3 bar or 44 psi.

Diámetro de las gotas (granulometría)

Los principales factories que influyen sobre el diámetro de las gotas son el caudal, la presión y el tipo de boquilla. Generalmente un aumento del caudal a presión costante comporta un aumento del tamaño e las gotas. Aumentando la presión, se reduce el diámetro de las gotas, aumentando el ángulo de aspersión. Las gotas más finas se obtienen con atomizadores neumáticos y las más voluminosas con las boquillas de cono LLENO. La tabla inferior indica, para cada forma de chorro, el diámetro medio de las gotas en relación al caudal mínimo y máximo, a una presión constante de 3 bar.

TYPE OF NOZZLE *TIPOS DE BOQUILLAS*	CAPACITY *CAUDAL*	Ø MICRONS
AIR ATOMIZING NOZZLES ***ATOMIZADORES NEUMATICOS***	min 0.05 max 10	20 180
HYDRAUILC ATOMIZERS ***ATOMIZADORES HIDRAULICOS***	min 0.1 max 1.6	110 330
HOLLOW CONE NOZZLES ***BOQUILLAS DE CONO HUECO***	min 0.39 max 95	300 1900
FLAT SPRAY NOZZLES ***BOQUILLAS DE CHORRO PLANO***	min 0.39 max 31	220 2400
FULL CONE NOZZLES ***BOQUILLAS DE CONO LLENO***	min 0.74 max 104	850 3100

Impact

The spray impact depends on the capacity, pressure, and spray pattern. The highest impact is produced by solid stream and flat spray nozzles, the lowest impact would be wide angle full cones. Hollow cones can have higher impact on the outer rim and are often used for impingement in metal cleaning and paint applications.

Impacto

La fuerza de impacto de una pulverización depende principalmente del caudal, de la presión y de la forma del chorro. Los impactos más importantes se obtienen con las boquillas de chorro rectilíneo y de chorro plano, y las más débiles con las boquillas del cono lleno y cono vacio de gran ángulo de aspersión.

Nozzle wear

Nozzle wear can vary greatly based on the nozzle type, nozzle material, pressure, and liquid quality. Typically, stainless steel will have a wear life of 3 to 5 times that of brass. High pressure, as well as liquids that contain abrasives or solids, will wear nozzles at an accelerated rate.

Duración de la boquilla

El efecto de desgaste producido sobre el orificio de la boquilla, impacta un aumento del caudal y, generalmente, un deterioro de la forma del chorro. En términos comparativos se puede afirmar que, bajo idénticas condiciones de funcionamento, el acero inoxidable tiene una vida cinco veces superior al latón.

Article code

The standard material of our product is indicated in the table 1.
Amerispray may offer alternative materials for certain nozzle types, other than what is listed in the catalog.
AMERISPRAY'S products are identified by alphanumeric characters.

Codificaciones para el catálogo

El material estándar utilizado para la construcción de nuestros productos es el que sale en los cuadros de cada modelo.
Amerispray puede proporcionar inyectores con diferentes materiales de acuerdo a la norma requerida.
Los productos AMERISPRAY son identificados con códigos alfanuméricos.

Spray nozzle Identification method:

- **The first position** identify the material (see Table 1).
- **The second position** identify the connection (see Table 2).
- **The third position** identify the model of nozzle; locate the nozzle type in the catalog to determine the model.
- **The forth position** identify the capacity code; check the location in the catalog for the correspondence between model and capacity codes.
- **The fifth position** identify the spray angle; check the location in the catalog for the correspondence between model and spraying angle.
- **The sixth position** see the tables located in the catalog for this information.

Método de identificación para los Inyectores/Boquillas:

- ***La primera posición*** *identifica el tipo de material (véase la Tabla 1).*
- ***La segunda posición*** *identifica el tipo de conexión (ver Tabla 2).*
- ***La tercera posición*** *identifica el modelo, ver en cada página el modelo corecto.*
- ***La cuarta posición*** *identifica la referencia de la caudal, ver la página de la boquilla para comprobar la correspondencia entre los código y el caudal*
- ***La quinta posición*** *identifica el ángulo de pulverización, ver la página de la boquilla para comprobar la correspondencia entre los código y el ángulo de pulverización.*
- ***La sexta posición*** *identifica el código de boquilla completa.*

Amerispray Numbering System

Es.: 3/8”BGF 6.5 65° brass

Codificacion Amerispray

Es.: 3/8”BGF 6.5 65° ottone

MATERIAL *MATERIAL*	CONNECTION *CONEXIÒN*	MODEL *MODELO*	FLOW FACTOR *REFERENCIA DE CAUDAL*	ANGLE *ÁNGULO*	ARTICLE CODE *CODIGO*
O	**2**	**BGF**	**6.5**	**65°**	**O2BGF6.5**

1

MATERIAL - *MATERIAL DE FABRICACIÓN*		
COD.	**DESCRIPTION - *DESCRIPCIÓN***	
A	STAINLESS STEEL 316L	*ACERO 316L*
AF	STAINLESS STEEL 430F	*AISI 430F*
AK	STAINLESS TREATED	*AISI TRATADO*
AL	ALUMINIUM	*ALUMINIO*
AV	AVESTA 254	*AVESTA 254*
A4	STAINLESS STEEL 304	*AISI 304*
BR	BRONZE	*BRONCE*
F	STEEL	*ACERO*
G	CAST IRON	*HIERRO FUNDIDO*
GO	RUBBER	*CAUCHO*
H	HASTELLOY C276	*HASTELLOY C276*
I	STAINLESS STEEL 303	*ACERO 303*
IC	STAINLESS STEEL WITH CARBIDE INSERT	*ACERO INOXIDABLE CON CARBURO INSERTINTO*
IK	STAINLESS TREATED	*ACERO TRATADO*
INP	STAINLESS TREATED	*ACERO TRATADO*
K	KEMATAL (DERLIN)	*KEMATAL*
L	LUCITE	*LUCITE*
M	MOPLEM*	*MOPLEM**
ML	MONEL 400	*MONEL 400*
N	NICKEL - PLATED	*NIQUEL*
NY	NYLON	*NYLON*
NO	NEOPRENE	*NEOPRENE*
O	BRASS	*LATON*
OK	BRASS TREATED	*LATON TRATADO*
ONP	BRASS TREATED	*LATON TRATADO*
P	PLASTIC / PVC	*PVC*
PD	PVDF	*PVDF*
PE	PE1000	*PE1000*
PL	POLYETYLENE	*POLIETILENE*
PO	POM	*POM*
PP	POLYPROYLENE	*POLIPROPILENO*
R	COPPER	*COBRE*
T	TITANIUM	*TITANIO*
TF	TEFLON - PTE	*TEFLON - PTE*
TP	RESIN POLYAMIDES WITH CERAMIC INSERT	*RESINA POLIAMIDA CON INSERTAR*
	CERAMIC	*CERÁMICA*
V	AVP	*AVP*

2

THREAD - *CORRESPONDE A LA ROSCA DE CONEXION*			
IDENTIFYING NUMBER	**DESCRIPTION - *DESCRIPCIÓN***	**IDENTIFYING NUMBER**	**DESCRIPTION - *DESCRIPCIÓN***
0	1/8”	**A**	3”
1	1/4”	**B**	4”
2	3/8”	**C**	5”
3	1/2”	**D**	6”
4	3/4”	**E**	7”
5	1”	**F**	
6	1-1/4	**G**	7/6
7	1-1/2	**H**	1/16
8	2”	**I**	10/24
9	2-1/2	**L**	9/16”
		M6	M6
		M10	M10
		M8	M8

Quick Disconnect Nozzles

The Amerispray quick disconnect is a two-piece nozzle that is comprised of a threaded base piece and a quick disconnect spray tip. Quick disconnect nozzles will decrease the time and effort necessary to clean or change out nozzle tips. By pushing and quarter turning the tip, it is easily released. This is done by hand; no tools are necessary. Once the base piece has been positioned to its ideal alignment, the tip will automatically realign when it is reconnected, insuring proper spray orientation. The base piece comes in the following thread sizes: 1/8", 1/4", 3/8", and 1/2" (NPT or BSPT).

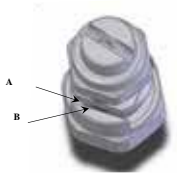
1 Make sure the threaded base seal and the spray tip O-rings are in place. Then align the spray tip with the threaded base piece.

2 Push the tip down, into the base piece.

3 With the tip pushed down, inside the base piece, quarter turn the tip to lock it into place.

4 Once the nozzle is in place, test the connection by slightly shaking the tip, without pushing the tip downward toward the base piece. The tip should be rigidly and firmly in place, with no "wiggle".

1



2

3

4

Sistema de boquillas de pulverización de conexión y desmontaje rápido

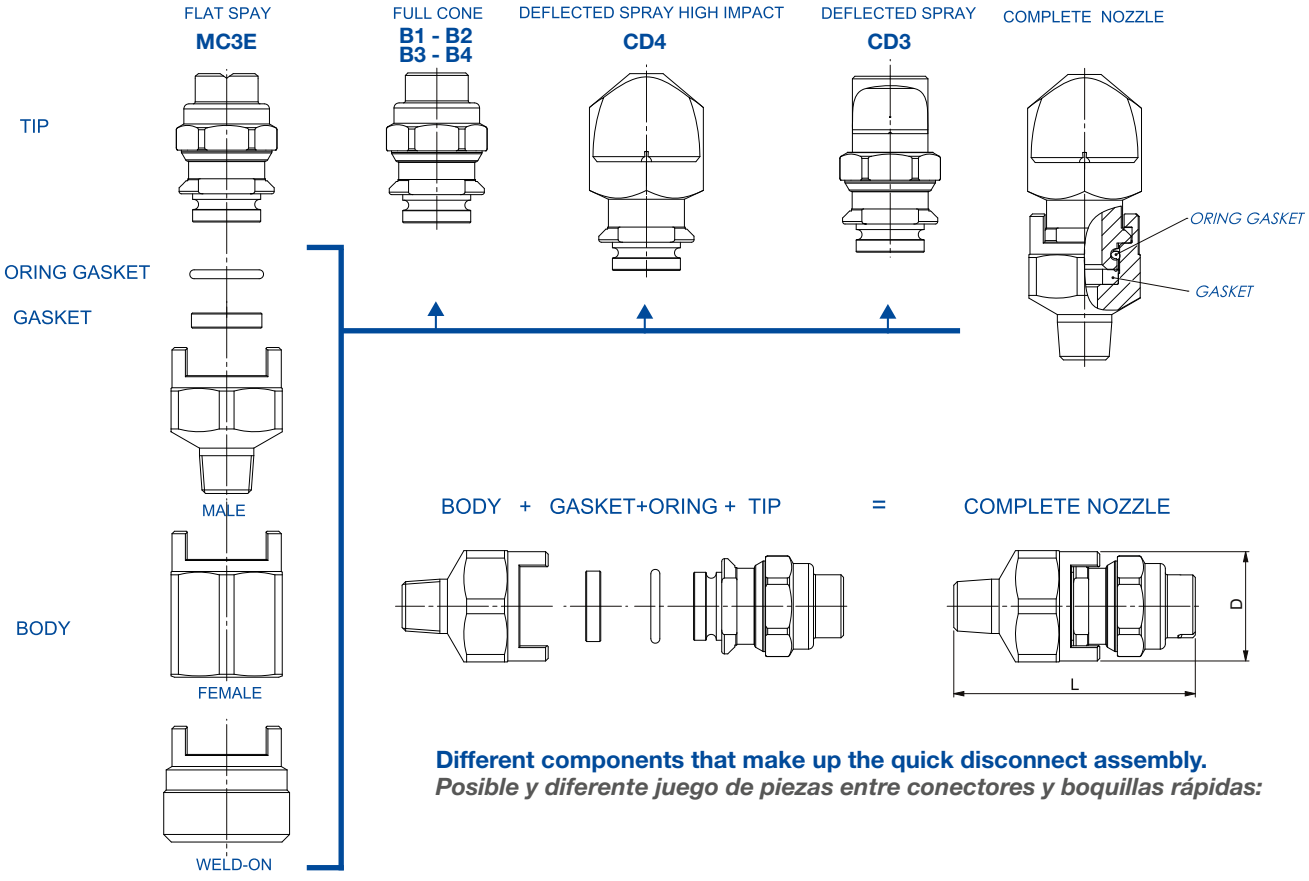
Los sistemas Amerispray de conexión y desmontaje rápido garantizan un mantenimiento más rápido sin utilizar ninguna herramienta específica.
La conexión rápida roscada asegura una correcta fijación y un correcto posicionamiento para la dirección de la pulverización
Después de atornillar el cuerpo roscado en su lugar de la instalación (en el tubo o manguito de pulverización), puede continuar con la inserción de las puntas de pulverización.
El montaje de las puntas dentro del cuerpo es extremadamente simple:

1 *Después de confirmar la colocación de la junta en la parte inferior del cuerpo y de la junta tórica en la punta, colocar la cabeza para tener el plan A paralelo a B*

2 *Empujar la cabeza hacia la parte inferior del cuerpo presionando la junta*

3 *Mientras presiona, gire la cabeza 90 grados hasta escuchar el "clic" que indica la correcta posición dentro de su asiento.*

4 *Asegúrese de que está en su posición haciendo con una ligera presión en la cabeza, tratando de ponerla en el sitio. No debe girar, pero tener leve movimiento axial de 2/3°. El sitio de enganche de posición debe ser como en las siguientes imágenes.*



Different components that make up the quick disconnect assembly.
Posible y diferente juego de piezas entre conectores y boquillas rápidas:

HOLLOW CONE NOZZLES
BOQUILLAS DE CONO HUECO

This spray pattern is obtained using a liquid inlet tangential to the whirl chamber. Typically, hollow cone nozzles have a finer droplet size and a uniform cylindrical spray distribution. Vane-less hollow cones also have a reduced likelihood of clogging.

Materials: Brass, AISI 303 and 316L stainless steel.
On request other potential materials

Thread: Thread connections are available in NPT and BSPT.

Este tipo de pulverización se obtiene gracias a una entrada tangencial de liquido en la cámara de turbulencia. A la salida del orificio de la boquilla se obtiene de este modo una pulverización de cono hueco, finamente nebulizada y distribuida uniformemente. La ausencia de hélice interior limita los problemas de obstrucción.

Materiales: Latón, Acero Inoxidable 303, 316, PVC y otros.

Rosca: NPT or BSPT

FA1 - FAA1
RIGHT ANGLED HOLLOW CONE
CONO HUECO TANGENCIAL

Characteristics
- Removable cap
- 90° spray from the inlet axis

Caracteristicas
- *Cabeza intercambiable.*
- *Pulverización a 90° en relación al eje de entrada del líquido.*

Applications
- Scrubbing and cooling of air and gas
- Dust control
- Surface treatment
- Humidification
- Chemical processes

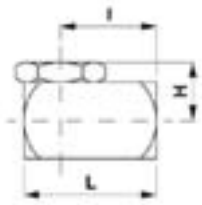
Aplicaciones
- *Lavado y enfriamiento de aire y gas*
- *Control de polvo*
- *Tratamiento de superficies*
- *Humidificación*
- *Tratamientos químicos*

Material
Brass, 303SS, and 316SS, others available upon request.

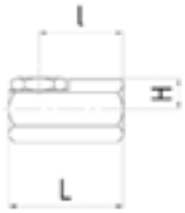
Dimensions (inches)

Connection	I	L	H
1/8"	0.689	0.984	0.512
1/4"	0.945	1.339	0.591
1/4" FAA1	0.866	1.181	0.472
3/8"	0.945	1.339	0.571
1/2"	1.378	1.969	0.866
3/4"	1.575	2.205	0.984
3/8" - 30.1	0.945	1.339	0.748
3/8" - 50.3	0.945	1.339	0.669

FA1



FAA1



Type of nozzle	Diam. Orifice (in.)	Min. Passage (in.)	PRESSURE (psi) 7.00	10.00	20.00	**40.00**	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 F – A1 – 0.5	0.043	0.035	0.04	0.05	0.07	**0.10**	0.12	0.14	0.16	65
1/8 F – A1 – 1	0.055	0.055	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	70
1/8 F – A1 – 2	0.079	0.083	0.17	0.20	0.28	**0.40**	0.48	0.56	0.63	65
1/8 F – A1 – 3	0.094	0.094	0.25	0.30	0.42	**0.60**	0.73	0.84	0.95	70
1/8 F – A1 – 5	0.118	0.130	0.42	0.50	0.71	**1.01**	1.22	1.42	1.59	70
1/8 F – A1 – 8	0.150	0.154	0.66	0.80	1.12	**1.60**	1.94	2.24	2.52	65
1/8 F – A1 – 10	0.173	0.173	0.83	1.00	1.40	**1.99**	2.42	2.80	3.15	65
1/4 F - AA1 – 1	0.055	0.055	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	60
1/4 F - AA1 – 2	0.083	0.087	0.17	0.20	0.28	**0.40**	0.48	0.56	0.63	65
1/4 F - AA1 – 3	0.094	0.094	0.25	0.30	0.42	**0.60**	0.73	0.84	0.95	70
1/4 F - AA1 – 5	0.146	0.146	0.42	0.50	0.71	**1.01**	1.22	1.42	1.59	75
1/4 F - AA1 – 8	0.161	0.157	0.66	0.80	1.12	**1.60**	1.94	2.24	2.52	70
1/4 F - AA1 – 10	0.185	0.177	0.83	1.00	1.40	**1.99**	2.42	2.80	3.15	70
1/4 F - AA1 – 15	0.228	0.201	1.24	1.49	2.10	**2.99**	3.63	4.20	4.72	70
3/8 F – A1 - 5	0.130	0.138	0.42	0.50	0.71	**1.01**	1.22	1.42	1.59	75
3/8 F – A1 – 8	0.165	0.177	0.66	0.80	1.12	**1.60**	1.94	2.24	2.52	75
3/8 F – A1 – 10	0.177	0.197	0.83	1.00	1.40	**1.99**	2.42	2.80	3.15	75
3/8 F – A1 – 15	0.213	0.240	1.24	1.49	2.10	**2.99**	3.63	4.20	4.72	75
3/8 F – A1 – 20	0.252	0.280	1.66	1.99	2.80	**3.98**	4.84	5.60	6.30	75
3/8 F – A1 – 25	0.291	0.291	2.09	2.51	3.53	**5.03**	6.11	7.07	7.95	75
3/8 F – A1 – 30	0.311	0.327	2.50	3.00	4.21	**6.00**	7.28	8.43	9.48	75
3/8 F – A1 – 15 – 30.1	0.311	0.240	1.92	2.31	3.24	**4.62**	5.61	6.49	7.30	75
3/8 F – A1 – 25 – 30.1	0.311	0.291	2.32	2.78	3.91	**5.56**	6.76	7.82	8.80	55
3/8 F – A1 – 50 – 5.3	0.374	0.343	4.20	5.04	7.08	**10.08**	12.24	14.17	15.94	75
1/2 F – A1 – 25	0.252	0.374	2.09	2.51	3.53	**5.03**	6.11	7.07	7.95	65
1/2 F – A1 – 30	0.295	0.374	2.50	3.00	4.21	**6.00**	7.28	8.43	9.48	70
1/2 F – A1 – 40	0.358	0.374	3.34	4.01	5.63	**8.01**	9.73	11.26	12.67	75
1/2 F – A1 – 50	0.437	0.374	4.20	5.04	7.08	**10.08**	12.24	14.17	15.94	80
1/2 F – A1 – 60	0.516	0.374	4.95	5.95	8.35	**11.89**	14.44	16.71	18.80	80
3/4 F – A1 – 40	0.311	0.500	3.34	4.01	5.63	**8.01**	9.73	11.26	12.67	75
3/4 F – A1 – 50	0.374	0.500	4.20	5.04	7.08	**10.08**	12.24	14.17	15.94	75
3/4 F – A1 – 60	0.437	0.500	4.95	5.95	8.35	**11.89**	14.44	16.71	18.80	75
3/4 F – A1 – 70	0.500	0.500	5.86	7.04	9.89	**14.09**	17.11	19.80	22.27	80
3/4 F – A1 – 80	0.563	0.500	6.64	7.98	11.20	**15.95**	19.37	22.42	25.22	85
3/4 F – A1 – 90	0.579	0.500	7.46	8.96	12.58	**17.92**	21.76	25.18	28.33	85
3/4 F – A1 – 100	0.626	0.500	8.29	9.95	13.98	**19.91**	24.18	27.98	31.48	90
3/4 F – A1 – 110	0.673	0.500	9.10	10.94	15.35	**21.87**	26.56	30.74	34.58	90
3/4 F – A1 – 120	0.720	0.500	10.03	12.05	16.91	**24.09**	29.26	33.86	38.09	90

MA1 - MAA1
RIGHT ANGLED HOLLOW CONE
CONO HUECO TANGENCIAL

Characteristics
- Removable cap
- 90° spray from the inlet axis

Caracteristicas
- *Cabeza intercambiable.*
- *Pulverización a 90° en relación al eje de entrada del líquido.*

Applications
- Scrubbing and cooling of air and gas
- Dust control
- Surface treatment
- Humidification
- Chemical processes

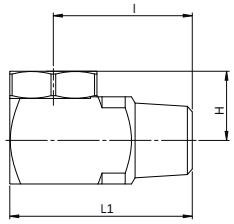
Aplicaciones
- *Lavado y enfriamiento de aire y gas.*
- *Control de polvo.*
- *Tratamiento de superficies.*
- *Humidificación.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

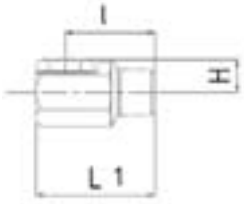
Dimensions (inches)

Connection	I	L1	H
1/8"	0.945	1.181	0.409
1/4"	1.004	1.339	0.512
1/4" MAA1	1.004	1.319	0.433
3/8"	1.122	1.496	0.591
1/2"	1.378	1.870	0.736
3/4"	1.614	2.402	0.945
3/8" - 30.1	1.122	1.969	0.748
3/8" - 50.3	1.122	1.496	0.669

MA1



MAA1



Type of nozzle	Diam. Orifice (in.)	Min. Passage (in.)	PRESSURE (psi) 7.00	10.00	20.00	**40.00**	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 F – A1 – 0.5	0.043	0.035	0.04	0.05	0.07	**0.10**	0.12	0.14	0.16	65
1/8 F – A1 – 1	0.055	0.055	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	70
1/8 F – A1 – 2	0.079	0.083	0.17	0.20	0.28	**0.40**	0.48	0.56	0.63	65
1/8 F – A1 – 3	0.094	0.094	0.25	0.30	0.42	**0.60**	0.73	0.84	0.95	70
1/8 F – A1 – 5	0.118	0.130	0.42	0.50	0.71	**1.01**	1.22	1.42	1.59	70
1/8 F – A1 – 8	0.150	0.154	0.66	0.80	1.12	**1.60**	1.94	2.24	2.52	65
1/8 F – A1 – 10	0.173	0.173	0.83	1.00	1.40	**1.99**	2.42	2.80	3.15	65
1/4 F - AA1 – 1	0.055	0.055	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	60
1/4 F - AA1 – 2	0.083	0.087	0.17	0.20	0.28	**0.40**	0.48	0.56	0.63	65
1/4 F - AA1 – 3	0.094	0.094	0.25	0.30	0.42	**0.60**	0.73	0.84	0.95	70
1/4 F - AA1 – 5	0.146	0.146	0.42	0.50	0.71	**1.01**	1.22	1.42	1.59	75
1/4 F - AA1 – 8	0.161	0.157	0.66	0.80	1.12	**1.60**	1.94	2.24	2.52	70
1/4 F - AA1 – 10	0.185	0.177	0.83	1.00	1.40	**1.99**	2.42	2.80	3.15	70
1/4 F - AA1 – 15	0.228	0.201	1.24	1.49	2.10	**2.99**	3.63	4.20	4.72	70
3/8 F – A1 - 5	0.130	0.138	0.42	0.50	0.71	**1.01**	1.22	1.42	1.59	75
3/8 F – A1 – 8	0.165	0.177	0.66	0.80	1.12	**1.60**	1.94	2.24	2.52	75
3/8 F – A1 – 10	0.177	0.197	0.83	1.00	1.40	**1.99**	2.42	2.80	3.15	75
3/8 F – A1 – 15	0.213	0.240	1.24	1.49	2.10	**2.99**	3.63	4.20	4.72	75
3/8 F – A1 – 20	0.252	0.280	1.66	1.99	2.80	**3.98**	4.84	5.60	6.30	75
3/8 F – A1 – 25	0.291	0.291	2.09	2.51	3.53	**5.03**	6.11	7.07	7.95	75
3/8 F – A1 – 30	0.311	0.327	2.50	3.00	4.21	**6.00**	7.28	8.43	9.48	75
3/8 F – A1 – 15 – 30.1	0.311	0.240	1.92	2.31	3.24	**4.62**	5.61	6.49	7.30	75
3/8 F – A1 – 25 – 30.1	0.311	0.291	2.32	2.78	3.91	**5.56**	6.76	7.82	8.80	55
3/8 F – A1 – 50 – 5.3	0.374	0.343	4.20	5.04	7.08	**10.08**	12.24	14.17	15.94	75
1/2 F – A1 – 25	0.252	0.374	2.09	2.51	3.53	**5.03**	6.11	7.07	7.95	65
1/2 F – A1 – 30	0.295	0.374	2.50	3.00	4.21	**6.00**	7.28	8.43	9.48	70
1/2 F – A1 – 40	0.358	0.374	3.34	4.01	5.63	**8.01**	9.73	11.26	12.67	75
1/2 F – A1 – 50	0.437	0.374	4.20	5.04	7.08	**10.08**	12.24	14.17	15.94	80
1/2 F – A1 – 60	0.516	0.374	4.95	5.95	8.35	**11.89**	14.44	16.71	18.80	80
3/4 F – A1 – 40	0.311	0.500	3.34	4.01	5.63	**8.01**	9.73	11.26	12.67	75
3/4 F – A1 – 50	0.374	0.500	4.20	5.04	7.08	**10.08**	12.24	14.17	15.94	75
3/4 F – A1 – 60	0.437	0.500	4.95	5.95	8.35	**11.89**	14.44	16.71	18.80	75
3/4 F – A1 – 70	0.500	0.500	5.86	7.04	9.89	**14.09**	17.11	19.80	22.27	80
3/4 F – A1 – 80	0.563	0.500	6.64	7.98	11.20	**15.95**	19.37	22.42	25.22	85
3/4 F – A1 – 90	0.579	0.500	7.46	8.96	12.58	**17.92**	21.76	25.18	28.33	85
3/4 F – A1 – 100	0.626	0.500	8.29	9.95	13.98	**19.91**	24.18	27.98	31.48	90
3/4 F – A1 – 110	0.673	0.500	9.10	10.94	15.35	**21.87**	26.56	30.74	34.58	90
3/4 F – A1 – 120	0.720	0.500	10.03	12.05	16.91	**24.09**	29.26	33.86	38.09	90

FA3 - FAA3
RIGHT ANGLED WIDE HOLLOW CONE
CONO HUECO TANGENCIAL, ANGULO AMPIO

Characteristics
- Removable cap
- 90° spray from the inlet axis

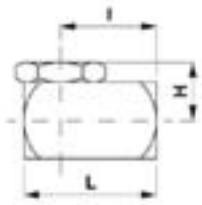
Caracteristicas
- *Cabeza intercambiable.*
- *Pulverización a 90° en relación al eje de entrada del líquido.*

Applications
- Scrubbing and cooling of air and gas
- Dust control
- Surface treatment
- Humidification
- Water aerating
- Roof cooling

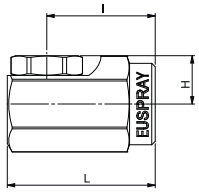
Aplicaciones
- *Lavado y enfriamiento de aire y gas.*
- *Control de polvo.*
- *Tratamiento de superficies.*
- *Humidificación.*
- *Oxigenación de agua.*
- *Enfriamiento.*

Material
Brass, 303SS, and 316SS, others available upon request.

FA3



FAA3



Dimensions (inches)

Connection	I	L	H
1/8"	0.689	0.984	0.512
1/4"	0.945	1.339	0.591
1/4" (FAA3)	0.866	1.181	0.472
3/8"	0.945	1.339	0.571
1/2"	1.378	1.969	0.866
3/4"	1.575	2.205	0.984

Type of nozzle	Diam. Orifice (in.)	Min. Passage (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 - FA3 – 0.5	0.043	0.035	0.04	0.05	0.07	**0.10**	0.12	0.14	0.16	110
1/8 - FA3 – 1	0.055	0.067	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	110
1/8 - FA3 – 2 – 3	0.083	0.083	0.21	0.25	0.35	**0.50**	0.61	0.70	0.78	110
1/8 - FA3 – 3	0.106	0.094	0.25	0.30	0.42	**0.60**	0.73	0.84	0.94	110
1/8 - FA3 – 3 – 5	0.130	0.094	0.28	0.34	0.48	**0.68**	0.83	0.96	1.07	110
1/8 - FA3 – 2 – 10	0.177	0.083	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	120
1/8 - FA3 – 5	0.118	0.130	0.42	0.50	0.71	**1.00**	1.23	1.41	1.58	115
1/8 - FA3 – 5 – 10	0.177	0.118	0.54	0.64	0.91	**1.29**	1.58	1.82	2.04	115
1/8 - FA3 – 8 – 10	0.177	0.150	0.74	0.89	1.25	**1.77**	2.17	2.51	2.80	115
1/4 - FA3 / FAA3 – 1	0.055	0.067	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	110
1/4 - FA3 / FAA3 – 1 – 5	0.130	0.055	0.14	0.17	0.24	**0.34**	0.41	0.48	0.53	110
1/4 - FA3 / FAA3 – 1 – 10	0.177	0.055	0.17	0.21	0.29	**0.42**	0.51	0.59	0.66	120
1/4 - FA3 / FAA3 – 1 – 15	0.213	0.055	0.21	0.25	0.35	**0.49**	0.61	0.70	0.78	110
1/4 - FA3 / FAA3 – 2 – 5	0.130	0.083	0.28	0.33	0.47	**0.67**	0.82	0.94	1.05	110
1/4 - FA3 / FAA3 – 2 – 10	0.177	0.083	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	120
1/4 - FA3 / FAA3 – 5	0.130	0.142	0.42	0.50	0.71	**1.00**	1.23	1.41	1.58	110
1/4 - FA3 / FAA3 – 5 – 10	0.177	0.142	0.54	0.64	0.91	**1.29**	1.58	1.82	2.04	120
1/4 - FA3 / FAA3 – 5 – 15	0.213	0.142	0.64	0.77	1.09	**1.54**	1.88	2.17	2.43	120
1/4 - FA3 / FAA3 – 8 – 10	0.177	0.161	0.74	0.89	1.25	**1.77**	2.17	2.51	2.80	110
1/4 - FA3 / FAA3 – 10	0.177	0.185	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	110
1/4 - FA3 / FAA3 – 8 – 15	0.161	0.213	0.91	1.09	1.54	**2.18**	2.67	3.08	3.44	120
1/4 - FA3 / FAA3 – 10 – 15	0.213	0.185	1.00	1.19	1.69	**2.39**	2.92	3.37	3.77	110
1/4 - FA3 / FAA3 – 15	0.213	0.228	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	100
3/8 - FA3 – 5 – 10	0.177	0.138	0.54	0.64	0.91	**1.29**	1.58	1.82	2.04	120
3/8 - FA3 – 5 – 15	0.213	0.138	0.64	0.77	1.09	**1.54**	1.88	2.17	2.43	120
3/8 - FA3 – 8 – 10	0.177	0.177	0.74	0.89	1.25	**1.77**	2.17	2.51	2.80	115
3/8 - FA3 – 10	0.177	0.197	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	110
3/8 - FA3 – 8 – 15	0.213	0.177	0.91	1.09	1.54	**2.18**	2.67	3.08	3.44	120
3/8 - FA3 – 10 – 15	0.213	0.197	1.00	1.19	1.69	**2.39**	2.92	3.37	3.77	110
3/8 - FA3 – 8 – 25	0.291	0.177	1.08	1.29	1.83	**2.58**	3.17	3.65	4.09	120
3/8 - FA3 – 10 – 20	0.232	0.197	1.16	1.38	1.95	**2.76**	3.38	3.90	4.37	115
3/8 - FA3 – 15	0.213	0.240	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	110
3/8 - FA3 – 15 – 20	0.240	0.232	1.41	1.69	2.38	**3.37**	4.13	4.76	5.33	110
3/8 - FA3 – 20	0.232	0.280	1.66	1.98	2.79	**3.95**	4.84	5.59	6.25	100
3/8 - FA3 – 15 – 30	0.213	0.240	1.83	2.18	3.08	**4.36**	5.34	6.16	6.89	110
3/8 - FA3 – 25	0.240	0.291	2.09	2.50	3.53	**4.99**	6.11	7.06	7.89	100
3/8 - FA3 – 25 – 30	0.232	0.291	2.29	2.74	3.87	**5.47**	6.70	7.74	8.65	100
1/2 - FA3 – 50	0.437	0.374	4.20	5.00	7.07	**10.01**	12.26	14.15	15.82	110
3/4 - FA3 – 80	0.563	0.500	6.64	7.92	11.19	**15.84**	19.40	22.39	25.03	110

MA3 - MAA3
RIGHT ANGLED WIDE HOLLOW CONE
CONO HUECO TANGENCIAL, ANGULO AMPIO

Characteristics
- Removable cap
- 90° spray from the inlet axis

Caracteristicas
- *Cabeza intercambiable.*
- *Pulverización a 90° en relación al eje de entrada del líquido.*

Applications
- Scrubbing and cooling of air and gas
- Dust control
- Surface treatment
- Humidification
- Water aerating
- Roof cooling

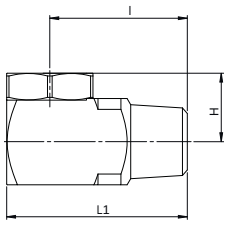
Aplicaciones
- *Lavado y enfriamiento de aire y gas.*
- *Control de polvo.*
- *Tratamiento de superficies.*
- *Humidificación.*
- *Oxigenación de agua.*
- *Enfriamiento.*

Material
Brass, 303SS, and 316SS, others available upon request.

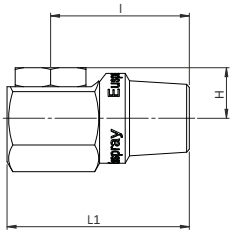
Dimensions (inches)

Connection	I	L1	H
1/8"	0.944	1.181	0.409
1/4"	1.004	1.339	0.512
1/4" (MAA3)	1.004	1.319	0.433
3/8"	1.122	1.496	0.591
1/2"	1.378	1.969	0.736
3/4"	1.614	2.402	0.945

MA3



MAA3



Type of nozzle	Diam. Orifice (in.)	Min. Passage (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 - MA3 – 0.5	0.043	0.035	0.04	0.05	0.07	**0.10**	0.12	0.14	0.16	110
1/8 - MA3 – 1	0.055	0.067	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	110
1/8 - MA3 – 2 – 3	0.083	0.083	0.21	0.25	0.35	**0.50**	0.61	0.70	0.78	110
1/8 - MA3 – 3	0.106	0.094	0.25	0.30	0.42	**0.60**	0.73	0.84	0.94	110
1/8 - MA3 – 3 – 5	0.130	0.094	0.28	0.34	0.48	**0.68**	0.83	0.96	1.07	110
1/8 - MA3 – 2 – 10	0.177	0.083	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	120
1/8 - MA3 – 5	0.118	0.130	0.42	0.50	0.71	**1.00**	1.23	1.41	1.58	115
1/8 - MA3 – 5 – 10	0.177	0.118	0.54	0.64	0.91	**1.29**	1.58	1.82	2.04	115
1/8 - MA3 – 8 – 10	0.177	0.150	0.74	0.89	1.25	**1.77**	2.17	2.51	2.80	115
1/4 - MA3 / MAA3 – 1	0.055	0.067	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	110
1/4 - MA3 / MAA3 – 1 – 5	0.130	0.055	0.14	0.17	0.24	**0.34**	0.41	0.48	0.53	110
1/4 - MA3 / MAA3 – 1 – 10	0.177	0.055	0.17	0.21	0.29	**0.42**	0.51	0.59	0.66	120
1/4 - MA3 / MAA3 – 1 – 15	0.213	0.055	0.21	0.25	0.35	**0.49**	0.61	0.70	0.78	110
1/4 - MA3 / MAA3 – 2 – 5	0.130	0.083	0.28	0.33	0.47	**0.67**	0.82	0.94	1.05	110
1/4 - MA3 / MAA3 – 2 – 10	0.177	0.083	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	120
1/4 - MA3 / MAA3 – 5	0.130	0.142	0.42	0.50	0.71	**1.00**	1.23	1.41	1.58	110
1/4 - MA3 / MAA3 – 5 – 10	0.177	0.142	0.54	0.64	0.91	**1.29**	1.58	1.82	2.04	120
1/4 - MA3 / MAA3 – 5 – 15	0.213	0.142	0.64	0.77	1.09	**1.54**	1.88	2.17	2.43	120
1/4 - MA3 / MAA3 – 8 – 10	0.177	0.161	0.74	0.89	1.25	**1.77**	2.17	2.51	2.80	110
1/4 - MA3 / MAA3 – 10	0.177	0.185	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	110
1/4 - MA3 / MAA3 – 8 – 15	0.161	0.213	0.91	1.09	1.54	**2.18**	2.67	3.08	3.44	120
1/4 - MA3 / MAA3 – 10 – 15	0.213	0.185	1.00	1.19	1.69	**2.39**	2.92	3.37	3.77	110
1/4 - MA3 / MAA3 – 15	0.213	0.228	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	100
3/8 - MA3 – 5 – 10	0.177	0.138	0.54	0.64	0.91	**1.29**	1.58	1.82	2.04	120
3/8 - MA3 – 5 – 15	0.213	0.138	0.64	0.77	1.09	**1.54**	1.88	2.17	2.43	120
3/8 - MA3 – 8 – 10	0.177	0.177	0.74	0.89	1.25	**1.77**	2.17	2.51	2.80	115
3/8 - MA3 – 10	0.177	0.197	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	110
3/8 - MA3 – 8 – 15	0.213	0.177	0.91	1.09	1.54	**2.18**	2.67	3.08	3.44	120
3/8 - MA3 – 10 – 15	0.213	0.197	1.00	1.19	1.69	**2.39**	2.92	3.37	3.77	110
3/8 - MA3 – 8 – 25	0.291	0.177	1.08	1.29	1.83	**2.58**	3.17	3.65	4.09	120
3/8 - MA3 – 10 – 20	0.232	0.197	1.16	1.38	1.95	**2.76**	3.38	3.90	4.37	115
3/8 - MA3 – 15	0.213	0.240	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	110
3/8 - MA3 – 15 – 20	0.240	0.232	1.41	1.69	2.38	**3.37**	4.13	4.76	5.33	110
3/8 - MA3 – 20	0.232	0.280	1.66	1.98	2.79	**3.95**	4.84	5.59	6.25	100
3/8 - MA3 – 15 – 30	0.213	0.240	1.83	2.18	3.08	**4.36**	5.34	6.16	6.89	110
3/8 - MA3 – 25	0.240	0.291	2.09	2.50	3.53	**4.99**	6.11	7.06	7.89	100
3/8 - MA3 – 25 – 30	0.232	0.291	2.29	2.74	3.87	**5.47**	6.70	7.74	8.65	100
1/2 - MA3 – 50	0.437	0.374	4.20	5.00	7.07	**10.01**	12.26	14.15	15.82	110
3/4 - MA3 – 80	0.563	0.500	6.64	7.92	11.19	**15.84**	19.40	22.39	25.03	110

CX - MX
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

Characteristics
These nozzles produce very fine atomized droplets using hydraulic pressure alone. The hydraulic atomizing nozzles are available in a one-piece 1/4" thread (NPT or BSPT). The three-piece models are available in 1/8" or 1/4" thread (NPT or BSPT), and include a threaded body, spray tip, and threaded cap. Strainers are optional, but are strongly recommended for all hydraulic atomizing nozzles.

Caracteristicas
Los atomizadores hidráulicos permiten una nebulización muy fina gracias únicamente a la presión hidráulica.
El orificio CX se puede montar en los accesorios.
La boquilla 1/4 MX es una sola pieza con la posibilidad de adaptar un filtro posterior.

Applications
- Humidifying
- Dust control
- Odor control
- Air and gas Scrubbing
- Lubrication
- Cooling

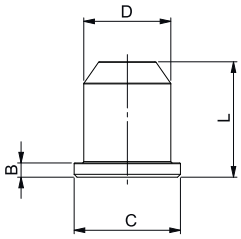
Aplicaciones
- *Humidificación.*
- *Control de polvo.*
- *Desodorización.*
- *Lavado de aire y gas.*
- *Lubrificación.*
- *Refrigeración.*

Material
Nickel plated brass, 303SS, and 316SS, others available upon request.

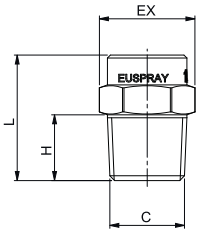
Dimensions (inches)

Connection	B	C	D	EX	L	H
1/4" MX	_	1/4	_	0.551	0.787	0.433
CX - Tip	0.079	0.591	0.484	_	0.650	_

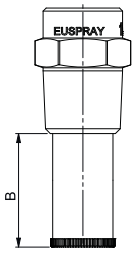
CX

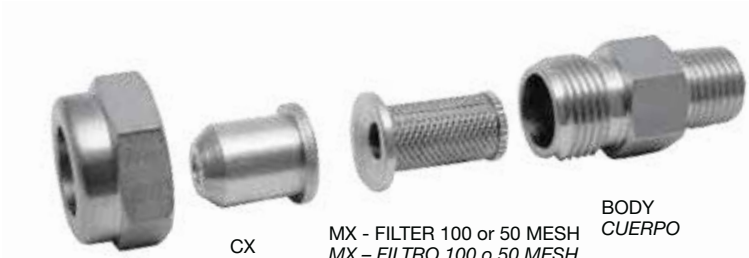


MX



MX - FILTER 100 or 50 MESH
MX - FILTERO 100 o 50 MESH





RETAINER
TUERCA

CX

MX - FILTER 100 or 50 MESH
MX – FILTRO 100 o 50 MESH

BODY
CUERPO

Flow Factor	Diam. Orifice (in.)	PRESSURE (psi)								<° 150 psi
		40	80	150	**300**	450	600	900	1200	
		CAPACITY (gallone per hour)								
0.7	0.014	0.72	1.01	1.39	**1.96**	2.40	2.77	3.40	3.92	50
1	0.016	0.89	1.26	1.73	**2.44**	2.99	3.46	4.23	4.89	65
1.5	0.020	1.48	2.09	2.87	**4.06**	4.97	5.74	7.03	8.11	70
2	0.024	1.97	2.79	3.82	**5.40**	6.61	7.64	9.35	10.80	70
3	0.035	2.99	4.23	5.79	**8.19**	10.04	11.59	14.19	16.39	70
4	0.043	3.96	5.60	7.68	**10.85**	13.29	15.35	18.80	21.71	75
6	0.043	5.98	8.46	11.59	**16.39**	20.07	23.18	28.38	32.78	75
8	0.059	7.95	11.24	15.39	**21.76**	26.65	30.77	37.69	43.52	80
10	0.063	10.01	14.15	19.38	**27.40**	33.56	38.75	47.46	54.81	80
12	0.075	11.77	16.65	22.80	**32.24**	39.49	45.59	55.84	64.48	80
14	0.075	14.13	19.98	27.36	**38.69**	47.38	54.71	67.00	77.37	80
18	0.075	17.85	25.25	34.58	**48.90**	59.89	69.15	84.69	97.79	80
22	0.075	21.58	30.52	41.80	**59.10**	72.39	83.58	102.37	118.21	80
26	0.087	25.51	36.07	49.40	**69.85**	85.55	98.78	120.98	139.70	80

MZ
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

Characteristics
The MZ model produces the smallest droplet size of any hydraulic atomizer in the market today.

Caracteristicas
Los atomizadores hidráulicos MZ permiten una nebulización muy fina gracias únicamente a la presión hidráulica.
La pulverización es en forma de cono semilleno, pulverización 55°-60°. (Con menor pulverización en el centro).
Atomizadores FZ tienen las mismas características, pero con una conexión diferente

Applications
- Snowmakers

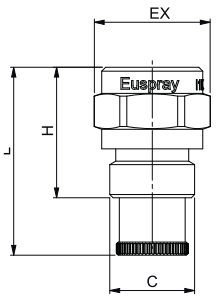
Aplicaciones
- *Humidificación*

Material
303SS, others available upon request.

Dimensions (inches)

C	EX	L	H
1/4"	0.630	1.161	0.787

MZ



Type of nozzle	Diam. Orifice (in.)	PRESSURE (psi) 150	300	450	**600**	750	900	1200	1500	<° 150 psi
		CAPACITY (gallone per hour)								
1/4" MZ0360	0.006	0.70	0.99	1.21	**1.40**	1.56	1.71	1.98	2.21	55
1/4" MZ0456	0.008	1.03	1.46	1.79	**2.07**	2.31	2.53	2.93	3.27	60
1/4" MZ0855	0.012	1.23	1.73	2.12	**2.45**	2.74	3.00	3.47	3.87	60

MN
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

Characteristics
The MN hydraulic atomizer is a specialized nozzle that is used primarily for snow making. The cone shaped spray tip is removable, providing easy access to the orifice.

Caracteristicas
Estos Atomizadores hidráulicos son específicos para los cañones de nieve.
La forma particular de la parte cónica de las boquillas permite una rápida eliminación del hielo. Esta operación es relativamente posible, incluso a baja presión (10 bares).
El máximo rendimiento de estas boquillas es a 50 bar.

Applications
- Snowmakers

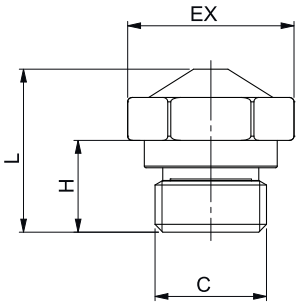
Aplicaciones
- *Cañones de nieve*

Material
Brass, SS430F, others on request

Dimensions (inches)

C	EX	L	H
1/4"	0.669	0.748	0.421

MN



Type of nozzle	PRESSURE (psi) 75	150	230	**300**	450	600	750	<° 150 psi
	CAPACITY (gallons per minute)							
1/4" - MN - 1.1	0.17	0.25	0.31	**0.35**	0.43	0.49	0.55	40
1/4" - MN - 1.4	0.22	0.31	0.38	**0.43**	0.53	0.61	0.68	40
1/4" - MN - 1.7	0.27	0.38	0.47	**0.53**	0.65	0.75	0.84	45
1/4" - MN - 3.1	0.47	0.66	0.82	**0.94**	1.15	1.33	1.49	45
1/4" - MN - 4.6	0.71	1.01	1.25	**1.42**	1.74	2.01	2.25	55
1/4" - MN - 6.7	1.05	1.48	1.83	**2.10**	2.57	2.96	3.31	55
1/4" - MN - 7.7	1.18	1.67	2.07	**2.36**	2.90	3.34	3.74	60
1/4" - MN - 18.7	1.34	1.90	2.35	**2.69**	3.29	3.80	4.25	60

A
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

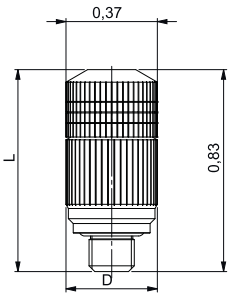
Characteristics
The A model, hydraulic nozzle has a compact design that is capable of creating a very fine atomized spray. It can produce droplets of less than 10 microns at 1,000 psi. Check valves are standard for the A model atomizers, but on request they can be purchased without the check valves.

Applications
- Humidification
- Outdoor cooling
- Dust control
- Odor control

Caracteristicas
El modelo A, boquilla hidráulica combina la ventaja de una atomización muy fina y dimensiones compactas. Puede producir gotitas de menos de 10 micras a 1.000 psi. Por lo general, suministramos el modelo con válvula de retención interna, a petición podemos suministrar sin ellos.

Aplicaciones
- *Humidificación*
- *Enfriamiento al aire libre*
- *Control de polvo*
- *Control de olores*

A



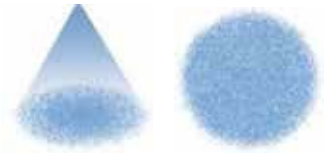
Code	Body Material	Head Material	Connection	Flow orifice	ø Min. Droplet	ø Max. Droplet	ø Medium Droplet
OIIA15R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0059 inch.	6.60 µm	26.45 µm	11.0 µm
OIIA20R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0078 inch.	6.69 µm	28.29 µm	11.0 µm
OIIA30R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0118 inch.	7.18 µm	32.21 µm	12.0 µm
OIIA40R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0157 inch.	7.42 µm	34.68 µm	12.0 µm
OIIA50R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0196 inch.	7.49 µm	37.52 µm	12.0 µm
IIA15R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0059 inch.	6.60 µm	26.45 µm	11.0 µm
IIA20R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0078 inch.	6.69 µm	28.29 µm	11.0 µm
IIA30R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0118 inch.	7.18 µm	32.21 µm	12.0 µm
IIA40R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0157 inch.	7.42 µm	34.68 µm	12.0 µm
IIA50R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0196 inch.	7.49 µm	37.52 µm	12.0 µm

All nozzles were tested at 1,000 PSI using water at 70°F

Diameter	PRESSURE (psi)									
	100	200	300	**400**	500	600	700	800	900	1000
(mm)	CAPACITY (gallone per hour)									
0.15	_	_	_	**0.476**	0.523	0.571	0.618	0.666	0.713	0.745
0.20	_	_	0.571	**0.666**	0.745	0.808	0.872	0.935	0.999	1.046
0.30	_	0.761	0.935	**1.078**	1.205	1.316	1.427	1.522	1.617	1.696
0.40	0.729	0.737	1.252	**1.458**	1.633	1.775	1.918	2.061	2.187	2.298
0.50	0.919	1.300	1.585	**1.839**	2.045	2.251	2.425	2.599	2.758	2.901

O-ring Material: VITON
Anti Drip valve: Dia. 0,50 mm; SS Spring + VITON Ball
No Filter

FULL CONE NOZZLES
BOQUILLAS DE CONO LLENO



FB1 - FBB1
FULL CONE
CONO LLENO NORMAL

Characteristics
- Type B is a one-piece threaded nozzle.
- Type BB is a two-piece nozzle, consisting of a threaded body and a removable cap.

Caracteristicas
- *Tipo BB: cabeza intercambiable.*
- *Tipo B: Cabeza de cuerpo único.*

Applications
- Washing processes
- Cooling
- Foam dispersion
- Chemical processes

Aplicaciones
- *Lavado de todo tipo.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

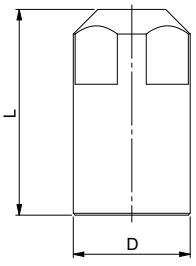
Dimensions (inches)

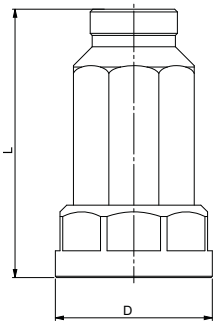
Connection	D	D (EX)	L	L1
1/8"	-	0.551	-	1.220
1/4"	-	0.669	-	1.457
3/8"	-	0.827	-	1.575
1/2"	-	0.984	-	1.969
3/4"	1.260	-	2.165	-
1"	1.496	-	2.756	-
1-1/4"	2.087	-	3.386	-
1-1/2	2.283	-	4.016	-
2"	2.953	-	5.315	-
2-1/2"	3.386	-	6.890	-

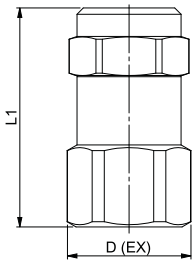
FB1

FB1 LARGE CAPACITY

FBB1







Available in a quick disconnect model, see page 8.

Type of nozzle	Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi) 7.00	10.00	20.00	**40.00**	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 FBB1 – 1	0.035	0.025	0.08	0.09	0.13	**0.19**	0.23	0.27	0.30	55
1/8 FBB1 – 1.5	0.047	0.031	0.12	0.14	0.20	**0.28**	0.34	0.39	0.44	62
1/8 FBB1 – 2	0.051	0.031	0.16	0.19	0.27	**0.38**	0.47	0.54	0.60	50
1/8 FBB1 – 3	0.063	0.039	0.23	0.28	0.39	**0.56**	0.68	0.79	0.88	62
1/8 FBB1 – 3.5	0.063	0.051	0.28	0.33	0.47	**0.67**	0.82	0.94	1.05	50
1/8 FBB1 – 5	0.079	0.051	0.40	0.47	0.67	**0.95**	1.16	1.34	1.50	62
1/4 FBB1 – 6.5	0.091	0.063	0.51	0.61	0.86	**1.22**	1.49	1.72	1.92	50
1/4 FBB1 – 10	0.114	0.063	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	62
3/8 FBB1 – 9.5	0.102	0.094	0.75	0.89	1.26	**1.79**	2.19	2.53	2.82	50
3/8 FBB1 – 15	0.142	0.094	1.19	1.42	2.01	**2.84**	3.47	4.01	4.49	65
3/8 FBB1 – 22	0.177	0.110	1.73	2.06	2.92	**4.13**	5.06	5.84	6.53	85
1/2 FBB1 – 16	0.138	0.126	1.25	1.49	2.11	**2.99**	3.66	4.23	4.73	50
1/2 FBB1 – 25	0.181	0.126	1.96	2.34	3.31	**4.69**	5.74	6.63	7.41	65
1/2 FBB1 – 32	0.205	0.142	2.54	3.04	4.30	**6.08**	7.45	8.60	9.61	70
1/2 FBB1 – 40	0.252	0.142	3.18	3.80	5.37	**7.60**	9.31	10.75	12.01	85
3/4 FB1 – 2.5	0.193	0.177	2.31	2.76	3.90	**5.52**	6.76	7.81	8.73	50
3/4 FB1 – 4	0.252	0.177	3.72	4.45	6.29	**8.89**	10.89	12.57	14.06	65
3/4 FB1 – 7	0.374	0.205	6.47	7.73	10.93	**15.45**	18.92	21.85	24.43	90
1 FB1 – 4.2	0.236	0.220	3.94	4.71	6.66	**9.42**	11.54	13.33	14.90	50
1 FB1 – 7	0.327	0.220	6.49	7.75	10.96	**15.50**	18.99	21.92	24.51	65
1 FB1 – 10	0.469	0.220	9.23	11.03	15.60	**22.06**	27.02	31.20	34.88	75
1 FB1 – 12	0.469	0.236	11.02	13.17	18.63	**26.34**	32.26	37.25	41.65	90
1 1/4 FB1 – 6	0.693	0.256	5.41	6.46	9.13	**12.92**	15.82	18.27	20.42	50
1 1/4 FB1 – 10	0.768	0.252	9.22	11.02	15.58	**22.04**	26.99	31.16	34.84	65
1 1/4 FB1 – 12	0.417	0.256	11.13	13.30	18.81	**26.60**	32.57	37.61	42.05	65
1 1/4 FB1 – 14	0.488	0.256	12.93	15.45	21.85	**30.90**	37.85	43.70	48.86	75
1 1/4 FB1 – 20	0.591	0.315	18.44	22.04	31.16	**44.07**	53.98	62.33	69.68	90
1 1/2 FB1 – 10	0.378	0.346	9.22	11.02	15.58	**22.04**	26.99	31.16	34.84	50
1 1/2 FB1 – 16	0.496	0.346	14.84	17.73	25.07	**35.46**	43.43	50.15	56.07	70
1 1/2 FB1 – 20	0.559	0.346	18.44	22.04	31.16	**44.07**	53.98	62.33	69.68	75
1 1/2 FB1 – 30	0.717	0.406	27.56	32.93	46.57	**65.86**	80.66	93.13	104.13	90
2 FB1 – 17	0.496	0.441	15.69	18.74	26.51	**37.49**	45.91	53.01	59.27	50
2 FB1 – 30	0.677	0.441	27.56	32.93	46.57	**65.86**	80.66	93.13	104.13	70
2 FB1 – 35	0.752	0.441	32.33	38.63	54.63	**77.25**	94.61	109.25	122.15	75
2 FB1 – 40	0.866	0.441	36.89	44.07	62.33	**88.14**	107.95	124.66	139.37	75
2 FB1 – 50	0.933	0.567	46.00	54.96	77.73	**109.93**	134.63	155.46	173.81	80
2 FB1 – 60	1.122	0.567	54.06	64.59	91.34	**129.18**	158.21	182.68	204.25	95
2 1/2 FB1 – 25	0.591	0.567	22.79	27.23	38.51	**54.46**	66.70	77.01	86.10	50
2 1/2 FB1 – 50	0.870	0.567	46.00	54.96	77.73	**109.93**	134.63	155.46	173.81	75
2 1/2 FB1 – 60	0.965	0.567	54.06	64.59	91.34	**129.18**	158.21	182.68	204.25	75
2 1/2 FB1 – 70	1.122	0.567	64.66	77.25	109.25	**154.51**	189.23	218.51	244.30	80
2 1/2 FB1 – 80	1.122	0.567	74.73	89.29	126.27	**178.57**	218.70	252.53	282.34	85
2 1/2 FB1 – 90	1.248	0.567	82.68	98.78	139.70	**197.57**	241.97	279.40	312.38	95

MB1 - MBB1
FULL CONE
CONO LLENO NORMAL

Characteristics
- Type B is a one-piece threaded nozzle.
- Type BB is a two-piece nozzle, consisting of a threaded body and a removable cap.

Caracteristicas
- *Tipo BB: cabeza intercambiable.*
- *Tipo B: Cabeza de cuerpo único.*

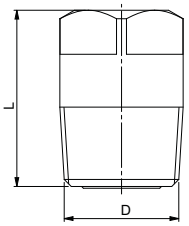
Applications
- Washing processes
- Cooling
- Foam dispersion
- Chemical processes

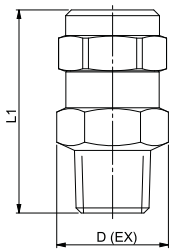
Aplicaciones
- *Lavado de todo tipo.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

MB1

MBB1





Available in a quick disconnect model, see page 8.

Dimensions (inches)

Connection	D	D (EX)	L	L1
1/8"	0.512	0.551	0.866	1.299
1/4"	0.551	0.669	0.866	1.496
3/8"	0.669	0.827	0.984	1.772
1/2"	0.827	0.984	1.220	1.969
3/4"	1.063	-	1.575	-
1"	1.378	-	2.047	-

Type of nozzle	Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi)							<° 40 psi
			7.00	10.00	20.00	**40.00**	60.00	80.00	100.00	
			CAPACITY (gallons per minute)							
1/8 MB1 / MBB1 – 1	0.035	0.025	0.08	0.09	0.13	**0.19**	0.23	0.27	0.30	55
1/8 MB1 / MBB1 – 1.5	0.047	0.031	0.12	0.14	0.20	**0.28**	0.34	0.39	0.44	62
1/8 MB1 / MBB1 – 2	0.051	0.031	0.16	0.19	0.27	**0.38**	0.47	0.54	0.60	50
1/8 MB1 / MBB1 – 3	0.063	0.039	0.23	0.28	0.39	**0.56**	0.68	0.79	0.88	62
1/8 MB1 / MBB1 – 3.5	0.063	0.051	0.28	0.33	0.47	**0.67**	0.82	0.94	1.05	50
1/8 MB1 / MBB1 – 5	0.079	0.051	0.40	0.47	0.67	**0.95**	1.16	1.34	1.50	62
1/4 FBB1 – 6.5	0.091	0.063	0.51	0.61	0.86	**1.22**	1.49	1.72	1.92	50
1/4 FBB1 – 10	0.114	0.063	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	62
3/8 MB1 / MBB1 – 9.5	0.102	0.094	0.75	0.89	1.26	**1.79**	2.19	2.53	2.82	50
3/8 MB1 / MBB1 – 15	0.142	0.094	1.19	1.42	2.01	**2.84**	3.47	4.01	4.49	65
3/8 MB1 / MBB1 – 22	0.177	0.110	1.73	2.06	2.92	**4.13**	5.06	5.84	6.53	85
1/2 MB1 / MBB1 – 16	0.138	0.126	1.25	1.49	2.11	**2.99**	3.66	4.23	4.73	50
1/2 MB1 / MBB1 – 25	0.181	0.126	1.96	2.34	3.31	**4.69**	5.74	6.63	7.41	65
1/2 MB1 / MBB1 – 32	0.205	0.142	2.54	3.04	4.30	**6.08**	7.45	8.60	9.61	70
1/2 MB1 / MBB1 – 40	0.252	0.142	3.18	3.80	5.37	**7.60**	9.31	10.75	12.01	85
3/4 MB1 – 2.5	0.193	0.177	2.31	2.76	3.90	**5.52**	6.76	7.81	8.73	50
3/4 MB1 – 4	0.252	0.177	3.72	4.45	6.29	**8.89**	10.89	12.57	14.06	65
3/4 MB1 – 7	0.374	0.205	6.47	7.73	10.93	**15.45**	18.92	21.85	24.43	90
1 MB1 – 4.2	0.236	0.220	3.94	4.71	6.66	**9.42**	11.54	13.33	14.90	50
1 MB1 – 7	0.327	0.220	6.49	7.75	10.96	**15.50**	18.99	21.92	24.51	65
1 MB1 – 10	0.469	0.220	9.23	11.03	15.60	**22.06**	27.02	31.20	34.88	75
1 MB1 – 12	0.469	0.236	11.02	13.17	18.63	**26.34**	32.26	37.25	41.65	90

FB2 - FBB2
WIDE FULL CONE AND LARGE CAPACITY
CONO LLENO GRAN ANGULO

Characteristics
- Type B is a one-piece threaded nozzle.
- Type BB is a two-piece nozzle, consisting of a threaded body and a removable cap.
- Large capacity sizes F-B2 (1) S.S. AISI 316 made.

Caracteristicas
- *Tipo BB: cabeza intercambiable.*
- *Tipo B: Boquilla de una sola pieza.*
- *Las boquillas tipo F-B2 (1) de gran caudal son de inox 316.*

Applications
- Washing
- Cooling
- Foam dispersion
- Air and gas scrubbing
- Chemical processes

Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Lavado de aire y gas.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

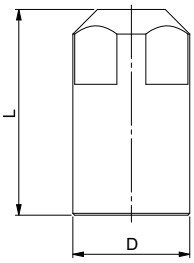
Dimensions (inches)

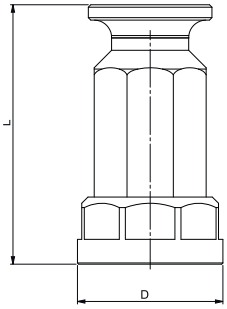
Connection	D	D (EX)	L	L1
1/8"		0.551		1.220
1/4"		0.669		1.457
3/8"		0.827		1.575
1/2"		0.984		1.969
3/4"	1.260		2.205	
1"	1.496		2.756	
1"-1/4	2.047		3.543	
1"-1/2	2.283		4.016	
2	2.953		5.472	
2"-1/2	3.780		6.890	

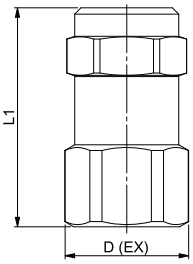
FB2

FB2 LARGE CAPACITY

FBB2







Available in a quick disconnect model, see page 8.

Type of nozzle	Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 F – BB2 – 2.8	0.059	0.031	0.21	0.25	0.36	**0.51**	0.62	0.72	0.80	115
1/8 F – BB2 – 4.3	0.079	0.039	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	115
1/8 F – BB2 – 5.6	0.094	0.039	0.43	0.52	0.73	**1.04**	1.27	1.47	1.64	115
1/8 F – BB2 – 8	0.098	0.051	0.60	0.72	1.02	**1.44**	1.77	2.04	2.28	115
1/4 F - BB2 – 10	0.118	0.063	0.76	0.91	1.29	**1.82**	2.23	2.58	2.88	115
1/4 F - BB2 – 12	0.130	0.063	0.91	1.08	1.53	**2.17**	2.65	3.06	3.42	115
1/4 F - BB2 – 14	0.146	0.063	1.06	1.27	1.79	**2.53**	3.10	3.58	4.00	115
3/8 F – BB2 – 17	0.146	0.094	1.30	1.56	2.20	**3.12**	3.82	4.41	4.93	115
3/8 F – BB2 – 20	0.173	0.094	1.54	1.84	2.60	**3.67**	4.50	5.19	5.81	115
3/8 F – BB2 – 24	0.177	0.110	1.82	2.18	3.08	**4.36**	5.34	6.16	6.89	115
3/8 F – BB2 – 27	0.185	0.118	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	115
1/2 F – BB2 – 30	0.201	0.126	2.34	2.80	3.96	**5.60**	6.86	7.92	8.85	115
1/2 F – BB2 – 35	0.232	0.126	2.66	3.18	4.50	**6.36**	7.79	8.99	10.05	115
1/2 F – BB2 – 40	0.252	0.142	3.07	3.67	5.19	**7.35**	9.00	10.39	11.61	115
1/2 F – BB2 – 45	0.252	0.169	3.46	4.13	5.84	**8.26**	10.11	11.68	13.06	115
1/2 F – BB2 – 50	0.264	0.169	3.85	4.60	6.50	**9.19**	11.26	13.00	14.54	115
1/4 F - B2 – 14	0.146	0.063	1.06	1.27	1.79	**2.53**	3.10	3.58	4.00	115
3/8 F – B2 – 17	0.146	0.094	1.30	1.56	2.20	**3.12**	3.82	4.41	4.93	115
3/8 F – B2 – 20	0.173	0.094	1.54	1.84	2.60	**3.67**	4.50	5.19	5.81	115
3/8 F – B2 – 24	0.177	0.110	1.82	2.18	3.08	**4.36**	5.34	6.16	6.89	115
3/8 F – B2 – 27	0.185	0.118	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	115
1/2 F – B2 – 30	0.201	0.126	2.34	2.80	3.96	**5.60**	6.86	7.92	8.85	115
1/2 F – B2 – 35	2.323	0.126	2.66	3.18	4.50	**6.36**	7.79	8.99	10.05	115
1/2 F – B2 – 40	0.252	0.142	3.07	3.67	5.19	**7.35**	9.00	10.39	11.61	115
1/2 F – B2 – 45	0.260	0.169	3.46	4.13	5.84	**8.26**	10.11	11.68	13.06	115
1/2 F – B2 – 50	0.264	0.169	3.85	4.60	6.50	**9.19**	11.26	13.00	14.54	115
3/4 F – B2 – 6	0.382	0.177	5.30	6.33	8.96	**12.66**	15.51	17.91	20.02	115
1 F – B2 – 11	0.512	0.224	9.75	11.65	16.48	**23.30**	28.54	32.95	36.84	115
1 1/4 F – B2 – 16 (1)	0.606	0.260	14.31	17.10	24.18	**34.19**	41.88	48.36	54.07	115
1 1/2 F – B2 – 24 (1)	0.713	0.406	21.20	25.33	35.82	**50.66**	62.04	71.64	80.10	115
2 F – B2 – 47 (1)	0.980	0.441	41.76	49.90	70.57	**99.80**	122.22	141.13	157.79	115
2 1/2 F – B2 – 70 (1)	1.248	0.567	62.65	74.85	105.85	**149.69**	183.34	211.70	236.69	115

(1) Material on request - *Bajo pedido*

MB2 - MBB2
WIDE FULL CONE AND LARGE CAPACITY
CONO LLENO GRAN ANGULO

Characteristics
- Type B is a one-piece threaded nozzle.
- Type BB is a two-piece nozzle, consisting of a threaded body and a removable cap.
- Large capacity sizes F-B2 (1) S.S. AISI 316 made.

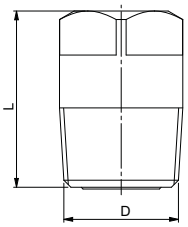
Caracteristicas
- *Tipo BB: cabeza intercambiable.*
- *Tipo B: Boquilla de una sola pieza.*
- *Las boquillas tipo F-B2 (1) de gran caudal son de inox 316.*

Applications
- Washing
- Cooling
- Foam dispersion
- Air and gas scrubbing
- Chemical processes

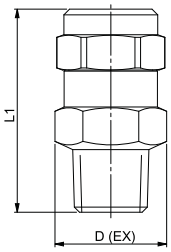
Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Lavado de aire y gas.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

MB2



MBB2



Dimensions (inches)

Connection	D	D (EX)	L	L1
1/8"	0.512	0.551	0.866	1.299
1/4"	0.551	0.669	0.866	1.496
3/8"	0.669	0.827	1.181	1.772
1/2"	0.827	0.984	1.299	2.205
3/4"	1.063	-	1.575	-
1"	1.378	-	2.047	-

Available in a quick disconnect model, see page 8.

Type of nozzle	Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi)							<° 40 psi
			7.00	10.00	20.00	**40.00**	60.00	80.00	100.00	
			CAPACITY (gallons per minute)							
1/8 MB2 / MBB2 – 2.8	0.059	0.031	0.21	0.25	0.36	**0.51**	0.62	0.72	0.80	115
1/8 MB2 / M – BB2 – 4.3	0.079	0.039	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	115
1/8 MB2 / M – BB2 – 5.6	0.094	0.039	0.43	0.52	0.73	**1.04**	1.27	1.47	1.64	115
1/8 MB2 / M – BB2 – 8	0.098	0.051	0.60	0.72	1.02	**1.44**	1.77	2.04	2.28	115
1/4 MB2 / M - BB2 – 10	0.118	0.063	0.76	0.91	1.29	**1.82**	2.23	2.58	2.88	115
1/4 MB2 / M - BB2 – 12	0.130	0.063	0.91	1.08	1.53	**2.17**	2.65	3.06	3.42	115
1/4 MB2 / M - BB2 – 14	0.146	0.063	1.06	1.27	1.79	**2.53**	3.10	3.58	4.00	115
3/8 MB2 / M – BB2 – 17	0.146	0.094	1.30	1.56	2.20	**3.12**	3.82	4.41	4.93	115
3/8 MB2 / M – BB2 – 20	0.173	0.094	1.54	1.84	2.60	**3.67**	4.50	5.19	5.81	115
3/8 MB2 / M – BB2 – 24	0.177	0.110	1.82	2.18	3.08	**4.36**	5.34	6.16	6.89	115
3/8 MB2 / M – BB2 – 27	0.185	0.118	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	115
1/2 MB2 / M – BB2 – 30	0.201	0.126	2.34	2.80	3.96	**5.60**	6.86	7.92	8.85	115
1/2 MB2 / M – BB2 – 35	0.232	0.126	2.66	3.18	4.50	**6.36**	7.79	8.99	10.05	115
1/2 MB2 / M – BB2 – 40	0.252	0.142	3.07	3.67	5.19	**7.35**	9.00	10.39	11.61	115
1/2 MB2 / M – BB2 – 45	0.252	0.169	3.46	4.13	5.84	**8.26**	10.11	11.68	13.06	115
1/2 MB2 / M– BB2 – 50	0.264	0.169	3.85	4.60	6.50	**9.19**	11.26	13.00	14.54	115
3/4 M – B2 – 6	0.382	0.177	5.30	6.33	8.96	**12.66**	15.51	17.91	20.02	115
1 M – B2 – 11	0.512	0.224	9.75	11.65	16.48	**23.30**	28.54	32.95	36.84	115

FB3 - FBB3
SQUARE FULL CONE
CONO LLENO DE ASPERSIÓN CUADRADA

Characteristics
- Type B is a one-piece threaded nozzle.
- Type BB is a two-piece nozzle, consisting of a threaded body and a removable cap.
- Large capacity sizes F-B2 (1) S.S. AISI 316 made.

Caracteristicas
- *Tipo BB: cabeza intercambiable.*
- *Tipo B: Boquilla de una sola pieza.*
- *Las boquillas tipo F-B2 (1) de gran caudal son de inox 316.*

Applications
- Washing
- Cooling
- Foam dispersion
- Air and gas scrubbing
- Chemical processes

Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Lavado de aire y gas.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

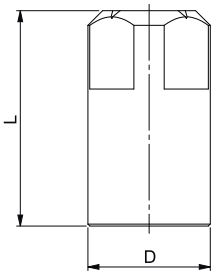
Dimensions (inches)

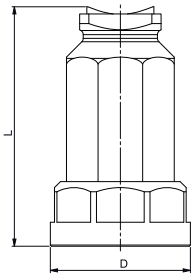
Connection	D	D (EX)	L	L1
1/8"	-	0.591	-	1.181
1/4"	-	0.669	-	1.378
3/8"	-	0.827	-	1.575
1/2"	-	0.984	-	1.890
1"	1.496	-	2.756	-
1"-1/4	2.087	-	3.307	-
1"-1/2	2.283	-	4.134	-
2	3.031	-	5.354	-
2"-1/2	3.386	-	6.693	-

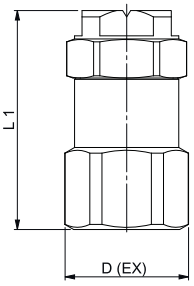
FB3

FB3 LARGE CAPACITY

FBB3







Available in a quick disconnect model, see page 8.

Type of nozzle	Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
1/8 FBB3 – 3.6	0.063	0.051	0.28	0.33	0.47	**0.66**	0.81	0.93	1.04	50
1/8 FBB3 – 6	0.087	0.051	0.49	0.59	0.83	**1.18**	1.44	1.67	1.86	65
1/4 FBB3 – 10	0.114	0.063	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	65
1/4 FBB3 – 12	0.130	0.063	0.94	1.13	1.59	**2.25**	2.76	3.19	3.56	75
3/8 FBB3 – 18	0.157	0.094	1.40	1.67	2.36	**3.34**	4.09	4.73	5.29	75
1/2 FBB3 – 29	0.217	0.126	2.24	2.67	3.78	**5.34**	6.55	7.56	8.45	75
1 FB3 – 106	0.398	0.220	8.27	9.88	13.97	**19.76**	24.20	27.94	31.24	75
1 1/4 FB3 – 177 (1)	0.500	0.256	13.78	16.46	23.28	**32.93**	40.33	46.57	52.06	75
1 1/2 FB3 – 230 (1)	0.563	0.346	18.13	21.66	30.63	**43.31**	53.05	61.25	68.48	75
2 FB3 – 290 (1)	0.610	0.441	22.79	27.23	38.51	**54.46**	66.70	77.01	86.10	75
2 FB3 – 360 (1)	0.685	0.441	27.98	33.43	47.28	**66.87**	81.90	94.57	105.73	75
2 FB3 – 480 (1)	0.827	0.441	37.63	44.96	63.58	**89.92**	110.13	127.16	142.17	90
2 1/2 FB3 – 490 (1)	0.780	0.567	38.05	45.47	64.30	**90.93**	111.37	128.60	143.77	115
2 1/2 FB3 – 590 (1)	0.874	0.567	46.22	55.22	78.09	**110.43**	135.25	156.18	174.61	115
2 1/2 FB3 – 950 (1)	1.055	0.689	74.20	88.65	125.37	**177.30**	217.15	250.74	280.34	115

(1) Material on request - *Bajo pedido*

MB3 - MBB3
SQUARE FULL CONE
CONO LLENO DE ASPERSIÓN CUADRADA

Characteristics
- Type B is a one-piece threaded nozzle.
- Type BB is a two-piece nozzle, consisting of a threaded body and a removable cap.
- Large capacity sizes F-B2 (1) S.S. AISI 316 made.

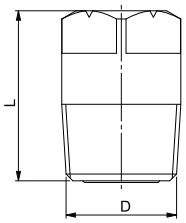
Caracteristicas
- *Tipo BB: cabeza intercambiable.*
- *Tipo B: Boquilla de una sola pieza.*
- *Las boquillas tipo F-B2 (1) de gran caudal son de inox 316.*

Applications
- Washing
- Cooling
- Foam dispersion
- Air and gas scrubbing
- Chemical processes

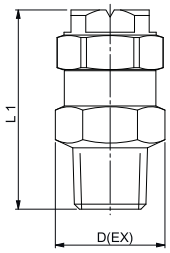
Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Lavado de aire y gas.*
- *Tratamientos químicos.*

Material
Brass, 303SS, and 316SS, others available upon request.

MB3



MBB3



Dimensions (inches)

Connection	D	D (EX)	L	L1
1/8"	0.512	0.591	0.866	1.260
1/4"	0.551	0.669	0.906	1.457
3/8"	0.669	0.827	1.181	1.575
1/2"	0.827	0.984	1.299	1.890
3/4"	1.063	-	1.575	-

Available in a quick disconnect model, see page 8.

Type of nozzle	Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi)							<° 40 psi
			7.00	10.00	20.00	40.00	60.00	80.00	100.00	
			CAPACITY (gallons per minute)							
1/8 MBB3 – 3.6	0.063	0.051	0.28	0.33	0.47	**0.66**	0.81	0.93	1.04	50
1/8 MBB3 – 6	0.087	0.051	0.49	0.59	0.83	**1.18**	1.44	1.67	1.86	65
1/4 MBB3 – 10	0.114	0.063	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	65
1/4 MBB3 – 12	0.130	0.063	0.94	1.13	1.59	**2.25**	2.76	3.19	3.56	75
3/8 MBB3 – 18	0.157	0.094	1.40	1.67	2.36	**3.34**	4.09	4.73	5.29	75
1/2 MBB3 – 29	0.217	0.126	2.24	2.67	3.78	**5.34**	6.55	7.56	8.45	75
1/8 MB3 – 3.6	0.063	0.051	0.28	0.33	0.47	**0.66**	0.81	0.93	1.04	50
1/8 MB3 – 4.8	0.075	0.051	0.37	0.44	0.63	**0.89**	1.09	1.25	1.40	65
1/8 MB3 – 6	0.087	0.051	0.48	0.57	0.81	**1.14**	1.40	1.61	1.80	65
1/4 MB3 – 10	0.118	0.063	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	70
1/4 MB3 – 12	0.130	0.063	0.94	1.13	1.59	**2.25**	2.76	3.19	3.56	70
1/4 MB3 – 14.5	0.154	0.063	1.11	1.33	1.88	**2.66**	3.26	3.76	4.21	75
3/8 MB3 – 18	0.157	0.094	1.40	1.67	2.36	**3.34**	4.09	4.73	5.29	75
1/2 MB3 – 29	0.220	0.126	2.24	2.67	3.78	**5.34**	6.55	7.56	8.45	75
1/2 MB3 – 36	0.252	0.126	2.76	3.29	4.66	**6.59**	8.07	9.31	10.41	75
3/4 MB3 – 50	0.264	0.177	3.92	4.69	6.63	**9.37**	11.48	13.25	14.82	75

FB4 - MB4
WIDE SQUARE FULL CONE
CONO LLENO GRAN ANGULO DE ASPERSIÓN CUADRADA

Characteristics
- One-piece nozzle construction.
- The MB4 series is machined, the FB4 series is cast.

Caracteristicas
- *Boquilla de cuerpo único o en fusión como tipo F-B4 (1)*

Applications
- Square full cone patterns reduce gaps in the spray coverage when the nozzles are used side by side.

Aplicaciones
- *Instalación con un gran número de boquillas, donde la sección cuadrada de la pulverización permite una mejor cobertura de la superficie a tratar.*

Material
Brass, 303SS, and 316SS, others available upon request.

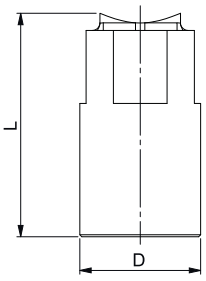
Dimensions (inches)

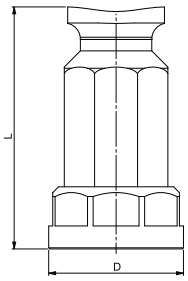
Connection	D	L
1/4"	0.512	0.906
3/8"	0.669	1.181
1/2"	0.827	1.535
3/4" MB4	1.063	1.575
3/4" FB4	1.260	2.165
1" MB4	1.378	2.047
1" FB4	1.496	2.756
1"-1/4	2.087	3.543
1"-1/2	2.283	4.016
2	2.953	5.315
2"-1/2	3.386	6.890

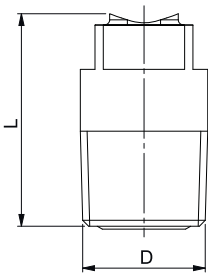
FB4

FB4 LARGE CAPACITY

MB4







Available in a quick disconnect model, see page 8.

Type of nozzle		Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
				CAPACITY (gallons per minute)							
	1/4 MB4 – 14	0.142	0.063	1.06	1.27	1.79	**2.53**	3.10	3.58	4.00	100
	3/8 MB4 – 20	0.173	0.094	1.54	1.84	2.60	**3.67**	4.50	5.19	5.81	100
	1/2 MB4 – 35	0.232	0.126	2.64	3.15	4.46	**6.31**	7.72	8.92	9.97	110
3/4 FB4 – 71	3/4 MB4 – 71	0.386	0.173	5.29	6.32	8.94	**12.64**	15.48	17.87	19.98	110
1 FB4 – 130	1 MB4 – 130	0.516	0.220	9.86	11.78	16.66	**23.56**	28.85	33.31	37.25	110
1 1/4 FB4 – 190 (1)		0.610	0.220	14.31	17.10	24.18	**34.19**	41.88	48.36	54.07	110
2 FB4 – 560 (1)		0.984	0.441	41.76	49.90	70.57	**99.80**	122.22	141.13	157.79	110
2 1/2 FB4 – 830 (1)		1.252	0.567	62.54	74.72	105.67	**149.44**	183.03	211.34	236.29	110

(1) Material on request - *Bajo pedido*

FBB5 - MBB5 - FBB6 - MBB6
WIDE ANGLE FULL CONE
CONO LLENO NORMAL Y AMPLIO

Characteristics
- Removable Cap

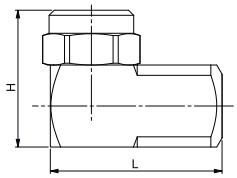
Caracteristicas
- *Cabeza intercambiable.*
- *Pulverización a 90° respecto al eje de entrada.*

* BB5 con gran ángulo de aspersión

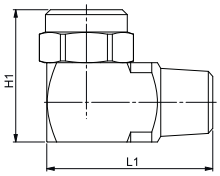
Applications
- Washing
- Cooling
- Foam dispersion
- Air and gas washing
- Chemical processes

Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Aspersión de espumas.*
- *Lavado de aire y gas.*
- *Tratamientos químicos.*

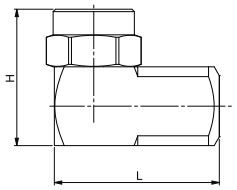
FBB5



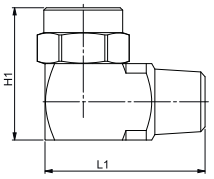
MBB5



FBB6



MBB6



Dimensions (inches)

Connection	H	L	H1	L1
1/8"	0.866	1.063	0.866	1.063
1/4"	1.102	1.181	1.102	1.181
3/8"	1.181	1.339	1.181	1.339
1/2"	1.693	1.890	1.693	1.890

Type of nozzle		Diam. Orifice (in.)	Body Inlet hole (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
				CAPACITY (gallons per minute)							
1/8 FBB5 – 2	1/8 MBB5 – 2	0.051	0.039	0.16	0.19	0.27	**0.38**	0.47	0.54	0.60	50
1/8 FBB5 – 3	1/8 MBB5 – 3	0.063	0.039	0.23	0.28	0.39	**0.56**	0.68	0.79	0.88	65
1/8 FBB5 – 3.5	1/8 MBB5 – 3.5	0.063	0.039	0.26	0.32	0.45	**0.63**	0.78	0.90	1.00	50
1/8 FBB5 – 5	1/8 MBB5 – 5	0.079	0.051	0.40	0.47	0.67	**0.95**	1.16	1.34	1.50	65
1/4 FBB5-5	1/4 MBB5 – 5	0.079	0.051	0.40	0.47	0.67	**0.95**	1.16	1.34	1.50	65
1/4 FBB5 – 6.5	1/4 MBB5 – 6.5	0.091	0.063	0.51	0.61	0.87	**1.23**	1.50	1.74	1.94	50
1/4 FBB5 – 10	1/4 MBB5 – 10	0.114	0.063	0.79	0.95	1.34	**1.90**	2.33	2.69	3.00	65
3/8 FBB5 – 9.5	3/8 MBB5 – 9.5	0.102	0.094	0.75	0.90	1.27	**1.80**	2.20	2.54	2.84	50
3/8 FBB5 – 15	3/8 MBB5 – 15	0.142	0.094	1.19	1.42	2.01	**2.84**	3.47	4.01	4.49	65
3/8 FBB5 – 20	3/8 MBB5 – 20	0.157	0.110	1.57	1.87	2.65	**3.75**	4.59	5.30	5.93	80
3/8 FBB5 – 22	3/8 MBB5 – 22	0.185	0.110	1.72	2.05	2.90	**4.10**	5.03	5.80	6.49	85
1/2 FBB5 – 16	1/2 MBB5 – 16	0.138	0.126	1.26	1.51	2.13	**3.01**	3.69	4.26	4.77	60
1/2 FBB5 – 25	1/2 MBB5 – 25	0.181	0.126	1.95	2.33	3.30	**4.66**	5.71	6.59	7.37	75
1/2 FBB5 – 32	1/2 MBB5 – 32	0.205	0.142	2.53	3.03	4.28	**6.05**	7.41	8.56	9.57	85
1/2 FBB5 – 40	1/2 MBB5 – 40	0.252	0.142	3.14	3.75	5.30	**7.50**	9.18	10.60	11.85	90
1/2 FBB5 – 50	1/2 MBB5 – 50	0.264	0.169	3.97	4.75	6.72	**9.50**	11.63	13.43	15.02	90
1/8 FBB6 – 4.3	1/8 MBB6 – 4.3	0.079	0.039	0.33	0.39	0.56	**0.79**	0.96	1.11	1.24	110
1/8 FBB6 – 8	1/8 MBB6 – 8	0.098	0.051	0.59	0.71	1.00	**1.42**	1.74	2.01	2.24	110
1/4 FBB6 – 14	1/4 MBB6 – 14	0.142	0.063	1.08	1.29	1.83	**2.58**	3.16	3.65	4.08	110
3/8 FBB6 – 20	3/8 MBB6 – 20	0.173	0.094	1.54	1.84	2.60	**3.67**	4.50	5.19	5.81	110
1/2 FBB6 – 35	1/2 MBB6 – 35	0.232	0.126	2.63	3.14	4.44	**6.28**	7.69	8.88	9.93	110
1/2 FBB6 – 50	1/2 MBB6 – 50	0.264	0.169	3.85	4.60	6.50	**9.19**	11.26	13.00	14.54	110

MB7 - MBB7 - FBB7
NARROW FULL CONE
INYECTOR DE CONO LLENO, PEQUEÑO ANGULO

Characteristics
- Narrow full cone spray with high impact 30° spray angle.

Caracteristicas
- *Cono lleno de fuerte impacto con ángulo de aspersión de 30°.*

Applications
- High impact washing
- Tube and pipe cleaning

Aplicaciones
- *Lavado con fuerte impacto.*
- *Pulverización en el interior de canalizaciones.*

Material
Brass, 303SS, and 316SS, others available upon request.

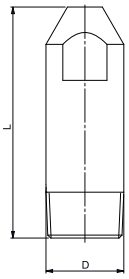
Dimensions (inches)

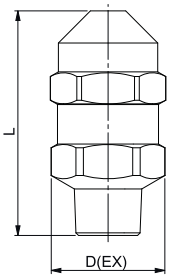
Connection	D(EX)	L	D1(EX)	L1	D
1/8"	0.630	1.496	0.630	1.496	-
1/4"	0.787	1.890	0.787	1.811	-
3/8"	0.984	2.283	0.984	2.244	-
1/2	1.220	3.071	1.220	2.953	-
3/4"	1.654	3.937	1.654	3.780	-
1"	-	3.622	-	-	1.378
1"-1/4	-	5.118	-	-	1.654
1"-1/2	-	6.102	-	-	1.890
2"	-	7.874	-	-	2.362
2"-1/2	-	9.252	-	-	2.953

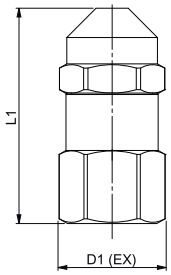
MB7

MBB7

FBB7







Type of nozzle		Diam. Orifice (in.)	PRESSURE (psi)							<° 40 psi
			7.00	10.00	20.00	**40.00**	60.00	80.00	100.00	
			CAPACITY (gallons per minute)							
1/8 FBB7 – 1.4	1/8 MBB7 – 1.4	0.028	0.06	0.07	0.10	**0.14**	0.17	0.20	0.22	30
1/8 FBB7 – 2.5	1/8 MBB7 – 2.5	0.038	0.10	0.12	0.18	**0.25**	0.30	0.35	0.39	30
1/8 FBB7 – 4	1/8 MBB7 – 4	0.047	0.16	0.19	0.27	**0.38**	0.47	0.54	0.60	30
1/8 FBB7 – 7	1/8 MBB7 – 7	0.063	0.29	0.34	0.48	**0.68**	0.84	0.97	1.08	30
1/4 FBB7 – 9	1/4 MBB7 – 9	0.071	0.36	0.43	0.61	**0.86**	1.05	1.22	1.36	30
3/8 FBB7 – 14	3/8 MBB7 – 14	0.091	0.58	0.70	0.99	**1.39**	1.71	1.97	2.20	30
1/2 FBB7 – 30	1/2 MBB7 – 30	0.126	1.23	1.47	2.08	**2.94**	3.60	4.16	4.65	30
3/4 FBB7 – 50	3/4 MBB7 – 50	0.165	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	30
	1 MB7 – 70	0.201	2.86	3.42	4.84	**6.84**	8.38	9.67	10.81	30
	1 MB7 – 100	0.240	4.13	4.94	6.99	**9.88**	12.10	13.97	15.62	30
	11/4 MB7 – 150	0.291	6.25	7.47	10.57	**14.94**	18.30	21.13	23.63	30
	11/4 MB7 – 200	0.339	8.27	9.88	13.97	**19.76**	24.20	27.94	31.24	30

BGF - BG - TBGF
FULL CONE SPRAY
ORIFICIO DE PULVERIZACION DE CONO LLENO

Characteristics
- Uniform spray pattern
- Available with a wear resistant coating.

Caracteristicas
- *Cono lleno con distribucíon uniforme.*
- *Disponible también con el anti-desgaste.*

Applications
- High impact washing
- Tube Cleaning
- Metal cooling applications

Aplicaciones
- *Lavado con fuerte impacto.*
- *Pulverización en el interior de canalizaciones.*
- *Tratamiento en fábricas de acero.*

Material
Brass, 303SS, and 316SS, others available upon request.

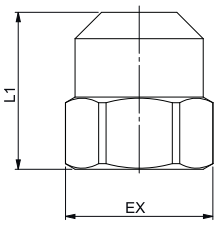
Dimensions (inches)

Connection	L	D	A	L1	EX
3/8"	-	-	-	0.984	0.827
BG (TIP)	0.669	0.591	0.484	-	-
TBGF (TIP)	.984	.375	.846	-	-

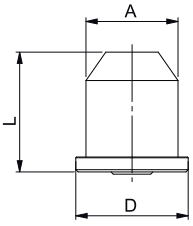
Dimensions Assembly (inches)

Connection	L	D (EX)	EX
1/8" M	1.890	0.866	0.669
1/8" F	1.969	0.866	0.669
1/4" M	1.969	0.866	0.669
1/4" F	1.969	0.866	0.669
3/8" M	1.969	0.866	0.669
3/8" F	1.969	0.866	0.748

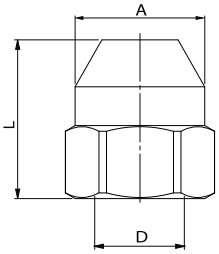
BGF



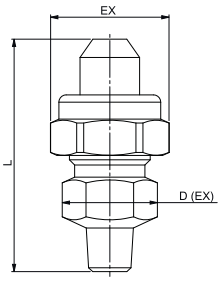
BG



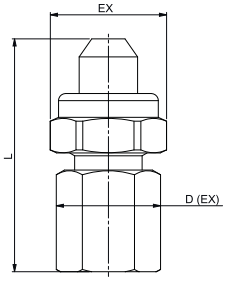
TBGF



BG MALE ASSEMBLY



BG FEMALE ASSEMBLY



Type of nozzle		Diam. Orifice (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
			CAPACITY (gallons per minute)							
3/8 TBGF – 1	3/8 BGF – 1	0.035	0.08	0.09	0.13	**0.19**	0.23	0.27	0.30	60
3/8 TBGF – 2	3/8 BGF – 2	0.047	0.16	0.19	0.27	**0.38**	0.47	0.54	0.60	60
3/8 TBGF – 3	3/8 BGF – 3	0.059	0.23	0.28	0.39	**0.56**	0.68	0.79	0.88	60
3/8 TBGF – 3.5	3/8 BGF – 3.5	0.063	0.28	0.34	0.47	**0.67**	0.82	0.95	1.06	60
3/8 TBGF – 5	3/8 BGF – 5	0.079	0.40	0.48	0.67	**0.95**	1.17	1.35	1.51	60
3/8 TBGF – 6.5	3/8 BGF – 6.5	0.091	0.51	0.61	0.86	**1.22**	1.49	1.72	1.92	60
3/8 TBGF – 8	3/8 BGF – 8	0.102	0.67	0.80	1.13	**1.60**	1.95	2.26	2.52	60
3/8 TBGF – 10	3/8 BGF – 10	0.114	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	60
3/8 TBGF – 15	3/8 BGF – 15	0.142	1.19	1.42	2.01	**2.84**	3.47	4.01	4.49	60
3/8 TBGF – 22	3/8 BGF – 22	0.177	1.73	2.06	2.92	**4.13**	5.06	5.84	6.53	60

Type of nozzle	Diam. Orifice (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 40 psi
		CAPACITY (gallons per minute)							
BG – 1	0.035	0.08	0.09	0.13	**0.19**	0.23	0.27	0.30	60
BG – 2	0.047	0.16	0.19	0.27	**0.38**	0.47	0.54	0.60	60
BG – 3	0.059	0.23	0.28	0.39	**0.56**	0.68	0.79	0.88	60
BG – 3.5	0.063	0.28	0.34	0.47	**0.67**	0.82	0.95	1.06	60
BG – 5	0.079	0.40	0.48	0.67	**0.95**	1.17	1.35	1.51	60
BG – 6.5	0.091	0.51	0.61	0.86	**1.22**	1.49	1.72	1.92	60
BG – 8	0.102	0.67	0.80	1.13	**1.60**	1.95	2.26	2.52	60
BG – 10	0.114	0.78	0.94	1.33	**1.87**	2.30	2.65	2.96	60

RETAINER
TUERCA

BODY
CUERPO

BG

MBE
FULL CONE NOZZLES
BOQUILLA DE CONO LLENO

Characteristics
- Full cone nozzle with uniform spray pattern.
- Available also with special treatment against wearing.

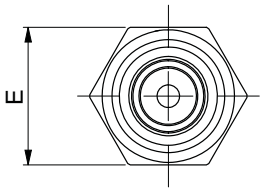
Caracteristicas
- *Boquilla de cono lleno con distribución uniforme.*
- *Disponible también con el anti-desgaste.*

Applications
- Continuous casting cooling.
- High impact washing.

Aplicaciones
- *Enfriamento colada continua.*
- *Lavado con fuerte impacto.*

Material
Brass, AISI303, other on request

MBE



Dimensions (inches)

A	H	D	E
1/8"	0.669	0.484	0.512
1/4"	0.866	0.531	0.551
3/8"	0.984	0.649	0.669
1/2"	1.181	0.787	0.866

Connection				Flowrate Code	PRESSURE (psi)							<° Angle
					15.00	30.00	**40.00**	60.00	90.00	120.00	150.00	
1/8"	1/4"	3/8"	1/2"		CAPACITY (gallons per minute)							
•				**1**	0.12	0.17	**0.18**	0.23	0.29	0.33	0.37	45-60-90-120
•				**1.5**	0.17	0.25	**0.27**	0.35	0.43	0.49	0.55	45-60-90-120
•				**2**	0.24	0.33	**0.36**	0.47	0.58	0.67	0.75	45-60-90-120
•				**3**	0.35	0.49	**0.53**	0.69	0.85	0.98	1.10	45-60-90-120
•				**3.5**	0.41	0.59	**0.64**	0.83	1.02	1.17	1.31	45-60-90-120
•	•	•		**5**	0.58	0.83	**0.90**	1.17	1.43	1.65	1.85	45-60-90-120
	•	•		**6.5**	0.76	1.07	**1.17**	1.51	1.85	2.14	2.39	45-60-90-120
	•	•		**8**	0.93	1.31	**1.43**	1.86	2.27	2.62	2.93	45-60-90-120
	•	•		**9**	1.04	1.47	**1.60**	2.08	2.55	2.94	3.29	45-60-90-120
	•	•		**10**	1.17	1.65	**1.80**	2.33	2.86	3.30	3.69	45-60-90-120
	•	•		**11**	1.32	1.86	**2.03**	2.63	3.23	3.73	4.17	45-60-90-120
		•	•	**13**	1.48	2.10	**2.28**	2.97	3.63	4.19	4.69	45-60-90-120
		•	•	**15**	1.77	2.50	**2.72**	3.53	4.33	5.00	5.59	45-60-90-120
		•	•	**22**	2.57	3.64	**3.96**	5.14	6.30	7.27	8.13	45-60-90-120
			•	**16**	2.92	4.13	**4.49**	5.84	7.15	8.25	9.23	45-60-90-120
			•	**25**	3.79	5.35	**5.83**	7.57	9.27	10.71	11.97	45-60-90-120
			•	**32**	4.73	6.69	**7.29**	9.46	11.59	13.38	14.96	45-60-90-120

MBO
FULL CONE NOZZLES
BOQUILLA DE CONO LLENO

Characteristics
- Oval section nozzle with uniform distribution.
- Available also with special treatment against wearing.

Caracteristicas
- *Boquilla de sección oval con distribución uniforme.*
- *Disponible también con el anti-desgaste.*

Applications
- Continuous casting cooling.
- High impact washing.

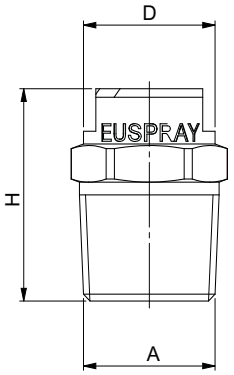
Aplicaciones
- *Enfriamento colada continua.*
- *Lavado con fuerte impacto.*

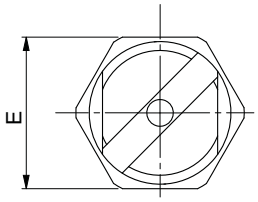
Material
Brass, AISI303, other on request

Dimensions (inches)

A	H	D	E
1/4"	0.866	0.531	0.551
3/8"	0.984	0.610	0.669

MBO





Connection		Flowrate Code	PRESSURE (psi)							<° Angle
1/4"	1/8"		15.00	30.00	**40.00**	60.00	90.00	120.00	150.00	
			CAPACITY (gallons per minute)							
•		**4.4**	0.52	0.74	**0.80**	1.04	1.28	1.47	1.65	90 - 60
•		**5.6**	0.66	0.94	**1.02**	1.33	1.62	1.87	2.10	90 - 60
•		**7.2**	0.85	1.20	**1.31**	1.70	2.09	2.41	2.69	90 - 60
•		**9.6**	1.14	1.61	**1.75**	2.27	2.78	3.21	3.59	90 - 60
•		**10.1**	1.20	1.70	**1.85**	2.40	2.94	3.39	3.79	90 - 60
•		**11.1**	1.32	1.86	**2.03**	2.63	3.23	3.73	4.17	90 - 60
	•	**4.4**	0.52	0.74	**0.80**	1.04	1.28	1.47	1.65	90 - 60
	•	**5.6**	0.66	0.94	**1.02**	1.33	1.62	1.87	2.10	90 - 60
	•	**7.2**	0.85	1.20	**1.31**	1.70	2.09	2.41	2.69	90 - 60
	•	**9.1**	1.07	1.52	**1.65**	2.15	2.63	3.03	3.39	90 - 60
	•	**11.1**	1.32	1.86	**2.03**	2.63	3.23	3.73	4.17	90 - 60

MB9S
SPIRAL FULL CONE
CONO LLENO

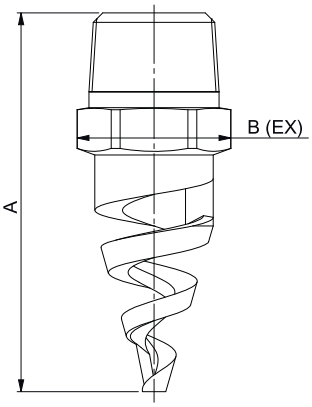
Characteristics
- The large free passage spiral design helps to prevent clogging by allowing larger solids to pass through the nozzle.
- These nozzles can operate at pressures as low as 7 psi.
- Available in spray angles ranging from 60-170 degrees. Please see the table below for spray angle and flow rate data.
- Available in AISI 316SS, brass, polypropylene, PVC, and Teflon.

Caracteristicas
- *La nueva boquilla hidraulica B9S aplica un chorro de cono lleno incluso con la presion de agua mas bien baja (0,5 bar. y superiores). La boquilla no requiere mantenimento de ningun tipo y su estructura es una garantia de que no se obstruya. El alcance de estas boquillas puede ser particularmente alto y tambien se puede utilizar con agua no muy limpia. Tenemos cinco tipos de angulo de aspersion: 60°, 90°, 120°, 150°, 170°. Puede ser fabricada en AISI 316 laton o plastico (PP O PVC / PTFE). Superiores a 5 bar, se recomienda que los materiales sean de metal.*

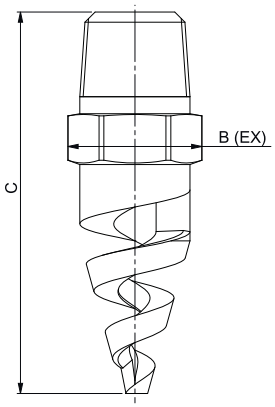
Applications
- Washing
- Cooling
- Industrial and chemical processes

Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Tratamientos químicos.*

MB9S



60°, 90°, 120°



150°, 170°

Type of nozzle	PRESSURE (psi)							<° 40 psi	DIMENSIONS (in.)	
	7.00	10.00	20.00	**40.00**	60.00	80.00	100.00		150° - 170°	60° - 90° - 120°
	CAPACITY (gallons per minute)									
1/4 MB9 – 6 – S	0.58	0.70	0.99	**1.39**	1.71	1.97	2.20	60 - 90 - 120 - 150 - 170	2.13	1.89
1/4 MB9 – 8 – S	1.09	1.30	1.84	**2.61**	3.20	3.69	4.12	60 - 90 - 120 - 150 - 170	2.13	1.89
1/4 MB9 – 10 – S	1.67	2.00	2.83	**4.00**	4.90	5.66	6.33	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 6 – S	0.58	0.70	0.99	**1.39**	1.71	1.97	2.20	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 8 – S	1.09	1.30	1.84	**2.61**	3.20	3.69	4.12	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 10 – S	1.67	2.00	2.83	**4.00**	4.90	5.66	6.33	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 12 – S	2.51	3.00	4.24	**6.00**	7.35	8.49	9.49	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 14 – S	3.39	4.05	5.73	**8.11**	9.93	11.46	12.82	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 16 – S	4.43	5.29	7.49	**10.59**	12.97	14.97	16.74	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 20 – S	6.90	8.24	11.66	**16.49**	20.19	23.32	26.07	60 - 90 - 120 - 150 - 170	2.13	1.89
1/2 MB9 – 24 – S	10.07	12.03	17.01	**24.06**	29.47	34.03	38.05	60 - 90 - 120 - 150 - 170	3.15	2.56
1/2 MB9 – 28 – S	13.78	16.46	23.28	**32.93**	40.33	46.57	52.06	60 - 90 - 120 - 150 - 170	3.15	2.56
3/4 MB9 – 32 – S	17.60	21.02	29.73	**42.05**	51.50	59.46	66.48	60 - 90 - 120 - 150 - 170	3.46	2.76
1 MB9 – 40 – S	27.56	32.93	46.57	**65.86**	80.66	93.13	104.13	60 - 90 - 120 - 150 - 170	4.57	3.62
1 MB9 – 48 – S	39.75	47.49	67.16	**94.98**	116.33	134.33	150.18	60 - 90 - 120 - 150 - 170	4.57	3.62
11/2 MB9 – 56 – S	53.95	64.46	91.16	**128.92**	157.90	182.33	203.85	60 - 90 - 120 - 150 - 170	6.73	4.37
11/2 MB9 – 64 – S	70.70	84.47	119.46	**168.94**	206.91	238.92	267.12	60 - 90 - 120 - 150 - 170	6.73	4.37
11/2 MB9 – 72 – S	80.35	96.00	135.76	**191.99**	235.14	271.52	303.57	60 - 90 - 120 - 150 - 170	6.73	4.37
2 MB9 – 88 – S	117.66	140.58	198.80	**281.15**	344.34	397.61	444.54	60 - 90 - 120 - 150 - 170	6.89	6.89
2 MB9 – 96 – S	148.40	177.31	250.74	**354.60**	434.30	501.49	560.68	60 - 90 - 120 - 150 - 170	6.89	6.89
3 MB9 – 112 – S	214.12	255.83	361.79	**511.64**	626.63	723.57	808.98	60 - 90 - 120 - 150 - 170	11.89	7.99
3 MB9 – 128 – S	284.08	339.41	479.99	**678.81**	831.37	959.99	1.073.30	60 - 90 - 120 - 150 - 170	11.89	7.99
4 MB9 – 160 – S	438.84	524.32	741.48	**1.048.62**	1.284.28	1.482.97	1.658.01	60 - 90 - 120 - 150 - 170	12.99	9.06

BANV
VANELESS FULL CONE NOZZLE
CONO LLENO SIN DIFUSOR

Characteristics
- Removable cap
- Right angle spray orientation
- The vaneless design allows for the maximum free passage of solids.

Caracteristicas
- *Cabeza desmontable.*
- *Pulverizar a 90° con respecto al eje de entrada.*
- *Aspersión de cono lleno con pasajes internos completamente libre.*

Applications
- Cooling metals and other materials
- Dust Control
- Elimination of foam
- Wash/rinse

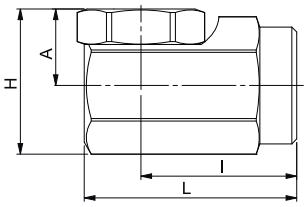
Aplicaciones
- *El enfriamiento de la industria quimica.*
- *Mojar los materiales combustibles y tanques de almacenamiento para la prevención/supresión del fuego.*
- *Control de polvo.*
- *Eliminación de espuma.*
- *Lavado / enjuague.*

Material
Brass, 303SS, and 316SS, others available upon request.

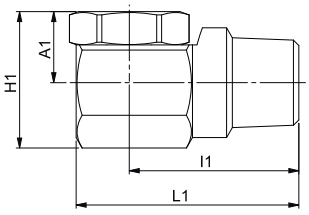
Dimensions (Inches)

A	L	I	H1	A1	L1	I1
0.472	1.181	0.866	0.866	0.472	1.339	1.004
0.630	1.339	0.945	0.984	0.630	1.496	1.102

FBANV



MBANV



Type of nozzle	Diam. Orifice (in.)	Min. Passage (in.)	PRESSURE (psi) 7.00	10.00	20.00	40.00	60.00	80.00	100.00	<° 20 psi
			CAPACITY (gallons per minute)							
1/4 BANV – 5	0.110	0.087	0.41	0.49	0.70	**0.99**	1.21	1.40	1.56	75
1/4 BANV – 7	0.126	0.094	0.59	0.71	1.00	**1.42**	1.74	2.01	2.24	75
1/4 BANV – 8	0.157	0.110	0.68	0.81	1.15	**1.62**	1.99	2.29	2.56	75
1/4 BANV – 10	0.157	0.126	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	80
1/4 BANV – 11	0.157	0.142	0.91	1.09	1.54	**2.18**	2.67	3.08	3.44	80
3/8 BANV – 11	0.173	0.126	0.91	1.09	1.54	**2.18**	2.67	3.08	3.44	80
3/8 BANV – 13	0.173	0.142	1.09	1.30	1.84	**2.61**	3.20	3.69	4.12	85
3/8 BANV – 16	0.173	0.157	1.35	1.61	2.27	**3.22**	3.94	4.55	5.09	80
3/8 BANV – 20	0.220	0.173	1.66	1.99	2.81	**3.98**	4.87	5.62	6.29	85
3/8 BANV – 23	0.220	0.189	1.92	2.29	3.24	**4.58**	5.61	6.48	7.25	85
3/8 BANV – 26	0.236	0.205	2.18	2.61	3.69	**5.22**	6.39	7.38	8.25	85
3/8 BANV – 29	0.236	0.220	2.42	2.89	4.08	**5.77**	7.07	8.17	9.13	85
3/8 BANV – 33	0.295	0.236	2.76	3.29	4.66	**6.59**	8.07	9.31	10.41	85

PM
FULL CONE - MAX. FREE PASSAGE
CONO LLENO - MÁXIMO PASO LIBRE

Characteristics
- Maximum free passage full cone nozzle
- Possible flanged connection
- Male and female connection
- Easy to clean

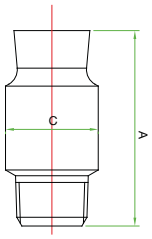
Caracteristicas
- *Boquilla de cono lleno de paso libre máximo*
- *Posible conexión bridada*
- *Conexión hembra y macho*
- *Fácil de limpiar*

Applications
- Scrubbing and cooling of air or gases
- Dust Control
- Odor Control

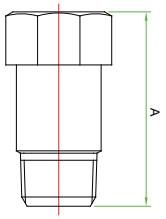
Aplicaciones
- *Lavado y enfriamiento de aire o gases*
- *Control de Polvo*
- *Control de olores*

Material
316SS, Hastelloy, other on request

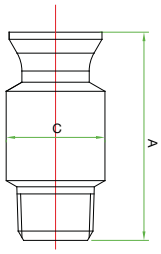
PM



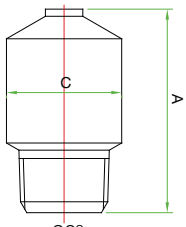
60º



3/8" - 1-1/2" sizes:



120º



90º

Connection / Type of nozzle	Approx. Free Passage (inch.)	PRESSURE (psi)									Approx. Dimemnsions (inch.)		Available Spray Angle
		3	4	7	10	15	29	44	73	145			
		CAPACITY (gallons per minute)									80	100	
3/8 PM - 12	0.124	0.65	0.80	1.03	1.22	1.45	2.05	2.52	3.25	4.59	1.496	0.886	60 - 90 - 120
3/8 PM - 15	0.155	1.04	1.27	1.64	1.95	2.32	3.29	4.03	5.20	7.35	1.496	0.886	60 - 90 - 120
3/8 PM - 18	0.187	1.49	1.82	2.35	2.78	3.33	4.71	5.77	7.44	10.53	1.496	0.886	60 - 90 - 120
1/2 PM - 18	0.187	1.49	1.82	2.35	2.78	3.33	4.71	5.77	7.44	10.53	1.890	1.004	60 - 90 - 120
1/2 PM - 21	0.219	2.39	2.92	3.77	4.46	5.34	7.55	9.24	11.93	16.87	1.890	1.004	60 - 90 - 120
1/2 PM - 25	0.249	2.68	3.28	4.24	5.02	6.00	8.48	10.39	13.41	18.96	1.890	1.004	60 - 90 - 120
3/4 PM - 28	0.280	3.31	4.05	5.23	6.19	7.40	10.46	12.81	16.54	23.39	2.480	1.260	60 - 90 - 120
3/4 PM - 31	0.313	3.97	4.86	6.28	7.43	8.88	12.55	15.37	19.85	28.07	2.480	1.260	60 - 90 - 120
3/4 PM - 34	0.343	4.88	5.98	7.71	9.13	10.91	15.43	18.90	24.40	34.50	2.480	1.260	60 - 90 - 120
3/4 PM - 37	0.374	5.75	7.05	9.10	10.76	12.87	18.19	22.28	28.77	40.68	2.480	1.260	60 - 90 - 120
1 PM - 37	0.374	5.75	7.05	9.10	10.76	12.87	18.19	22.28	28.77	40.68	2.953	1.496	60 - 90 - 120
1 PM - 40	0.402	6.90	8.45	10.91	12.91	15.43	21.82	26.72	34.50	48.79	2.953	1.496	60 - 90 - 120
1 PM - 43	0.437	8.07	9.88	12.76	15.10	18.04	25.52	31.25	40.35	57.06	2.953	1.496	60 - 90 - 120
1-1/4 PM - 43	0.44	8.07	9.88	12.76	15.10	18.04	25.52	31.25	40.35	57.06	3.386	2.008	60 - 90 - 120
1-1/4 PM - 50	0.49	10.37	12.70	16.40	19.41	23.19	32.80	40.17	51.86	73.35	3.386	2.008	60 - 90 - 120
1-1/4 PM - 53	0.53	11.52	14.11	18.21	21.55	25.76	36.43	44.61	57.59	81.45	3.386	2.008	60 - 90 - 120
1-1/4 PM - 56	0.56	12.64	15.48	19.99	23.65	28.27	39.97	48.96	63.21	89.39	3.386	2.008	60 - 90 - 120
1-1/2 PM - 56	0.56	12.64	15.48	19.99	23.65	28.27	39.97	48.96	63.21	89.39	4.331	2.264	60 - 90 - 120
1-1/2 PM - 59	0.59	14.30	17.51	22.60	26.74	31.96	45.21	55.36	71.48	101.08	4.331	2.264	60 - 90 - 120
1-1/2 PM - 62	0.62	15.24	18.67	24.10	28.51	34.08	48.19	59.03	76.20	107.77	4.331	2.264	60 - 90 - 120
1-1/2 PM - 65	0.65	18.55	22.72	29.33	34.70	41.48	58.65	71.84	92.74	131.16	4.331	2.264	60 - 90 - 120
1-1/2 PM - 68	0.69	19.49	23.87	30.82	36.47	43.59	61.64	75.50	97.47	137.84	4.331	2.264	60 - 90 - 120
2 PM - 75	0.75	23.9	29.2	37.7	44.6	53.4	75.5	92.4	119.3	168.7	7.205	2.638	60 - 90 - 120
2 PM - 81	0.81	26.0	31.8	41.1	48.6	58.1	82.2	100.7	130.0	183.8	7.205	2.638	60 - 90 - 120
2 PM - 87	0.87	32.1	39.4	50.8	60.1	71.9	101.6	124.5	160.7	227.2	7.205	2.638	60 - 90 - 120
2 PM - 93	0.93	36.0	44.1	57.0	67.4	80.6	113.9	139.6	180.2	254.8	7.677	3.268	60 - 90 - 120
2 PM - 100	1.00	42.2	51.7	66.7	78.9	94.3	133.4	163.3	210.9	298.2	7.677	3.268	60 - 90 - 120
2 PM - 112	1.12	51.7	63.4	81.8	96.8	115.7	163.6	200.4	258.7	365.9	7.677	3.268	60 - 90 - 120
2-1/2 PM - 100	0.99	42.2	51.7	66.7	78.9	94.3	133.4	163.3	210.9	298.2	7.677	3.268	60 - 90 - 120
2-1/2 PM - 112	1.12	51.7	63.4	81.8	96.8	115.7	163.6	200.4	258.7	365.9	7.677	3.268	60 - 90 - 120
2-1/2 PM - 125	1.25	62.1	76.1	98.3	116.3	139.0	196.5	240.7	310.7	439.4	9.646	3.268	60 - 90 - 120
2-1/2 PM - 137	1.37	74.5	91.3	117.9	139.5	166.7	235.7	288.7	372.7	527.1	9.646	4.016	60 - 90 - 120
2-1/2 PM - 150	1.50	91.3	111.8	144.4	170.9	204.2	288.8	353.7	456.6	645.8	10.630	4.016	60 - 90 - 120
3 PM - 150	1.50	91.3	111.8	144.4	170.9	204.2	288.8	353.7	456.6	645.8	10.827	4.803	60 - 90 - 120
3 PM - 162	1.62	107.5	131.7	170.0	201.1	240.4	340.0	416.4	537.5	760.2	10.827	4.803	60 - 90 - 120
3 PM - 175	1.75	122.9	150.5	194.3	229.9	274.7	388.5	475.9	614.3	868.8	10.827	4.803	60 - 90 - 120
4 PM - 175	1.75	122.9	150.5	194.3	229.9	274.7	388.5	475.9	614.3	868.8	13.386	4.803	60 - 90 - 120
4 PM - 187	1.87	138.2	169.3	218.6	258.6	309.1	437.1	535.3	691.1	977.4	13.386	4.803	60 - 90 - 120
4 PM - 200	2.00	161.9	198.2	255.9	302.8	361.9	511.8	626.9	809.3	1.144.5	13.386	5.945	60 - 90 - 120
4 PM - 212	2.13	180.8	221.4	285.8	338.2	404.2	571.6	700.1	903.8	1.278.1	13.386	5.945	60 - 90 - 120
4 PM - 225	2.25	196.1	240.2	310.1	366.9	438.5	620.2	759.6	980.6	1.386.7	13.386	5.945	60 - 90 - 120

FLAT SPRAY NOZZLES
BOQUILLAS DE SALIDA PLANA

C1
FLAT SPRAY METAL TIPS
ORIFICIOS DE PULVERIZACION DE SALIDA PLANA

Characteristics
- C1 tips are a four piece unit that consists of a threaded body (1/8",1/4", 3/8"), filter, flat spray tip, and threaded cap. The design allows for easy orientation and removal of the tip and filter. These are available in brass, 303SS, and 316SS. Tips and other components can be purchased separately.
- Available in the following spray angles: 0°- 15°- 25°- 40°- 50°- 65° 80°- 95° -110°.

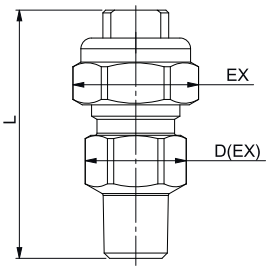
Caracteristicas
- *Los orificios C1 son en latón, acero AISI 303, AISI 316. Su forma particular, hace sencillo regular la orientación de la pulverización. El spray produce pequeñas gotas de tamaño medio. Reducción de costos de reemplazo, protegidos por el orificio de la geometría del agujero.*
- *Pulverización disponibles son: 0° - 15° - 25°- 40° - 50° - 65° - 80°- 95° - 110°.*

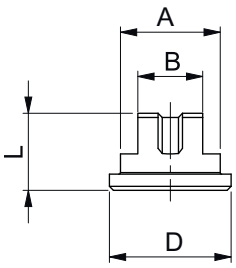
Applications
- Washing
- Surface treatment
- Cooling
- Humidifying
- Lubrication
- Degreasing

Aplicaciones
- *Todo tipo de lavados.*
- *Tratamiento de superficies.*
- *Refrigeración.*
- *Humidificación.*
- *Lubricación.*
- *Desengrase.*

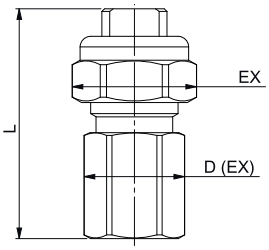
C1

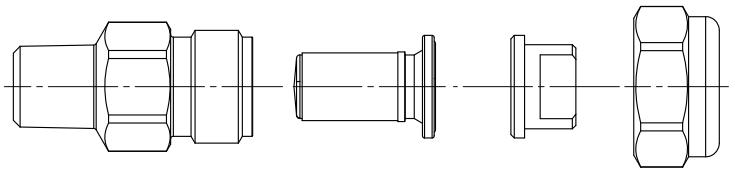
C1 MALE ASSEMBLY





C1 FEMALE ASSEMBLY





Material
Brass, 303SS, and 316SS, others available upon request.

Dimensions (inches)

Model	L	D	A	B
from 0017 to 40	0.374	0.591	0.484	0.315
from 50 to 70	0.492	0.591	0.484	0.315

Dimensions Assembly (inches)

Connection	L	D (EX)	EX
1/8" M	1.811	0.866	0.669
1/8" F	1.890	0.866	0.669
1/4" M	1.811	0.866	0.669
1/4" F	1.969	0.866	0.669
3/8" M	1.890	0.866	0.787
3/8" F	1.969	0.866	0.748

Type of nozzle	Diam. Orifice (in.)	PRESSURE (psi)									
		7	10	20	40	60	80	100	150	200	300
		CAPACITY (gallons per minute)									
0017	0.011	0.01	0.01	0.01	**0.02**	0.02	0.02	0.03	0.03	0.04	0.05
0025	0.013	0.01	0.01	0.02	**0.03**	0.03	0.04	0.04	0.05	0.06	0.08
0033	0.015	0.01	0.02	0.02	**0.03**	0.04	0.05	0.05	0.06	0.07	0.09
0050	0.018	0.02	0.03	0.04	**0.05**	0.06	0.07	0.08	0.10	0.11	0.14
0067	0.021	0.03	0.03	0.05	**0.07**	0.08	0.09	0.10	0.13	0.15	0.18
01	0.026	0.04	0.05	0.07	**0.10**	0.12	0.14	0.16	0.19	0.22	0.27
015	0.031	0.06	0.07	0.11	**0.15**	0.18	0.21	0.24	0.29	0.33	0.41
02	0.036	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	0.38	0.44	0.54
03	0.043	0.13	0.15	0.21	**0.30**	0.37	0.43	0.48	0.59	0.68	0.83
04	0.051	0.17	0.20	0.29	**0.41**	0.50	0.57	0.64	0.78	0.91	1.11
05	0.055	0.21	0.25	0.36	**0.51**	0.62	0.72	0.80	0.98	1.13	1.39
06	0.063	0.24	0.29	0.41	**0.58**	0.71	0.82	0.92	1.13	1.30	1.60
08	0.071	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	1.57	1.81	2.22
10	0.079	0.41	0.49	0.70	**0.99**	1.21	1.40	1.56	1.91	2.21	2.71
15	0.094	0.63	0.75	1.06	**1.49**	1.83	2.11	2.36	2.89	3.34	4.09
20	0.110	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83	4.42	5.41
30	0.142	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	5.74	6.63	8.12
40	0.157	1.65	1.98	2.79	**3.95**	4.84	5.59	6.25	7.65	8.83	10.82
50	0.173	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	11.04	13.53
60	0.189	2.45	2.93	4.14	**5.85**	7.17	8.27	9.25	11.33	13.08	16.02
70	0.205	2.86	3.42	4.84	**6.84**	8.38	9.67	10.81	13.25	15.29	18.73

KC1
FLAT SPRAY PLASTIC TIPS
ORIFICIOS DE PULVERIZACION DE SALIDA PLANA

Characteristics
- C1 tips are a four piece assembly that consists of a threaded body (1/8",1/4", 3/8"), filter, flat spray tip, and threaded cap.
- The design allows for easy spray tip orientation, as well as easy removal of the tip and filter.
- Spray tips are available in color coded polypropylene.
- Can be purchased by component or complete assembly.
- Spray angles available are: 80° and 110°. Other spray angles by request.

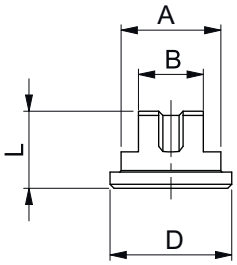
Caracteristicas
- *KC1 son de materiale plastic, polipropileno. Su forma particular, hace sensillo la orientación de la pulvericazión.Reducción de costos de reemplazo. El orificio esta protegido por la geometría que tiene.*
- *Los ángulos de pulverización disonible son: 80° y 110° Otros ángulos bajo pedido.*

Applications
- Washing
- Cooling
- Surface treatment
- Lubrication
- Agriculture

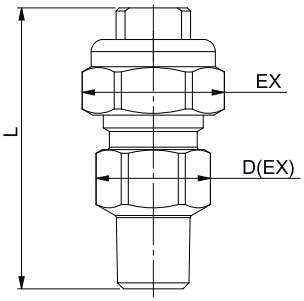
Aplicaciones
- *Lavados.*
- *Refrigeración.*
- *Tratamiento de superficies.*
- *Lubricación.*
- *Agricoltura*

Material
Polypropylene

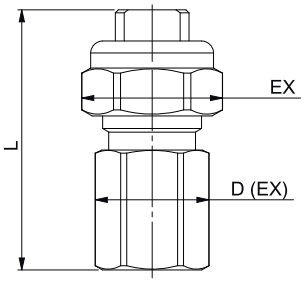
KC1



KC1 MALE ASSEMBLY



KC1 FEMALE ASSEMBLY



Dimensions (inches)

L	D	A	B
0.374	0.591	0.484	0.315

Type of nozzle	PRESSURE (psi)							
	7	10	20	**40**	60	80	100	150
	CAPACITY (gallons per minute)							
01	0.04	0.05	0.07	**0.10**	0.12	0.14	0.16	0.19
015	0.06	0.07	0.11	**0.15**	0.18	0.21	0.24	0.29
02	0.08	0.10	0.14	**0.20**	0.24	0.28	0.31	0.38
03	0.13	0.15	0.21	**0.30**	0.37	0.43	0.48	0.59
04	0.17	0.20	0.29	**0.41**	0.50	0.57	0.64	0.78
05	0.21	0.25	0.36	**0.51**	0.62	0.72	0.80	0.98
06	0.24	0.29	0.41	**0.58**	0.71	0.82	0.92	1.13
08	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	1.57
15	0.63	0.75	1.06	**1.49**	1.83	2.11	2.36	2.89
20	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83

All the nozzles are available with 80° or 110° of spraying angle

TC
FLAT SPRAY DOVETAIL TIPS
BOQUILLAS DE SALIDA PLANA "AIRLESS"

Characteristics
- Airless flat spray tips, with tungsten carbide inserts, provide a very high resistance to abrasion.

Caracteristicas
- *Todas las boquillas de salida plana de la serie "Airless" tienen insertos de carburo de tungsteno de muy alta calidad que garantizan la máxima resistencia a la abrasión y la distribución uniforme.*

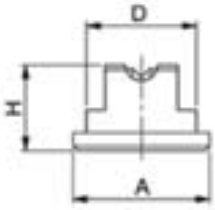
Applications
- Airless paint spraying
- Protective coatings
- Enamelling

Aplicaciones
- *Pintura de pulverización*
- *Rociado de recubrimiento protector*
- *Esmaltado.*

Material
Body: 303SS
Insert: Tungsten Carbide

LONG SIZE (Inch.)
H= 0.492
D= 0.405
A= 0.590

SHORT SIZE (Inch.)
H= 0.374
D= 0.405
A= 0.590



Type of nozzle	Diam. Orifice (in.)	Available spray angle <°							PRESSURE (psi)				Body lenght
									750	1500	2000	3000	
		40	50	65	**80**	95	110	130	CAPACITY (gallons per minute)				
0017	0.011					•			0.074	0.105	0.121	0.148	Short
0025	0.013				•	•			0.108	0.153	0.177	0.217	Short
0033	0.015			•	•	•	•		0.142	0.201	0.233	0.285	Short
0039	0.016				•	•	•		0.169	0.239	0.276	0.338	Short
0050	0.018						•		0.209	0.296	0.341	0.418	Short
0067	0.021			•	•	•	•		0.285	0.403	0.465	0.570	Short
0080	0.023			•	•	•	•		0.342	0.484	0.558	0.684	Short
01	0.026			•	•	•	•		0.437	0.618	0.713	0.874	Short
015	0.031			•	•	•	•	•	0.646	0.913	1.055	1.292	Short
02	0.036			•	•	•	•	•	0.874	1.236	1.427	1.748	Short
03	0.043		•	•	•	•	•	•	1.292	1.827	2.109	2.584	Long
04	0.051			•	•	•	•	•	1.729	2.445	2.823	3.457	Long
05	0.055			•	•	•	•	•	2.166	3.063	3.536	4.331	Long
06	0.063	•	•	•	•	•	•	•	2.603	3.681	4.250	5.205	Long
07	0.067			•	•	•	•		3.039	4.298	4.963	6.079	Long
08	0.071			•	•	•	•	•	3.457	4.889	5.646	6.915	Long
09	0.075						•		3.989	5.642	6.514	7.979	Long

CRC1
FLAT SPRAY DOVETAIL TIPS
ORIFICIOS DE PULVERIZACION DE SALIDA PLANA

Characteristics
- Three piece assembly comprised of a welding nipple, dovetail flat spray tip, and locking nut.
- Dovetail connection allows easy spray tip orientation and easy tip removal.

Caracteristicas
- *Boquilla de chorro planocon distribución uniforme.Conexion "cola de milano "que facilitan el mantenimiento y la orientación. Disponiblecon cuerpo a soldar con tuerca.*

Applications
- Metal surface treatment
- Cooling and lubrication
- Pickling
- Washing

Aplicaciones
- *Tratamiento de superscies.*
- *Enfriamento y lubricación cilindros de laminación.*
- *Decapado.*
- *Lavados.*

Material
Brass, 303SS, and 316SS, others available upon request.

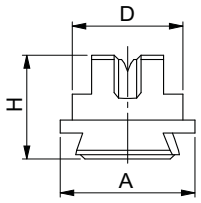
Dimensions (inches)

SIZE	H	D	A
3/8"	0.472	0.480	0.579
3/4"	0.591	0.787	0.937

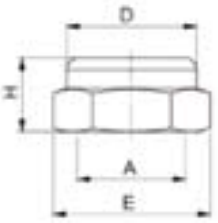
Dimensions (inches)

Connection	A	H	D	E
Nut 3/8"	3/8"	0.472	0.827	0.866
Nut 3/4"	3/4"	0.551	1.220	1.260
Weld. Nipple 3/8"	3/8"	0.669	0.709	-
Weld. Nipple 3/4"	3/4"	1.063	1.063	-

CRC1



NUT



WELDING NIPPLE

Size		Type of nozzle	PRESSURE (psi)						
			10	20	40	60	80	100	150
3/8"	3/4"		CAPACITY (gallons per minute)						
•		03	0.15	0.21	**0.30**	0.37	0.43	0.48	0.59
•		04	0.20	0.29	**0.41**	0.50	0.57	0.64	0.78
•		05	0.25	0.36	**0.51**	0.62	0.72	0.80	0.98
•		06	0.29	0.41	**0.58**	0.71	0.82	0.92	1.13
•		08	0.41	0.57	**0.81**	0.99	1.15	1.28	1.57
•		10	0.49	0.70	**0.99**	1.21	1.40	1.56	1.91
•		15	0.75	1.06	**1.49**	1.83	2.11	2.36	2.89
•	•	20	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83
•	•	30	1.48	2.10	**2.96**	3.63	4.19	4.69	5.74
•	•	40	1.98	2.79	**3.95**	4.84	5.59	6.25	7.65
•	•	50	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57
•	•	60	2.93	4.14	**5.85**	7.17	8.27	9.25	11.33
•	•	70	3.42	4.84	**6.84**	8.38	9.67	10.81	13.25
	•	80	3.93	5.55	**7.85**	9.62	11.10	12.42	15.21
	•	127	6.21	8.78	**12.41**	15.20	17.55	19.62	24.04
	•	158	7.73	10.93	**15.45**	18.92	21.85	24.43	29.92
	•	197	9.63	13.61	**19.25**	23.58	27.22	30.44	37.28
	•	316	15.45	21.85	**30.90**	37.85	43.70	48.86	59.85

MC2
FLAT SPRAY NOZZLE (LOW FLOW)
SALIDA PLANA

Characteristics
- Low flow flat spray nozzles, with optional filter.
- Available in a 1/8" and 1/4", NPT or BSPT, male connection.
- Available spray angles: 0°- 15°- 25°- 40°- 50°- 65° 80°- 95°- 110°.

Caracteristicas
- *Boquilla para bajo caudal. Boquilla en una sola pieza. Rosca de Conexión macho con o sin filtro.*
- *Angulos de aspersión posibles: 0° - 15° - 25°-40° 50° - 65° - 80° -95°-110°.*

Applications
- Washing
- Cooling
- Lubrication

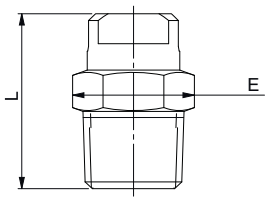
Aplicaciones
- *Lavado.*
- *Enfriamiento.*
- *Lubricación.*
- *Tratamiento de superficies.*

Material
Brass, 303SS, and 316SS, others available upon request.

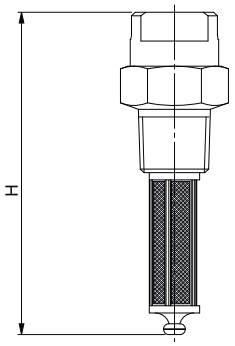
Dimensions (inches)

Connection	L	E	H
1/8"	0.866	0.512	1.673
1/4"	0.925	0.551	1.614

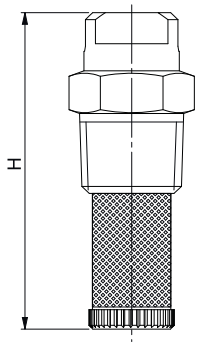
MC2



PLASTIC FILTER



SS FILTER



Type of nozzle		Diam. Orifice (in.)	PRESSURE (psi)									
			7	10	20	40	60	80	100	150	200	300
			CAPACITY (gallons per minute)									
1/8 MC2 – 0017	1/4 MC2 – 0017	0.011	0.007	0.008	0.012	**0.017**	0.021	0.024	0.027	0.033	0.038	0.046
1/8 MC2 – 0025	1/4 MC2 – 0025	0.013	0.012	0.014	0.020	**0.028**	0.034	0.039	0.044	0.054	0.062	0.076
1/8 MC2 – 0033	1/4 MC2 – 0033	0.015	0.014	0.016	0.023	**0.033**	0.040	0.047	0.052	0.064	0.074	0.090
1/8 MC2 – 0050	1/4 MC2 – 0050	0.018	0.021	0.025	0.036	**0.051**	0.062	0.072	0.080	0.098	0.113	0.139
1/8 MC2 – 0067	1/4 MC2 – 0067	0.021	0.028	0.033	0.047	**0.066**	0.081	0.093	0.104	0.128	0.147	0.180
1/8 MC2 – 01	1/4 MC2 – 01	0.026	0.041	0.049	0.070	**0.099**	0.121	0.140	0.156	0.191	0.221	0.271
1/8 MC2 – 015	1/4 MC2 – 015	0.031	0.063	0.075	0.106	**0.149**	0.183	0.211	0.236	0.289	0.334	0.409
1/8 MC2 – 02	1/4 MC2 – 02	0.036	0.083	0.099	0.140	**0.198**	0.242	0.279	0.312	0.383	0.442	0.541
1/8 MC2 – 03	1/4 MC2 – 03	0.043	0.127	0.152	0.215	**0.304**	0.372	0.430	0.481	0.589	0.680	0.832
1/8 MC2 – 04	1/4 MC2 – 04	0.051	0.170	0.203	0.287	**0.405**	0.496	0.573	0.641	0.785	0.906	1.110
1/8 MC2 – 05	1/4 MC2 – 05	0.055	0.212	0.253	0.358	**0.507**	0.620	0.716	0.801	0.981	1.133	1.387
1/8 MC2 – 06	1/4 MC2 – 06	0.063	0.244	0.291	0.412	**0.583**	0.713	0.824	0.921	1.128	1.303	1.595
1/8 MC2 – 08	1/4 MC2 – 08	0.071	0.339	0.405	0.573	**0.811**	0.993	1.146	1.282	1.570	1.812	2.220
1/8 MC2 – 10	1/4 MC2 – 10	0.079	0.413	0.494	0.699	**0.988**	1.210	1.397	1.562	1.913	2.209	2.705
1/8 MC2 – 15	1/4 MC2 – 15	0.094	0.625	0.747	1.057	**1.494**	1.830	2.113	2.363	2.894	3.341	4.093

MC3E
FLAT SPRAY NOZZLE
ORIFICIOS DE PULVERIZACION DE SALIDA PLANA

Characteristics
- Low flow flat spray nozzle
- Available spray angles: 0°-15°- 25°- 40°- 50°- 65° 80° 95°- 110°.

Caracteristicas
- *Boquillas en una sola pieza. Rosca de conexión macho.*
- *Angulos de aspersión posibles: 0° - 15°- 25°- 40°- 50° - 65° 80° - 95°-110°*

Applications
- Industrial Washing
- Metal surface treatment
- Coal and gravel washing
- Cooling
- Degreasing

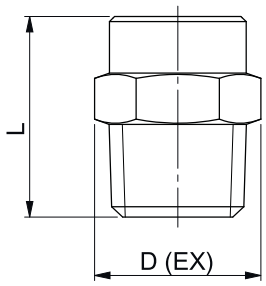
Aplicaciones
- *Lavados industriales.*
- *Tratamiento de superficies.*
- *Enfriamient.*
- *Desengrase.*
- *Lavado inerte.*

Material
Brass, 303SS, and 316SS, others available upon request.

Dimensions (inches)

Connection	D(EX)	L
1/8"	0.512	0.669
1/4"	0.551	0.768
3/8"	0.669	0.984
1/2"	0.866	1.299
3/4"	1.063	1.969
1"	1.299	2.362
1-1/4"	1.732	3.543

MC3E



Available in a quick disconnect model, see page 8.

Type of nozzle	Diam. Orifice (in.)	PRESSURE (psi)									
		7	10	20	**40**	60	80	100	150	200	300
		CAPACITY (gallons per minute)									
1/4 MC3E – 03	0.043	0.13	0.15	0.21	**0.30**	0.37	0.43	0.48	0.59	0.68	0.83
1/4 MC3E – 04	0.051	0.17	0.20	0.29	**0.41**	0.50	0.57	0.64	0.78	0.91	1.11
1/4 MC3E – 06	0.063	0.24	0.29	0.41	**0.58**	0.71	0.82	0.92	1.13	1.30	1.60
1/4 MC3E – 08	0.071	0.34	0.41	0.57	**0.81**	0.99	1.15	1.28	1.57	1.81	2.22
1/4 MC3E – 10	0.079	0.41	0.49	0.70	**0.99**	1.21	1.40	1.56	1.91	2.21	2.71
1/4 MC3E – 15	0.094	0.63	0.75	1.06	**1.49**	1.83	2.11	2.36	2.89	3.34	4.09
1/4 MC3E – 20	0.110	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83	4.42	5.41
1/4 MC3E – 30	0.142	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	5.74	6.63	8.12
1/4 MC3E – 40	0.157	1.66	1.99	2.81	**3.98**	4.87	5.62	6.29	7.70	8.89	10.89
1/4 MC3E – 50	0.173	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	11.04	13.53
1/4 MC3E – 60	0.189	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	13.03	15.95
1/4 MC3E – 70	0.205	2.86	3.42	4.84	**6.84**	8.38	9.67	10.81	13.25	15.29	18.73
1/4 MC3E – 80	0.213	3.29	3.93	5.55	**7.85**	9.62	11.10	12.42	15.21	17.56	21.50
3/8 MC3E – 10	0.079	0.41	0.49	0.70	**0.99**	1.21	1.40	1.56	1.91	2.21	2.71
3/8 MC3E – 15	0.094	0.63	0.75	1.06	**1.49**	1.83	2.11	2.36	2.89	3.34	4.09
3/8 MC3E – 20 *	0.110	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83	4.42	5.41
3/8 MC3E – 30	0.142	1.24	1.48	2.10	**2.96**	3.63	4.19	4.69	5.74	6.63	8.12
3/8 MC3E – 40	0.157	1.66	1.99	2.81	**3.98**	4.87	5.62	6.29	7.70	8.89	10.89
3/8 MC3E – 50	0.173	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	11.04	13.53
3/8 MC3E – 60	0.189	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	13.03	15.95
3/8 MC3E – 70	0.205	2.86	3.42	4.84	**6.84**	8.38	9.67	10.81	13.25	15.29	18.73
3/8 MC3E – 100	0.252	4.13	4.94	6.99	**9.88**	12.10	13.97	15.62	19.13	22.09	27.05
3/8 MC3E – 120	0.276	4.88	5.83	8.24	**11.65**	14.27	16.48	18.42	22.57	26.05	31.91
1/2 MC3E – 15	0.094	0.63	0.75	1.06	**1.49**	1.83	2.11	2.36	2.89	3.34	4.09
1/2 MC3E – 50	0.173	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	11.04	13.53
1/2 MC3E – 60	0.189	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	13.03	15.95
1/2 MC3E – 100	0.252	4.13	4.94	6.99	**9.88**	12.10	13.97	15.62	19.13	22.09	27.05
1/2 MC3E – 150	0.295	6.31	7.54	10.66	**15.07**	18.46	21.31	23.83	29.19	33.70	41.27
1/2 MC3E – 200	0.343	8.00	9.56	13.52	**19.12**	23.42	27.04	30.24	37.04	42.76	52.37
3/4 MC3E – 200	0.343	7.95	9.50	13.43	**19.00**	23.27	26.87	30.04	36.79	42.48	52.03
3/4 MC3E – 250	0.374	10.39	12.41	17.55	**24.82**	30.40	35.10	39.25	48.07	55.50	67.98
3/4 MC3E – 350	0.437	14.52	17.35	24.54	**34.70**	42.50	49.07	54.87	67.21	77.59	95.03
3/4 MC3E – 400	0.465	16.54	19.76	27.94	**39.51**	48.39	55.88	62.48	76.53	88.35	108.21
1 MC3E – 500	0.516	20.67	24.70	34.93	**49.39**	60.49	69.85	78.09	95.66	110.44	135.27
1 MC3E – 580	0.551	23.85	28.50	40.30	**56.99**	69.80	80.60	90.11	110.38	127.43	156.08

HP
HIGH PRESSURE NOZZLES
SALIDA PLANA PARA ALTA PRESION

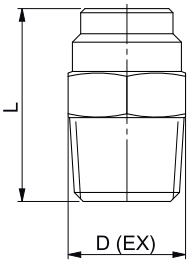
Characteristics
- High pressure flat or solid stream spray nozzles HP/HHP nozzles are a one piece, high pressure, nozzle. These nozzles have an extended wear life due to precision machining, design, and a specialized surface coating.

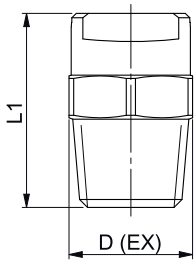
Applications
- High pressure cleaning
- Industrial washing

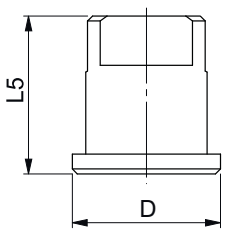
Caracteristicas
- *Las boquillas de salida plana o rectilíneo del tipo HP, garantizan una precisión óptima, así como un fuerte impacto, gracias a un mecanizado preciso y un tratamiento de superficie antidesgaste particular. Orificio protegido contra choques accidentales.*

Aplicaciones
- *Máquinas de lavado de alta presión.*
- *Lavados industriales.*

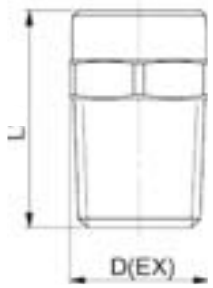
HP







H500P



Dimensions (inches)

Connection	D	D (EX)	L	L1	L5
1/8" HP	-	0.512	-	0.866	-
1/4" HP	-	0.551	-	0.866	-
1/8" HP 0°	-	0.512	0.906	-	-
1/4" HP 0°	-	0.551	0.906	-	-
C4 TIP	0.591	-	-	-	0.630
H500P	-	-	0.866	-	-

Type of nozzle	0°		15° - 25° - 40° 50° - 65°		Diam. Orifice (in.)	PRESSURE (psi)									
						300	600	900	1200	1500	1800	2200	3000	4501	7000
	1/8	1/4	1/8	1/4		CAPACITY (gallons per minute)									
015	•	•	•	•	0.031	0.41	0.58	0.71	0.82	**0.91**	1.00	1.11	1.29	1.58	1.97
02	•	•	•	•	0.035	0.54	0.76	0.94	1.08	**1.21**	1.32	1.46	1.71	2.09	2.61
025	•	•	•	•	0.039	0.68	0.97	1.19	1.37	**1.53**	1.68	1.85	2.17	2.65	3.31
03	•	•	•	•	0.043	0.83	1.17	1.44	1.66	**1.85**	2.03	2.24	2.62	3.21	4.00
035	•	•	•	•	0.045	0.97	1.38	1.69	1.95	**2.18**	2.38	2.64	3.08	3.77	4.70
04	•	•	•	•	0.047	1.09	1.55	1.89	2.19	**2.44**	2.68	2.96	3.46	4.23	5.28
045	•	•	•	•	0.051	1.23	1.73	2.12	2.45	**2.74**	3.00	3.32	3.88	4.75	5.92
05	•	•	•	•	0.053	1.37	1.94	2.37	2.74	**3.06**	3.36	3.71	4.33	5.30	6.62
055	•	•	•	•	0.055	1.50	2.12	2.60	3.00	**3.36**	3.68	4.07	4.75	5.82	7.25
06	•	•	•	•	0.059	1.63	2.31	2.83	3.27	**3.65**	4.00	4.42	5.17	6.33	7.89
065	•	•	•	•	0.061	1.78	2.51	3.08	3.56	**3.98**	4.36	4.82	5.62	6.89	8.59
07	•	•	•	•	0.063	1.96	2.77	3.39	3.92	**4.38**	4.80	5.30	6.19	7.59	9.46
075	•	•	•	•	0.065	2.04	2.89	3.54	4.09	**4.57**	5.00	5.53	6.46	7.91	9.87
08	•	•	•	•	0.067	2.21	3.13	3.83	4.42	**4.94**	5.42	5.99	6.99	8.56	10.68
085	•	•	•	•	0.069	2.28	3.23	3.95	4.57	**5.10**	5.59	6.18	7.22	8.84	11.03
09	•	•	•	•	0.071	2.46	3.48	4.27	4.93	**5.51**	6.03	6.67	7.79	9.54	11.90
10	•	•	•	•	0.075	2.72	3.84	4.70	5.43	**6.07**	6.65	7.35	8.59	10.52	13.12
13	-	•	-	•	0.087	3.48	4.93	6.03	6.97	**7.79**	8.53	9.44	11.02	13.50	16.83
15	-	•	-	•	0.094	4.09	5.78	7.08	8.17	**9.13**	10.01	11.06	12.92	15.82	19.73
20	-	•	-	•	0.106	5.39	7.63	9.34	10.79	**12.06**	13.21	14.61	17.06	20.89	26.06
25	-	•	-	•	0.118	6.80	9.62	11.78	13.60	**15.21**	16.66	18.42	21.50	26.34	32.85
30	-	•	-	•	0.130	8.11	11.47	14.05	16.22	**18.13**	19.87	21.96	25.65	31.41	39.17
40	-	•	-	•	0.150	10.79	15.26	18.69	21.58	**24.13**	26.43	29.22	34.12	41.79	52.12
50	-	•	-	•	0.165	13.42	18.98	23.25	26.84	**30.01**	32.87	36.34	42.44	51.98	64.83
60	-	•	-	•	0.185	16.34	23.11	28.30	32.68	**36.54**	40.02	44.25	51.67	63.29	78.93

CD3 - DH
FLOODING FLAT SPRAY NOZZLES
SALIDA PLANA POR DEFLEXION

Characteristics
- Low impact wide angle nozzle. Available in the CD3 one piece design or the DH three piece design, which includes a body, cap, and tip.

Caracteristicas
- *Angulo de aspersión muy abierto con bajo impacto. Tipo CD3 de cuerpo único, rosca de conexión macho. Tipo DH: orificio de pulverización para ensamblaje junto con los accesorios.*

Applications
- Cooling
- Film washing
- Lubrication
- Felt humidifying

Aplicaciones
- *Enfriamiento.*
- *Lavado de películas.*
- *Protección contra incendios.*
- *Lubricación.*
- *Humidificación.*

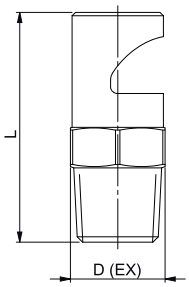
Material
Brass, 303SS, and 316SS, others available upon request.

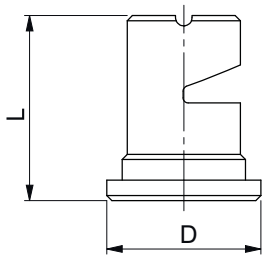
Dimensions (inches)

Connection	D	D(EX)	L
DH TIP	0,591	-	0,787
1/8"	-	0.433	1.220
1/4"	-	0.551	1.339
3/8"	-	0.669	1.732
1/2"	-	0.866	1.969
3/4"	-	1.260	2.559
1"	-	1.811	3.661

CD3

DH





Available in a quick disconnect model, see page 8.

Type of nozzle		Diam. Orifice (in.)	PRESSURE (psi) 3	7	10	15	**20**	30	**40**	50	60	80	100	150	<° 20 psi
			CAPACITY (gallons per minute)												
1/8 CD3 – 0.50	DH – 0.50	0.024	0.03	0.04	0.05	0.06	0.07	0.09	**0.10**	0.11	0.12	0.14	0.16	0.20	90
1/8 CD3 – 0.75	DH – 0.75	0.028	0.04	0.06	0.07	0.09	0.11	0.13	**0.15**	0.17	0.18	0.21	0.24	0.29	106
1/8 CD3 – 1	DH – 1	0.033	0.05	0.08	0.10	0.12	0.14	0.17	**0.20**	0.22	0.24	0.28	0.31	0.38	110
1/8 CD3 – 1.50	DH – 1.50	0.039	0.08	0.13	0.15	0.19	0.21	0.26	**0.30**	0.34	0.37	0.43	0.48	0.59	115
1/8 CD3 – 2	DH – 2	0.047	0.11	0.17	0.20	0.25	0.29	0.35	**0.41**	0.45	0.50	0.57	0.64	0.78	115
1/8 CD3 – 2.50	DH – 2.50	0.051	0.14	0.22	0.26	0.32	0.37	0.45	**0.52**	0.58	0.64	0.73	0.82	1.01	130
1/8 CD3 – 3	DH – 3	0.055	0.17	0.25	0.30	0.37	0.43	0.53	**0.61**	0.68	0.74	0.86	0.96	1.18	120
1/8 CD3 – 5	DH – 5	0.075	0.27	0.41	0.49	0.61	0.70	0.86	**0.99**	1.10	1.21	1.40	1.56	1.91	130
1/8 CD3 – 7.50	DH – 7.50	0.091	0.42	0.64	0.76	0.93	1.07	1.32	**1.52**	1.70	1.86	2.15	2.40	2.94	120
1/8 CD3 – 10	DH – 10	0.102	0.54	0.83	0.99	1.21	1.40	1.71	**1.98**	2.21	2.42	2.79	3.12	3.83	145
1/8 CD3 – 15	DH – 15	0.130	0.82	1.25	1.49	1.83	2.11	2.59	**2.99**	3.34	3.66	4.23	4.73	5.79	125
1/8 CD3 – 18	DH – 18	0.142	0.96	1.47	1.76	2.16	2.49	3.05	**3.52**	3.93	4.31	4.98	5.57	6.82	140
1/4 CD3 – 2		0.047	0.11	0.17	0.20	0.25	0.29	0.35	**0.41**	0.45	0.50	0.57	0.64	0.78	115
1/4 CD3 – 2.5		0.051	0.15	0.22	0.27	0.33	0.38	0.46	**0.53**	0.59	0.65	0.75	0.84	1.03	130
1/4 CD3 – 3		0.055	0.17	0.26	0.32	0.39	0.45	0.55	**0.63**	0.71	0.78	0.90	1.00	1.23	120
1/4 CD3 – 5		0.075	0.27	0.41	0.49	0.61	0.70	0.86	**0.99**	1.10	1.21	1.40	1.56	1.91	130
1/4 CD3 – 10		0.102	0.54	0.83	0.99	1.21	1.40	1.71	**1.98**	2.21	2.42	2.79	3.12	3.83	145
1/4 CD3 – 15		0.130	0.82	1.25	1.49	1.83	2.11	2.59	**2.99**	3.34	3.66	4.23	4.73	5.79	125
1/4 CD3 – 20	DH – 20	0.146	1.08	1.65	1.98	2.42	2.79	3.42	**3.95**	4.41	4.84	5.59	6.25	7.65	140
3/8 CD3 – 30	DH – 30	0.181	1.64	2.50	2.99	3.66	4.23	5.18	**5.98**	6.68	7.32	8.45	9.45	11.58	130
3/8 CD3 – 40		0.209	2.18	3.33	3.98	4.87	5.62	6.89	**7.95**	8.88	9.74	11.25	12.58	15.40	140
1/2 CD3 – 40		0.209	2.18	3.33	3.98	4.87	5.62	6.89	**7.95**	8.88	9.74	11.25	12.58	15.40	140
1/2 CD3 – 60		0.256	3.27	4.99	5.97	7.31	8.44	10.33	**11.93**	13.32	14.61	16.87	18.86	23.11	140
1/2 CD3 – 80		0.295	4.35	6.65	7.94	9.73	11.23	13.76	**15.88**	17.74	19.45	22.46	25.11	30.76	140
3/4 CD3 – 120		0.366	6.53	9.97	11.92	14.60	16.85	20.64	**23.83**	26.62	29.19	33.71	37.69	46.16	130
3/4 CD3 – 210		0.484	11.52	17.60	21.02	25.75	29.73	36.42	**42.05**	46.96	51.50	59.46	66.48	81.43	140
1" CD3 – 300		0.579	16.31	24.91	29.76	36.46	42.09	51.56	**59.52**	66.48	72.90	84.18	94.11	115.28	155
1" CD3 – 450		0.705	24.63	37.63	44.96	55.07	63.58	77.88	**89.92**	100.42	110.13	127.16	142.17	174.15	155

CD4
HIGH IMPACT FLAT SPRAY NOZZLE
SALIDA PLANA POR DEFLEXION

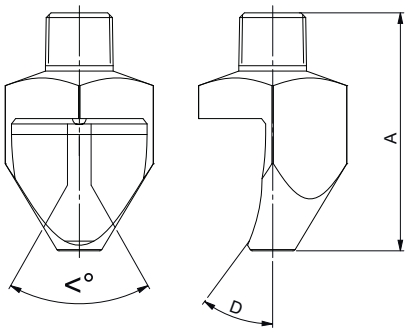
Characteristics
- High impact flat spray nozzles with sharply defined edges.

Applications
- High impact washing
- Degreasing
- Coal and gravel washing
- Shower pipes in paper industry
- Street cleaning

Caracteristicas
- *Chorro plano de fuerte impacto con bordes bien definidos.*

Aplicaciones
- *Lavado con fuerte impacto.*
- *Desengrase.*
- *Lavado inerte.*
- *Lavado en industria del papel.*
- *Limpieza calles.*

CD4



Material
Brass, 303SS, and 316SS, others available upon request.

Available in a quick disconnect model, see page 8.

Spray angle <°	Type of nozzle	Deflected angle D <°	Diam. Orifice (in.)	PRESSURE (psi)								Lenght A (inch.)
				7	10	20	40	60	80	100	150	
				CAPACITY (gallons per minute)								
15	1/4 CD4 – 10	22	0.075	0.42	0.51	0.72	**1.01**	1.24	1.43	1.60	1.96	1.87
15	1/4 CD4 – 20	20	0.102	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83	2.13
15	3/8 CD4 – 30	25	0.130	1.23	1.47	2.08	**2.94**	3.60	4.16	4.65	5.69	2.83
15	3/8 CD4 – 50	15	0.161	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	3.56
15	1/2 CD4 – 60	14	0.177	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	4.92
15	1/2 CD4 – 80	14	0.205	3.29	3.93	5.55	**7.85**	9.62	11.10	12.42	15.21	5.12
15	1/2 CD4 – 100	14	0.236	4.24	5.07	7.16	**10.13**	12.41	14.33	16.02	19.62	5.39
15	3/4 CD4 – 200	14	0.331	8.27	9.88	13.97	**19.76**	24.20	27.94	31.24	38.26	7.52
25	1/4 CD4 – 40	25	0.146	1.65	1.98	2.79	**3.95**	4.84	5.59	6.25	7.65	2.56
35	1/8 CD4 – 04	40	0.047	0.17	0.20	0.29	**0.41**	0.50	0.57	0.64	0.78	0.91
35	1/4 CD4 – 10	36	0.075	0.42	0.51	0.72	**1.01**	1.24	1.43	1.60	1.96	1.46
35	1/4 CD4 – 20	30	0.102	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83	1.65
35	3/8 CD4 – 20	30	0.102	0.83	0.99	1.40	**1.98**	2.42	2.79	3.12	3.83	1.77
35	3/8 CD4 – 25	28	0.114	1.05	1.25	1.77	**2.51**	3.07	3.55	3.96	4.86	1.93
35	3/8 CD4 – 30	28	0.130	1.23	1.47	2.08	**2.94**	3.60	4.16	4.65	5.69	2.07
35	3/8 CD4 – 40	26	0.146	1.65	1.98	2.79	**3.95**	4.84	5.59	6.25	7.65	2.28
35	3/8 CD4 – 50	23	0.161	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	2.50
35	1/2 CD4 – 60	27	0.177	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	2.87
35	1/2 CD4 – 80	24	0.205	3.29	3.93	5.55	**7.85**	9.62	11.10	12.42	15.21	3.19
35	1/2 CD4 – 100	19	0.236	4.24	5.07	7.16	**10.13**	12.41	14.33	16.02	19.62	3.50
35	3/4 CD4 – 160	23	0.295	6.68	7.98	11.28	**15.96**	19.54	22.57	25.23	30.91	4.53
35	3/4 CD4 – 200	22	0.331	8.27	9.88	13.97	**19.76**	24.20	27.94	31.24	38.26	4.80
40	3/8 CD4 – 40	35	0.146	1.65	1.98	2.79	**3.95**	4.84	5.59	6.25	7.65	2.56
40	3/8 CD4 – 50	33	0.161	2.07	2.47	3.49	**4.94**	6.05	6.98	7.81	9.57	2.50
40	3/8 CD4 – 60	33	0.177	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	2.83
40	3/8 CD4 – 70	29	0.197	2.86	3.42	4.84	**6.84**	8.38	9.67	10.81	13.25	2.97
40	3/8 CD4 – 80	26	0.205	3.29	3.93	5.55	**7.85**	9.62	11.10	12.42	15.21	3.03
40	3/8 CD4 – 90	28	0.224	3.71	4.43	6.27	**8.87**	10.86	12.54	14.02	17.17	3.03
40	3/8 CD4 – 100	28	0.236	4.24	5.07	7.16	**10.13**	12.41	14.33	16.02	19.62	3.41
50	1/4 CD4 – 10	60	0.075	0.42	0.51	0.72	**1.01**	1.24	1.43	1.60	1.96	1.22
50	3/8 CD4 – 25	50	0.114	1.05	1.25	1.77	**2.51**	3.07	3.55	3.96	4.86	1.65
50	3/8 CD4 – 40	45	0.146	1.65	1.98	2.79	**3.95**	4.84	5.59	6.25	7.65	1.85
50	3/8 CD4 – 60	37	0.177	2.44	2.91	4.12	**5.83**	7.13	8.24	9.21	11.28	2.17
50	3/8 CD4 – 100	40	0.236	4.24	5.07	7.16	**10.13**	12.41	14.33	16.02	19.62	2.83
50	3/8 CD4 – 125	38	0.264	5.30	6.33	8.96	**12.66**	15.51	17.91	20.02	24.53	2.83
50	3/8 CD4 – 160	37	0.295	6.68	7.98	11.28	**15.96**	19.54	22.57	25.23	30.91	2.83
50	3/8 CD4 – 200	32	0.331	8.27	9.88	13.97	**19.76**	24.20	27.94	31.24	38.26	2.83

CD6
SELF-CLEANING NOZZLES
BOQUILLAS AUTOLIMPIANTES

Characteristics
- Well-defined flat or needle jet with high impact. Reducing the line pressure a spring retracts inside piston to purge suspended solids from the clogged nozzle.

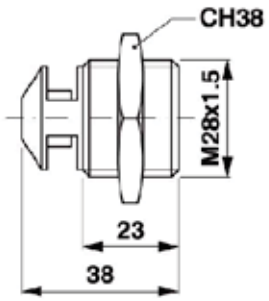
Applications
- Dirty waters industrial washing and white waters
- Wires and felts washing in paper industry

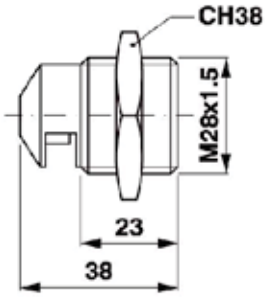
Caracteristicas
- *Chorro plano o rectilineo bien definido con gran fuerza de impacto. Reduciendo la presión de linea, un resorte retrae el pistón interior, dando asi la posibilidad de purgar las partículas que hayan obstruido el orificio.*

Aplicaciones
- *Lavado industrial con agua impura o calcárea*
- *Lavado de fieltros y telas par papeleras*

Material
Stainless Steel, AISI 316, also available with double opposed spray; in this case the single nozzle capacity as shown on the table must be multiplied by two.

CD6





Type of nozzle	PRESSURE (psi)							
	40	70	145	**220**	290	440	580	870
	CAPACITY (gallons per minute)							
CD6 – 1	0.24	0.33	0.48	0.59	0.69	0.83	0.95	1.16
CD6 – 2	0.80	1.07	1.61	2.00	2.27	2.81	3.22	3.96
CD6 – 3	1.09	1.48	2.22	2.75	3.14	3.87	4.44	5.44
CD6 – 4	1.82	2.47	3.70	4.57	5.23	6.47	7.40	9.06
CD6 – 5	2.36	3.19	4.73	5.85	6.68	8.28	9.46	11.62
CD6 – 6	2.79	3.72	5.55	6.87	7.85	9.73	11.10	13.60
CD6 – 7	2.94	3.95	5.84	7.22	8.24	10.21	11.68	14.32
CD6 – 8	3.38	4.64	6.71	8.28	9.51	11.76	13.47	16.46

Available spray angles: 0° - 45° - 60° - 80°

C5 - CD3
AIR AND STEAM NOZZLES
BOQUILLAS PARA AIRE Y VAPOR

Characteristics
- C5 interchangeable spray tip of CD3 one piece nozzle to use with air or stream.
- C5 tip can be assembled with accessories.

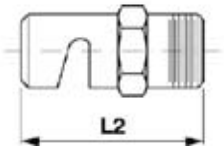
Caracteristicas
- *Boquillas con orificio intercambiable C5 o de una sola pieza CD3 para pulverizacón de aire o de vapor.*
- *El tipo C5 se puede montar con los accesorios.*

Material
Brass.

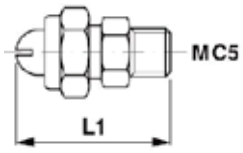
Dimensions (inches)

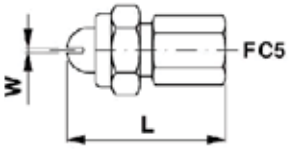
O	L	L1	L2 max
1/8"	-	-	1.22
1/4"	1.811	1.890	1.339
3/8"	1.811	1.890	1.77

CD3



C5





Type of nozzle		W (inches)	PRESSURE (psi)								psi	
			10	30	60	90	15	30	60	100	15	60
			AIR (gpm)				STEAM (lbs/h)				<°	<°
1/4 F – C5 – 1	1/4 M – C5 – 1	0.008	5.46	10.38	17.76	27.59	1.60	3.19	5.02	7.82	65	85
1/4 F – C5 – 2	1/4 M – C5 – 2	0.015	10.41	16.39	27.32	41.53	3.42	4.56	7.98	11.94	70	80
1/4 F – C5 – 3	1/4 M – C5 – 3	0.023	20.04	30.05	51.91	83.33	6.38	9.35	15.28	24.97	80	80
1/4 F – C5 – 4	1/4 M – C5 – 4	0.043	34.09	54.37	94.26	147.53	10.26	16.42	28.04	42.13	70	70
1/4 F – C5 – 5	1/4 M – C5 – 5	0.055	54.64	91.53	155.73	240.70	17.10	27.36	46.28	69.70	60	70
1/4 F – C5 – 6	1/4 M – C5 – 6	0.091	111.89	191.25	314.19	471.02	35.34	57.00	95.76	136.80	60	70
3/8 F – C5 – 1	3/8 M – C5 – 1	0.008	5.46	10.38	17.76	27.59	1.60	3.19	5.02	7.82	65	85
3/8 F – C5 – 2	3/8 M – C5 – 2	0.015	10.41	16.39	27.32	41.53	3.42	4.56	7.98	11.94	70	80
3/8 F – C5 – 3	3/8 M – C5 – 3	0.023	20.04	30.05	51.91	83.33	6.38	9.35	15.28	24.97	80	80
3/8 F – C5 – 4	3/8 M – C5 – 4	0.043	34.09	54.37	94.26	147.53	10.26	16.42	28.04	42.13	70	70
3/8 F – C5 – 5	3/8 M – C5 – 5	0.055	54.64	91.53	155.73	240.70	17.10	27.36	46.28	69.70	60	70
3/8 F – C5 – 6	3/8 M – C5 – 6	0.091	111.89	191.25	314.19	471.02	35.34	57.00	95.76	136.80	60	70

Type of nozzle	O1 (inches)	PRESSURE (psi)										psi	
		10	20	30	**40**	50	10	20	30	40	50	10	50
		AIR (gpm)					STEAM (lbs/h)					<°	<°
1/8-CD3-0.50	0.024	1.17	1.58	2.08	**2.55**	2.99	0.33	0.47	0.59	0.75	0.87	17	39
1/8-CD3-0.75	0.030	1.59	2.19	2.95	**3.57**	4.32	0.50	0.67	0.89	1.05	1.30	29	44
1/8-CD3-1.0	0.032	2.47	3.33	4.51	**5.34**	6.51	0.76	1.01	1.35	1.62	1.98	23	48
1/8-CD3-1.50	0.039	3.98	5.34	7.10	**8.74**	10.41	1.19	1.58	2.17	2.63	3.26	25	51
1/8-CD3-2.0	0.047	5.02	6.80	9.02	**10.93**	13.27	1.48	2.23	2.85	3.24	3.91	32	55
1/8-CD3-3	0.055	8.07	11.17	15.03	**18.70**	22.12	2.39	3.45	4.56	5.47	6.73	33	60
1/8-CD3-3.50	0.075	14.05	18.46	24.86	**30.36**	36.17	4.13	5.47	7.52	9.12	10.86	39	64
1/8-CD3-7.5	0.091	20.82	28.42	38.25	**46.14**	54.64	6.51	8.31	11.40	13.78	16.29	39	68
1/8-CD3-10	0.102	28.62	38.86	51.91	**61.93**	75.46	8.47	11.55	15.50	18.65	22.80	39	70
1/8-CD3-15	0.130	46.84	63.39	84.70	**102.00**	123.60	14.11	18.85	25.54	30.40	37.13	41	72
1/8-CD3-18	0.142	53.34	72.86	96.99	**117.78**	140.51	16.29	21.48	28.96	35.47	42.56	44	74
1/8-CD3-20	0.142	58.55	78.93	105.46	**126.28**	153.52	17.59	23.31	31.24	37.90	45.38	46	78
1/8-CD3-30	0.181	83.26	112.93	153.00	**184.57**	221.17	24.97	34.05	45.60	54.72	65.14	53	81
1/8-CD3-40	0.209	114.49	155.44	207.64	**255.00**	301.83	34.09	46.21	61.56	74.58	91.20	58	85

* Material on request.

SA
NOZZLES AIR BLOW
BOQUILLA SOPLADORA DE AIRE

Characteristics
- Nozzles "SA series" are single-body, of reduced dimensions and with hexagon in order to make easier the assembly - disassembly operations.
- Their particular geometry is studied to increase the impact force of air guarantee reduced lives of noise.
- Connection is BSPT male thread and on request NPT. Air spray has high impact, circular and produced by blow from 8 holes.
- High strength and low weight.
- Excellent level of silence even at high exercise pressure.

Applications
- Applications of this nozzle are many. The particular shape and reduced dimensions make it particularly suitable for use in areas where there is small space (such as internal pipes or where is necessary to have an action concentrate in a very precise point.

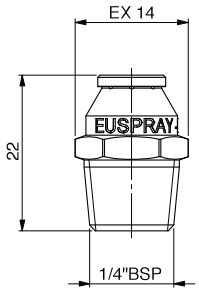
Field of use:
- Drying
- Cooling
- Clearing
- Dust removal
- Transport
- Creation of air curtains

Caracteristicas
- *Neustras boquillas "SERIE A" son de cuerpo único y de dimensión pequeña con un hexágon, con el fin de facilitar su montaje y desmontaje..*
- *Su particular geometría, está diseñada para aumentar la fuerza de impacto del aire, garantizando asi, bajo niveles de ruido.*
- *La conexión es con rosca macho BSPT y NPT bajo pedido. El pulverizado de aire es de alto impacto, de forma circular y se produce soplando a través de sus 8 agujeros.*
- *De alto resistencia y peso muy reducido.*
- *Muy silenciosa, incluso a altas presiones de trabajo.*

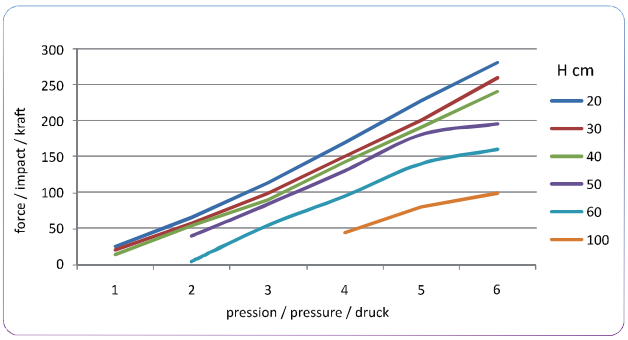
Aplicaciones
- *Las aplicaciones de esta boquilla son múltiples y diversas. Su forma especial y tamaño extremadamente pequeño la hacen especialmente indicada para su uso en áreas donde hay poco espacio (por ejemplo, en el interior de las tuberías o en lugares en dónde es necesario tener la pulverización muy concentrada en un punto determinado).*

Su campo de utilización puede ser:
- *Secado*
- *Enfriamiento*
- *Limpieza*
- *Eliminación de polvo*
- *Transporte*
- *Creación de cortinas de aire*

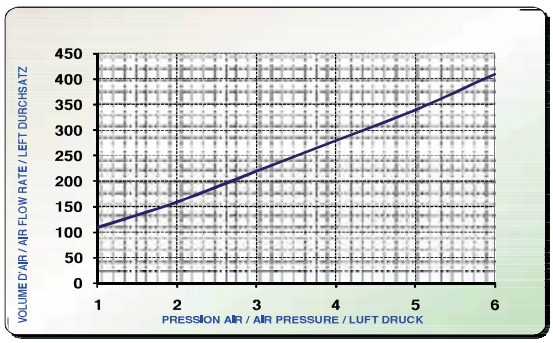
SA



IMPACT STRENGTH
FUERZA DE IMPACTO



CAPACITY NOZZLE 1MSA1 (8 holes of 1mm)
CAUDAL BOQUILLA 1MSA1 (8 orificios de 1 mm)



WJY
FLAT SPRAY NOZZLE
BOQUILLA DE SALIDA PLANA

Characteristics
- Their particular geometry is studied to increase the impact force of air guarantee reduced lives of noise.
- Connection is BSPT male thread and on request NPT.
- High strength and low weight.
- Excellent level of silence even at high exercise pressure.

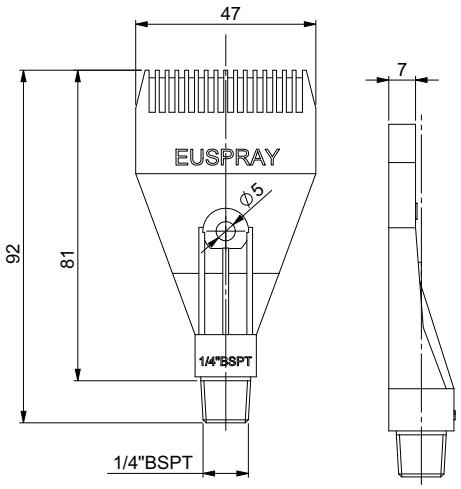
Field of use:
- Drying
- Cooling
- Clearing
- Dust removal

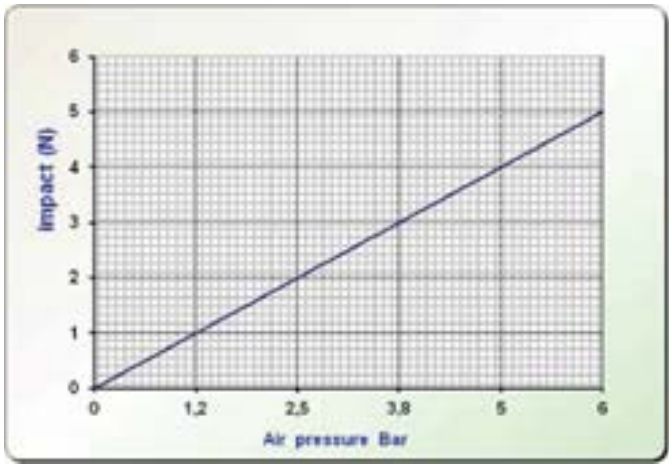
Caracteristicas
- *Su particular geometria, está diseñada para aumentar la fuerza de impacto del aire, garantizando así, bajos niveles de ruido.*
- *La conexión es con rosca macho BSPT y NPT bajo pedido.*
- *De alta resistencia y peso muy reducido.*
- *Muy silenciosa, incluso a altas presiones de trabajo.*

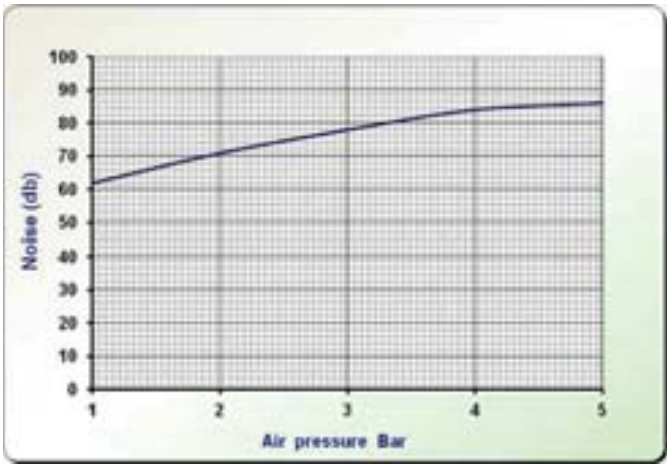
Su campo de utilización puede ser:
- *Secado*
- *Enfriamiento*
- *Limpieza*
- *Eliminación de polvo*

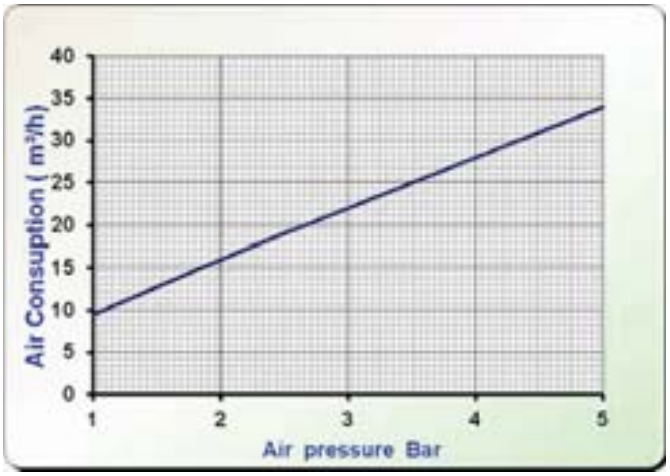
Material
SS304, SS316

WJY









ACCESSORIES
ACCESORIOS

RETAINERS + NOZZLE BODIES
TUERCA + CUERPO PORTABOQUILLAS

Characteristics
- Bodies and retaining caps are available in brass, 303SS, and 316SS.
- Thread: 1/8”-1/4”-3/8” M or F.

Caracteristicas
- *Tuerca 3/8” para todos los Orificios pulverizadores del catálogo.*
- *Se fabrica en latón, acero AISI 303 e AISI 316.*
- *Cuerpo de portaboquillas en latón o acero AISI 303 y AISI 316.*
- *Conexiones: 1/8”- 1/4”- 3/8” M o H.*

FILTERS FOR NOZZLES
FILTROS PARA BOQUILLAS

Filter
Filtro

Code	Filtration mesh
PFILTRO 5	50
PFILTRO A	100

Check valve filter
Filtro con antigoteo

Code	Filtration mesh
PFILTRO 5A	50
PFILTRO AA	100

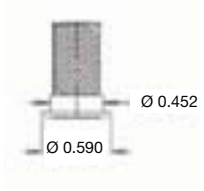
Filter
Filtro

Code	Filtration mesh
OFILTRO 5A	50
OFILTRO AA	100

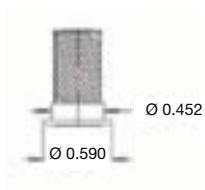
Cup filter
Filtro de cúpula

Code	Filtration mesh
PFILTRO CUP	50

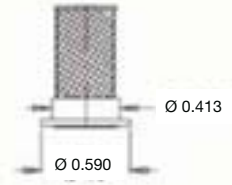
PFILTRO 5
PFILTRO A



PFILTRO 5A
PFILTRO AA



OFILTRO 5A
OFILTRO AA



PFILTRO CUP

QUICK FIT RETAINER
TUERCA PARA CONEXIÓN RÁPIDA

A) For model C1 - KC1
Flat jet
B) For model C1 - KC1
Flat and needle jet
BG - DH - CX

A

B

B

RETAINER CODE	GASKET CODE	RETAINER CODE	GASKET CODE
PGHIERAA03 rossa red roja	PGUARNIZIONEAV	PGHIERAG04 blu blue azul	PGUARNIZIONE AV
PGHIERAA04 blu blue azul	PGUARNIZIONEAV	PGHIERA H03 rossa red roja	PGUARNIZIONE AV
PGHIERAA01 nera black negra	PGUARNIZIONEAV	PGHIERA I03 rossa red roja	PGUARNIZIONE AV
PGHIERAB03 rossa red roja	PGUARNIZIONEAV	PGHIERA L01 rossa red roja	PGUARNIZIONE AV
PGHIERAD03 rossa red roja	PGUARNIZIONEAV	PGHIERA M03 nera black negra	PGUARNIZIONE AV
PGHIERAE03 rossa red roja	PGUARNIZIONEAV	PGHIERA N03 rossa red roja	PGUARNIZIONE AV
PGHIERAF03 rossa red roja	PGUARNIZIONEAV	20001OR	PGHIERA
PGHIERAG03 rossa red roja	PGUARNIZIONEAV		

PSNODO
SWIVEL NOZZLE HOLDERS
ARTICULACIONES PORTABOQUILLAS

ARTICULATED NOZZLE HOLDER
PORTABOQUILLAS ARTICULADO

Code	Thread
PSNOD1S	1/4" F (NPT)
PSNOD2S	3/8" F (NPT)

DOUBLE ARTICULATED NOZZLE HOLDER
PORTABOQUILLAS ARTICULADOS DOBLES

Code	Thread
PSNODD1FARSG	1/4" F (NPT)
PSNODD2FARSG	3/8" F (NPT)

PSNOD1S
PSNOD2S

PSNODD1FARSG
PSNODD2FARSG

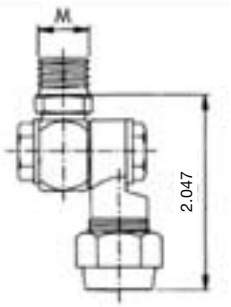
OSNODO
BRASS NOZZLE HOLDER SWIVELS
ARTICULACIONES
PORTABOQUILLAS DE LATÓN

Nozzle holder swivels with 3/8 threaded retainer
Portaboquillas articulados Con tuerca 3/8”

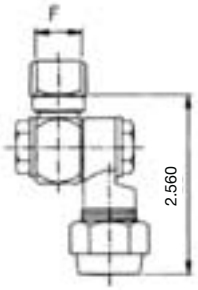
Length	Code	Thread
2.047	OSNODOS1M2M	1/4" M (NPT)

Length	Code	Thread
2.560	OSNODOS1F2M	1/4" F(NPT)

OSNODOS1M2M



OSNODOS1F2M



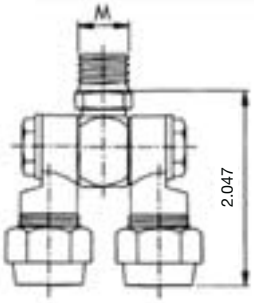
OSNODO
BRASS NOZZLE HOLDER SWIVELS
ARTICULACIONES
PORTABOQUILLAS DE LATÓN

Double nozzle holder swivels 3/8 threaded retainer
Portaboquillas articulados dobles Con tuerca 3/8”

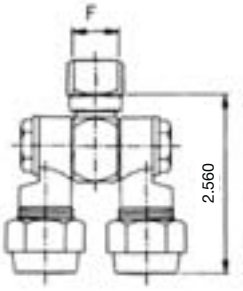
Length	Code	Thread
2.047	OSNODOD1M2M	1/4" M (NPT)

Length	Code	Thread
2.560	OSNODOD1F2M	1/4" F (NPT)

OSNODOD1M2M



OSNODOD1F2M



PFASC
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA

Composition
- Upper coupling sleeve
- Lower coupling sleeve
- N° 1 OR for tang
- Red colored retainer 3/8”
- N° 2 plated screws M4x20, on request in stainless steel
- N° 2 plated nuts M4X20, on request, in stainless steel

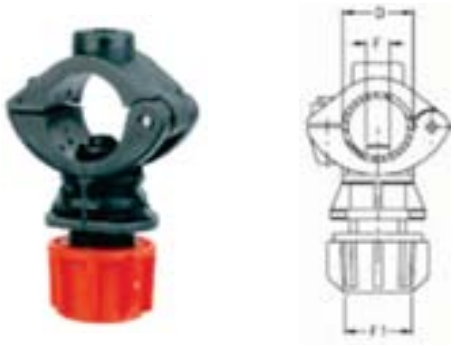
Composición
- *Horquilla superior*
- *Horquilla inferior*
- *1 OR para conector*
- *Tuerca roja 3/8”*
- *2 tornillos M4 x 20 galvanizados o, bajo pedido, en acero inox*
- *2 tornillos M4 galvanizadas o, bajo pedido, en acero inox*

D Pipe sizes	F Hole Diameter	Code
1/2"	0.276 (inch.)	PFASC3.7

PFASD
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA

Composition
- Nozzle holder
- Red colored retainer 3/8”
- N° 1 self tapping screw 3.8 x 16 SS303 (V00007005)
- N° 1 OR for tang (F)

Composición
- *Porta boquilla con perno*
- *Tuerca roja 3/8”*
- *1 tornillo auto-roscante 3.8 x 16 inox (V00007005)*
- *1 OR para conector (F)*



D Pipe sizes	F Hole Diameter	Code
1/2"	0.276 (inch.)	PFASD3.7
1/2"	0.393 (inch.)	PFASD3.10
3/4"	0.393 (inch.)	PFASD4.10
4/5 (20 mm)	0.276 (inch.)	PFASD20.7
4/5 (20 mm)	0.393 (inch.)	PFASD20.1
1"	0.393 (inch.)	PFASD5.10

PFASA
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA

Composition
- N°1 OR for tang (F)
- N°2 screws M4x20 plating
- N°2 nuts M4

Composición
- *N°1 OR para conectar (F)*
- *N°2 tornillos galvanizados*
- *N°2 tuercas M4*

D Pipe sizes	F Hole Diameter	Code
4/5 (20 mm)	4/5	* PFASA20.7

PFASB
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA

Composition
- Nozzle holder with
- N° 1 self tapping screw 3.8 x 16 SS303 (V00007005)
- N° 1 OR for tang (F)

Composición
- *Portaboquillas de horquilla completo*
- *1 tornillo auto-roscante 3.8 x 16 inox (V00007005)*
- *1 OR para conector (F)*

D Pipe sizes	F Hole Diameter	Code
1/2"	0.276 (inch.)	PFASB3.7
1/2"	0.393 (inch.)	PFASB3.10
3/4"	0.393 (inch.)	PFASB4.10
4/5 (20 mm)	0.393 (inch.)	PFASB20.1
1"	0.393 (inch.)	PFASB5.10

PFASDA
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA

Composition
- Nozzle holder with retainer
- Red colored retainer 3/8F
- N° 1 retainer
- N° 1 selftapping screw 3.8 x 16 SS303 (V00007005)
- N° 1 OR for tang (F)

Composición
- *Portaboquillas con perno dotado de Tuerca para membrana y membrana antigoteo*
- *Tuerca roja 3/8*
- *1 Tuerca para membrana*
- *1 tornillo auto-roscante 3.8 x 16 inox (V00007005)*
- *1 OR para conector (F)*

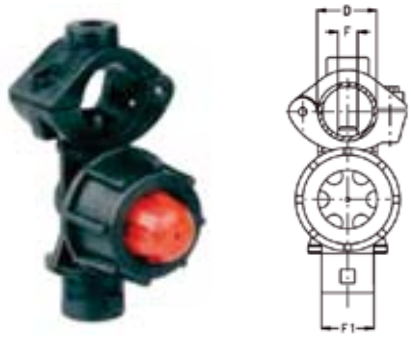
D Pipe sizes	F Hole Diameter	Code *EPDM*	Code *VITON*
1/2"	0.276 (inch.)	PFASDAE3.7	PFASDAV3.7
1/2"	0.393 (inch.)	PFASDAE3.10	PFASDAV3.10
3/4"	0.393 (inch.)	PFASDAE4.10	PFASDAV4.10
4/5 (20 mm)	0.276 (inch.)	PFASDAE20.7	PFASDAV20.7
4/5 (20 mm)	0.393 (inch.)	PFASDAE20.1	PFASDAV20.1
1"	0.393 (inch.)	PFASDAE5.10	

PFASBA
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA

Composition
- Nozzle holder clip
- Retainer and check valve membrane
- N° 1 self tapping screw 3.8 x 16 SS303 (V00007005)
- N° 1 OR for tang

Composición
- *Portaboquillas de clip*
- *Tuerca para membrana*
- *1 tornillo auto-roscante 3.8 x 16 inox (V00007005)*
- *1 OR para conector*

D Pipe sizes	F Hole Diameter	Code *EPDM*	Code *VITON*
1/2"	0.276 (inch.)	PFASBAE3.7	PFASBAV3.7
1/2"	0.393 (inch.)	PFASBAE3.10	PFASBAV3.10
3/4"	0.393 (inch.)	PFASBAE4.10	PFASBAV4.10
4/5 (20 mm)	0.276 (inch.)	PFASBAE20.7	PFASBAV20.7
4/5 (20 mm)	0.393 (inch.)	PFASBAE20.1	PFASBAV20.1
1"	0.393 (inch.)	PFASBAE5.10	



Refer to **Uni-Spray Catalogue** for plastic nozzle and accessories selection.

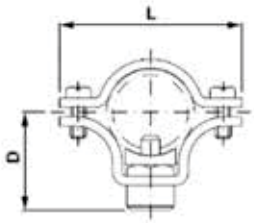
FAS
SPLIT EYELET CONNECTORS
UNIONES DE ABRAZADERA GALVANIZADA

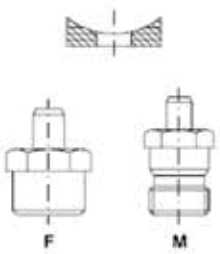
Characteristics

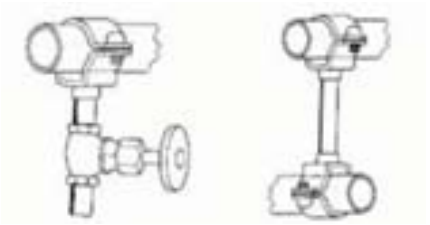
- Available in brass and stainless steel. See the table below for the complete list of pipe sizes and female thread sizes.

Características

- *En acero galvanizado con cuerpo de latón o acero inox*







TYPE	OUTLET CONNECTOR	ø TUBES	ø HOLE *(inches)*	DIMENSIONS *(inches)*	
				L	D
1/2 X 1/8	1/8 F				
1/2 X 1/4	1/4 F	Ø 1/2"			
1/2 X 3/8	3/8 F	Ø 0.787 + 0.866 Ø	0.276	1.968	1.181
1/2 X 11/16	11/16 M				
3/4 X 1/8	1/8 F				
3/4 X 1/4	1/4 F	3/4"			
3/4 X 3/8	3/8 M	Ø 0.984 + 1.063 Ø	0.276	1.968	1.299
3/4 X 11/16	11/16 M				
1 X 1/8	1/8 F				
1 X 1/4	1/4 F	1"			
1 X 3/8	3/8 M	Ø 1.181 + 1.378 Ø	0.276	2.362	1.181
1 X 1/2	11/16 M				
1 1/4 X 1/8	1/8 F				
1 1/4 X 1/4	1/4 F	1 1 /4"			
1 1/4 X 3/8	3/8	Ø 1.575 + 1.771 Ø	0.689	2.834	1.575
1 1/4 X 1/2	1/2 F				
1 1/2 X 1/8	1/8 F				
1 1/2 X 1/4	1/4 F	1 1 /2"			
1 1/2 X 3/8	3/8 F	Ø 1.771 + 2.008 Ø	0.689	3.386	1.693
1 1/2 X 1/2	1/2 F				
2 X 1/8	1/8 F				
2 X 1/4	1/4 F	2"			
2 X 3/8	3/8 F	Ø 2.126 + 2.362 Ø	0.689	3.780	1.771
2 X 1/2	1/2 F				

NB: Model - *Modelos* Ø 1/2 - 3/4 - 1 Pressure max - *Presión máx:* 15 max - Model - *Modelos* Ø 1 1/2- 1 1/2 - 2 Pressure max - *Presión máx*: 10 bar

SNODO
FLANGED ADJUSTABLE JOINT
ARTICULACIÓN ORIENTABLE LATÓN/INOXL

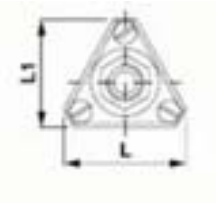
Characteristics

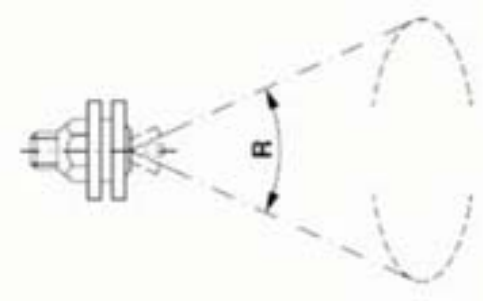
- Flanged adjustable joint, with a rotating female threaded ball. Once the threaded ball is oriented into the proper position, three screws in each corner of the flange are tightened to lock the rotating ball in place.
- This allows for easy spray orientation of the nozzle without having to rotate or disturb the pipe.
- Available in brass and stainless steel

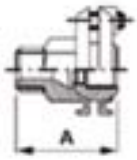
Características

- *Están formados por dos bridas de estampación, 3 tornillos de unión y una esfera interna que asegura la perfecta estanqueidad para todos los ángulos de rotación de las boquillas hasta los 10 bares. Construidos en latón o acero inox..*









ADJUSTABLE SWIVEL	INLET CONNECTOR	OUTLET CONNECTOR	R (Inches)	DIMENSIONS (Inches)		
				A	L	L1
* 1/8 X 1/8	1/8 M	1/8 F	1.5748	1.25984	1.49606	1.37795
* 1/4 X 1/8	1/4 M	1/8 F	1.5748	1.37795	1.49606	1.37795
* 1/4 X 1/4	1/4 M	1/4 F	1.9685	1.73228	1.9685	1.73228
* 3/8 X 1/4	3/8 M	1/4 F	1.9685	1.73228	1.9685	1.73228
* 3/4 X 3/8	3/8 M	3/8 F	1.5748	1.73228	1.9685	1.73228
* 1/2 X 3/8	1/2 M	3/8 F	1.77165	1.73228	1.9685	1.73228
* 1/2 X 1/2	1/2 M	1/2 F	1.9685	2.51969	2.91339	2.51969
* 3/4 X 1/2	3/4 M	1/2 F	1.5748	2.51969	2.91339	2.51969
* 3/4 X 3/4	3/4 M	3/4 F	1.5748	2.51969	2.91339	2.51969
* 1 X 1/2	1 M	1/2 F	1.5748	2.51969	2.91339	2.51969
* 1 X 3/4	1 M	3/4 F	1.5748	2.51969	2.91339	2.51969

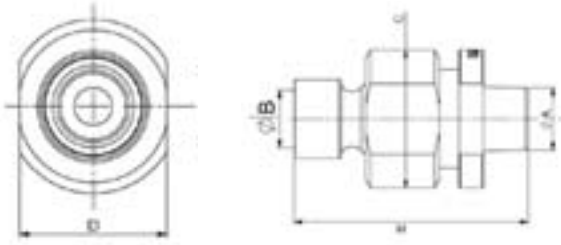
SNOAPE
COMPACT ADJUSTABLE JOINT
ARTICULACIÓN ORIENTABLE ALTA PRESIÓN MOD. SNOAPE

Characteristics

- This compact design utilizes a threaded nut to lock the rotating female threaded nozzle ball in place. This allows for easy spray orientation of the nozzle without having to rotate or disturb the pipe.
- Maximum Operating Pressure for brass is 580 psi.
- Maximum Operating Pressure for stainless is 1750 psi
- Available connections: 1/8", 3/4", 3/8", 1/2".

Características

- *Su particular conformación permite dirigir la pulverización de las boquillas en la dirección deseada incluso en zonas con muy poco espacio a disposición.*
- *Aseguran la correcta posición del tubo de alimentación de las boquillas sin necesidad de efectuar conexiones aspeciales.*
- *La total ausencia de piezas intemas y el ancho conducto permiten la correcta pulverización del liquído.*
- *Maxima presión de trabajo: Aisi= 120 bar Latón= 40 bar.*
- *Disponible con conexión de: 1/8", 3/4", 3/8", 1/2".*

DIMENSIONS				
A	B	H	C	D
1/8"M	1/8"F	1.811	1.102	0.945
1/4"M	1/4"F	1.850	1.102	24
3/8"M	3/8"F	2.086	1.102	1.023
1/2"M	1/2"F	2.559	1.338	1.260

PRESSURIZED VESSEL WITH WHEELS
DEPÓSITO PRESURIZADO TRANSPORTABLE CON RUEDAS

Characteristics

- These portable pressure vessels are capable of dispensing both liquid and foam.
- All vessels are designed to the highest industry standards and are PE and CED certified.
- They come equipped with a regulating valve and a quick connection for wand extensions.
- Maximum operating pressure is 85 psi.
- These vessels are available in capacity sizes of 24,50, and 100 liters.
- Material: Painted or polished stainless steel.

Características

- *Los depósitos trasportables para la pulverización de líquido o espuma, cumplen con las normativas PED y CE, están disponibles en acero pintado o acero inoxidable en diferentes tamaños.*
- *Todos los depósito tienen una válvula de regulación de presión y ataque rapido para los accesorios*
- *La presión de operación máxima es de 6 bares.*
- *Están disponibles en capacidades de 6.34,13.20 y 26.42 gallon.*

STAINLESS STEEL

PAINTED STEEL

USE	PAINTED STEEL	STAINLESS STEEL	CAPACITY		WEIGHT KG
			LT	GAL	
SPRAY	F TANK 24 S	I TANK 24 S	24	6.34	13
	F TANK 50 S	I TANK 50 S	50	13.2	24
	F TANK 100 S	I TANK 100 S	100	26.4	38
FOAM	F TANK 24 S	I TANK 24 F	24	6.34	13
	F TANK 50 S	I TANK 50 F	50	13.2	24
	F TANK 100 S	I TANK 100 F	100	26.4	38

PRESSURE VESSEL
DEPÓSITO PRESURIZADO

Characteristics

There are two types:

- Capacity: 4.75 gallons
  Height: 22.24 inches
  Diameter: 9.13 inches
  Weight: 9.7 pounds
- Capacity 2.37 gallons
  Height: 13.43 inches
  Diameter: 9.13 inches
  Weight: 8.0 pounds

Características

Existen dos formatos:

- *CAPACIDAD 14.75 gallon*
  altura 22.244 inches
  diámetro 9.134 inches
  peso 4.4 kg
- *CAPACIDAD 2.37 gallon*
  altura 13.425 inches
  diámetro 9.134 inches
  peso 3.65 kg

Materials

- The pressure tank and the valves are constructed in stainless steel. The top cover, handles, and bottom cover are made of a durable, non-oxidizing, rubber.

Materiales

- *Los depósitos y las válvulas son de acero inoxidable y la tapa con asa es de goma. No hay partes oxidables.*

PRODUCT DESCRIPTION	ARTICLE CODE
Pressure tank 18 liters	SERBJ181I
Quick gas thread	SERBJARGI
Quick product thread	SERBJARPI
Kit for pressure tank	SERBKITATI

TANK WASHING HEADS

Amerispray

Uni-Spray Systems Inc.

Global Partnership

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INDICE

TANK WASHING

Effective cleaning and rinse systems are critical in protecting the quality of liquids being stored. For almost any type of vessel or application, Amerispray should have a product that can help you to accomplish this goal. Additionally, the high cost of effluent disposal necessitates using the minimal amount of liquid necessary to accomplish the job. Our broad range of tank wash nozzles, which include both fixed heads and rotating heads, should be able provide the ideal solution for your specific application.

1) EVALUATE THE LIQUID BEING SPRAYED

High viscosities and varying liquid temperatures can affect the quality of the spray pattern. Also, there may be suspended solids in your liquid stream that could potentially clog a tank wash nozzle. Please talk to your Amerispray representative about the best solution for your application. In some cases, we may be able to offer you a filter option to be utilized with your system.

2) THE RIGHT CHOICE

Cleaning applications can vary from industry to industry, therefore cleaning approaches must vary to fit those specific needs. Cleaning chemicals, water quality, liquid temperatures, and liquid pressure can all factor in to the equation. We will be happy to work with your chemical supplier to make sure that your application receives the best spray wash options available, in order to accomplish all of your cleaning and rinse goals.

3) WASH AND RINSE COVERAGE

The chart below can assist you in determining the nozzle type and size to use with varying vessel sizes. Keep in mind that there other factors that may be involved in the selection of the nozzle. Some applications require impact, while others may require a less impactful rinse

TÉCNICAS DE LAVADO DE TANQUES

La necesidad de asegurar una calidad constante del producto exige que cada fase de la producción, almacenaje y transporte sea realizado con sistemas de producción y tanques que estén siempre en perfectas condiciones de limpieza. Del mismo modo, la eliminación de efluentes precisa de un proceso de lavado en el cual es posible emplear una cantidad mínima de agua, y mantener a la vez un excelente nivel de limpieza. Estos dos factores han inspirado la creación de una amplia gama de productos para satisfacer todas las necesidades.

1) FILTRADO ADECUADO DE LIQUIDOS DE LAVADO

Los dispositivos de lavado de los tanques pueden tener pasajes internos de medidas pequeñas. Por consiguiente, con un proceso de lavado de circuito cerrado es necesario asegurarse de que ninguna partícula sólida que haya en el agua pueda obstruir dichos pasajes internos. En caso de que no se usara agua limpia, será necesario montar los filtros adecuados en el tubo con el fin de proteger los pasajes internos del cabezal de lavado. Nuestro catalogo de filtros ofrece una amplia gama de soluciones para cualquier necesidad.

2) LA CORRECTA ELECCIÓN PARA LA SOLUCIÓN DE SU LAVADO

El mejor resultado se obtiene solamente por el hecho de elegir el detergente adecuado, la temperatura y la presión adecuadas así como la duración adecuada del lavado

3) DISTANCIA DE LAVADO Y MOJADO

No es posible definir la distancia en la cual un dispositivo puede obtener el mejor resultado en el lavado de tanques sin tener en cuenta los siguientes parámetros: el tipo de producto que hay que eliminar, la presión del agua, la temperatura, la solución de lavado y el tipo de cabezal de lavado usado.

SERIES	PAGE	INSTALLING POSITION	WORKING PRES. (BAR)	MATERIALS					FLOWRATE (gpm@ 45 psi)							
				SS316L	SS303	PEEK	PTFE	PLASTIC	0-2,7	2,8-7,9	8-13,4	13,5-26,5	26,6-39,6	39,7-52,9	53-66	66,1-80
LSMOD7	6	free selection	10 - 150	■					■	■						
FLS	6	free selection	10 - 180	■	■		■	■		■	■	■	■			
MB9S	7	free selection	10 - 120	■			■	■	■	■	■	■	■	■		
7B	8	free selection	10 - 120	■	■				■	■	■	■	■	■	■	
LSE	10	free selection	10 - 90	■							■					
LSD-thread	11	free selection	10 - 90	■								■	■			
LSD-clip/weld	12	free selection	10 - 90	■								■	■			
LSMOD3L	13	free selection	10 - 90	■											■	■
LSMOD1	14	free selection	10 - 90	■				■	■	■						
M6LSD	15	free selection	10 - 60	■		■			■							
LSN	16	free selection	10 - 90	■		■				■	■					
LSB	17	free selection	10 - 90	■						■						
LSMOD3G	18	free selection	10 - 90	■								■				
LSMOD5B	19	free selection	10 - 90	■									■	■	■	■
FTESTA	20	free selection	10 - 90				■			■	■	■	■			
MLF	21	free selection	10 - 60	■					■							
ALSA	22	free selection	10 - 60	■									■			
ALSAPA1	23	free selection	10 - 60	■									■			
FLSW	24	vertical	10 - 90	■							■	■	■			

4) CONSTRUCTION MATERIALS

There are several factors involved in choosing the construction material of the nozzle. Corrosive chemicals, abrasives in the liquid, and specific industry standards may require you to use certain types of materials. Your Amerispray representative can work with you to determine which metal or plastic material would work best in your application.

5) COVERAGE

Coverage requirements may vary depending on the configuration of the tank and liquid depths. The below illustrations can help you determine your applications ideal coverage. Different nozzle styles have different coverage capabilities, the potential coverages are:360°
300° DOWN
270° UP
270° DOWN
240° DOWN
180° UP
180° DOWN

4) MATERIALES DE CONSTRUCCIÓN

El uso en la industria farmacéutica, química y agroalimentaria requiere que los cabezales de lavado estén hechos de materiales que ofrecen una gran resistencia a la corrosión y que permitan un saneamiento exhaustivo. Normalmente los cabezales de lavado están hechos de acero inoxidable austenítico (AISI 316L) o de materiales plásticos (teflón).

5) COBERTURA

Cobertura: es el sólido ángulo que cubren los jets de agua, tanto si están fijos o en movimiento, puede ser de:
360°
300° hacia abajo
270° hacia arriba
270° hacia abajo
240° hacia abajo
180° hacia arriba
180° hacia abajo

360°

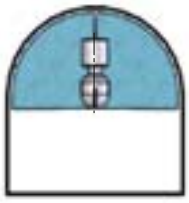
300° DOWN

270° DOWN

240° DOWN

180° DOWN

270° UP



180° UP

CONNECTION											COVERAGE						CERTIFICATION			
M6	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	Clip	Weld.	360°	180° UP	180° D	270° UP	270° D	240° D	3.1	ATEX	FDA	EC1935/2004
		■	■	■					■	■	■	■	■				■			
				■												■	■			
	■	■	■	■	■												■			
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					■						■			■	■		■			

ROTATING HEADS

The ideal liquid pressure for rotating heads may vary depending on the nozzle type and application. There is a point of diminishing returns, where an increase in pressure will actually decrease spray impact. Talk to your sales consultant to determine the ideal liquid pressure for each nozzle type and size.

BOQUILLAS ROTATIVAS

La velocidad de giro depende de la presión del líquido de lavado un giro excesivamente rápido causa la rotura del jet en muchas gotas y la pérdida de fuerza.

BEARING FREE ROTATIONAL HEAD

Due to precise machining and design, certain rotational heads can operate without ball bearings. This design is intended to negate the possibility of dirt and other contaminants from clogging the bearings and affecting the nozzles rotation.

EN UNA PISTA ESFÉRICA

La rotación del cabezal es posible incluso a presiones bajas (también alrededor de los 0,5 Bar). La rotación es mucho más fácil y permite un lavado más adecuado y una buena cobertura para tanques de grandes dimensiones. Posicionamiento únicamente vertical y una conexión situada en la parte superior. Hecho íntegramente de acero inoxidable AISI 316, están disponibles en diferentes tamaños y conexiones para el lavado de tanques de grandes y medianas dimensiones.

DOUBLE ROTATIONAL TRACKS

Certain tank wash nozzles utilize two rows of ball bearings. This allows these rotational nozzles to be mounted in any position and orientation.

EN DOS PISTAS ESFÉRICAS

Los cabezales de lavado equipados con dos hileras esféricas permiten la rotación en cualquier posición y orientación en que estén instalados. Esto podría suponer ser una gran ventaja ya que no necesariamente tienen que ser posicionados de forma vertical con una conexión de la parte superior del tanque. Una presión baja (incluso inferior a los 0,5 bar) es suficiente para posibilitar la rotación. Fabricadas en acero inoxidable pulido AISI 316, están disponibles en diferentes tamaños y conexiones para el lavado de tanques de dimensiones pequeñas, medianas y grandes. Su particular configuración interna y el grado de robustez superficial de sus componentes reduce el riesgo de formación de bacterias debido al estancamiento de pequeñas cantidades de agua.

FIXED HEADS
BOQUILLAS FIJAS

LSMOD7

Characteristics
This is a fixed nozzle head that utilizes a multi hole solid stream design. There are no moving parts, therefore there is no friction related wear on the nozzle. These nozzles are ideal for low impact rinse and clean-in-place (CIP) applications. The 316 stainless steel construction is compatible with a variety of chemicals and is ideal for food grade and pharmaceutical applications. Coverage options for this nozzle are illustrated below."

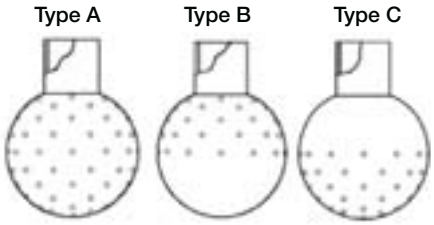
Caracteristicas
El sistema de lavado por medio de difusores es rápido, simple y efectivo: permite lavar con agua caliente y detergentes. Facilitan la automatización de programas de lavado y la ausencia de partes movibles evita el riesgo de rotura incluso después de largos periodos de uso.

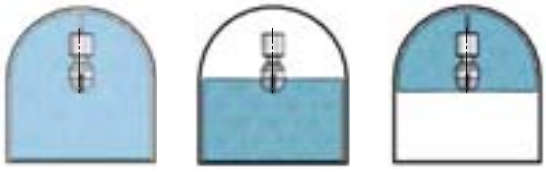
Materials:
- 316LSS

Materiales:
- *Aisi316L*

Connection:
- Female Threaded
- Sanitary clip

Conexiones:
- *Rosca hembra*
- *Clip*





360° 180° DOWN 180° UP

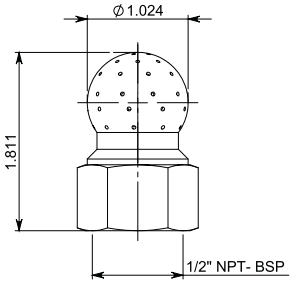
FLS

Characteristics
This is a fixed nozzle head that utilizes a multi hole solid stream design. The FLS is a more heavy duty product than the LSMOD7. It is manufactured from machined stainless steel bar stock, which allows it to be operated at higher liquid pressures. There are no moving parts, therefore there is no friction related wear on the nozzle. This nozzle is available in either 303 or 316 stainless steel and is compliant with most chemical and industry standards.

Caracteristicas
El modelo FLS está construido de una barra sólida con mayor grosor para garantizar el funcionamiento a alta presión.

Materials:
- 303SS and 316LSS
- Others on request

Materiales:
- *Aisi316L, Aisi303*
- *Otros bajo pedido*



240° DOWN

Mod.	Free Passage (mm)	Capacity (gpm) at different pessure (psi)				CONNECTION	COVERAGE	MAX. WET RADIUS (FT.)
		30	**45**	60	75			
A3FLS22	0.031	4.76	**5.81**	6.60	7.40	1/2" NPT	240º	9.84
A3FLS34	0.039	7.40	**8.98**	10.30	11.62	1/2" NPT	240º	10.50
A3FLS70	0.059	15.06	**18.49**	21.40	23.78	1/2" NPT	240º	11.48
A3FLS110	0.079	23.78	**29.06**	33.55	37.51	1/2" NPT	240º	13.12
A3FLS145	0.091	31.17	**38.31**	44.12	49.40	1/2" NPT	240º	14.76

MB9S

Characteristics

The MB9S is a one piece full cone nozzle that is capable of spray angles up to 180°. The spiral design utilizes a large liquid passage, making this nozzle difficult to clog. This design also allows for operation at lower than normal liquid pressures. The medium to large droplet sizes in the pattern make it ideal for small vessel cleaning that does not require more than 180° of coverage.

Caracteristicas

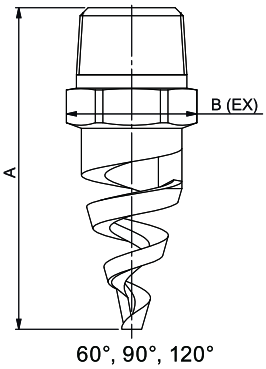
La nueva boquilla hidráulica MB9S se apllica un chorro de gran ángulo de cono vacio (hasta 180°), incluso con la presión de agua más bien baja (0,5 bar. y syperiores)
Las boquillas en espiral generan gotas rápidas con tamaño medio/grande que crean una buena fuerza de impacto, por lo que se pueden usar para lavar tanques pequeños.

Materials:

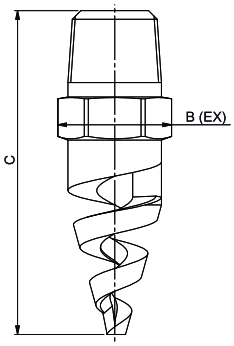
- Brass, 316LSS, Polypropylene, PTFE (Teflon), and PVC

Materiales:

- *Aisi316, PTFE, PP, PVC, Latón*



60°, 90°, 120°



150°, 170°

Mod.	Capacity (gpm) at different pessure (psi)							POSSIBLE <° 3 Bar	DIMENSIONS (in.)	
	7	10	20	**40**	60	80	100		C	A
									150° - 170°	60° - 90° - 120°
1/4 MB9 – 6 – S	0.58	0.70	0.99	**1.39**	1.71	1.97	2.20	60 - 90 - 120 - 150 - 170	2.13	1.89
1/4 MB9 – 8 – S	1.09	1.30	1.84	**2.61**	3.20	3.69	4.12	60 - 90 - 120 - 150 - 170	2.13	1.89
1/4 MB9 – 10 – S	1.67	2.00	2.83	**4.00**	4.90	5.66	6.33	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 6 – S	0.58	0.70	0.99	**1.39**	1.71	1.97	2.20	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 8 – S	1.09	1.30	1.84	**2.61**	3.20	3.69	4.12	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 10 – S	1.67	2.00	2.83	**4.00**	4.90	5.66	6.33	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 12 – S	2.51	3.00	4.24	**6.00**	7.35	8.49	9.49	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 14 – S	3.39	4.05	5.73	**8.11**	9.93	11.46	12.82	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 16 – S	4.43	5.29	7.49	**10.59**	12.97	14.97	16.74	60 - 90 - 120 - 150 - 170	2.13	1.89
3/8 MB9 – 20 – S	6.90	8.24	11.66	**16.49**	20.19	23.32	26.07	60 - 90 - 120 - 150 - 170	2.13	1.89
1/2 MB9 – 24 – S	10.07	12.03	17.01	**24.06**	29.47	34.03	38.05	60 - 90 - 120 - 150 - 170	3.15	2.56
1/2 MB9 – 28 – S	13.78	16.46	23.28	**32.93**	40.33	46.57	52.06	60 - 90 - 120 - 150 - 170	3.15	2.56
3/4 MB9 – 32 – S	17.60	21.02	29.73	**42.05**	51.50	59.46	66.48	60 - 90 - 120 - 150 - 170	3.46	2.76
1 MB9 – 40 – S	27.56	32.93	46.57	**65.86**	80.66	93.13	104.13	60 - 90 - 120 - 150 - 170	4.57	3.62
1 MB9 – 48 – S	39.75	47.49	67.16	**94.98**	116.33	134.33	150.18	60 - 90 - 120 - 150 - 170	4.57	3.62

7B

Characteristics

This tank wash head is composed of 7 full cone nozzle caps, which are easily removed for cleaning. By utilizing 7 different spray caps, the 7B can create a pattern that is made up of relatively small droplet sizes, while still providing large flow volumes. The **C** dimension in the adjoining illustration represents 65% of the nozzle flow. The **B** dimension represents the total coverage area.

Caracteristicas

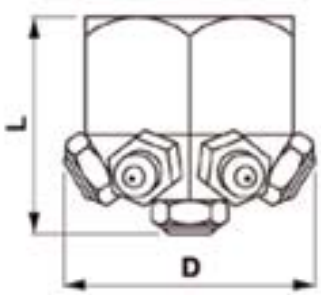
Boquilla múltiple constituida por un cuerpo con 7 cabezales de rociado que pueden desmontarse para su limpieza o recambio.
Permite obtener una gran capacidad con gotas relativamente pequeñas.
*El ciculo de diámetro **C** representa la zona con el 65% de la distribución.*
*El circulo de diámetro **B** representa la cobertura total.*

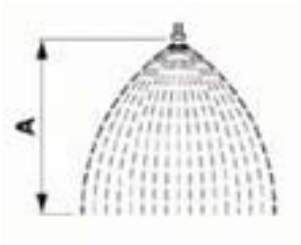
Materials:

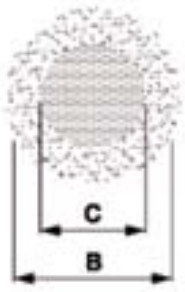
- *303SS and 316LSS*
- *Others on request*

Materiales:

- Aisi316L, Aisi303
- otros bajo pedido







Mod.	DIMENSION		Capacity (gpm) at different pessure (psi)							COVERAGE 40 PSI		
	D	L	15	30	45	60	75	100	150	A (ft.)	B (ft.)	C (ft.)
3/4 - 7B -1	1.89	1.69	0.83	1.14	1.37	1.59	1.72	2.03	2.38	8.20	8.20	4.92
3/4 - 7B - 3	1.89	1.69	2.40	3.33	4.09	4.62	5.18	6.08	7.13	8.20	10.50	6.89
3/4 - 7B - 5	1.89	1.81	3.96	5.73	6.87	7.79	8.69	9.51	11.89	8.20	11.81	7.87
1 - 7B - 10	2.20	2.68	8.32	11.28	13.68	15.85	17.17	20.34	23.78	8.20	11.48	8.20
1-1/2" - 7B - 25	4.13	3.27	20.53	28.00	34.34	38.83	42.53	49.93	59.17	8.20	17.06	10.83
1-1/2" - 7B - 25	4.13	3.35	26.29	36.19	44.38	50.19	55.48	64.46	75.55	8.20	17.06	10.83
1-1/2" - 7B - 25	4.13	3.35	32.76	44.38	55.48	63.14	68.16	81.37	94.57	8.20	17.06	10.83

ROTATING WASHING HEADS
BOQUILLAS ROTATIVAS

LSE

Characteristics

These tank wash nozzles are constructed out of 316L stainless steel. The rotating head is manufactured in such a way that it has no coupling or weld lines, which makes it a popular option for food, beverage, and pharmaceutical applications. The LSE is designed with double ball bearings, which allows for proper rotation in any mounting position. The spray coverage options are listed in the illustrations below.

Materials:

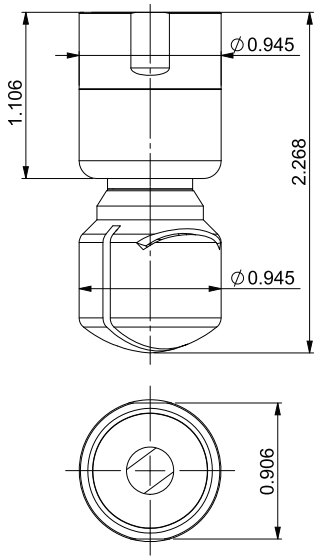
- 316L stainless steel
- Others on request

Caracteristicas

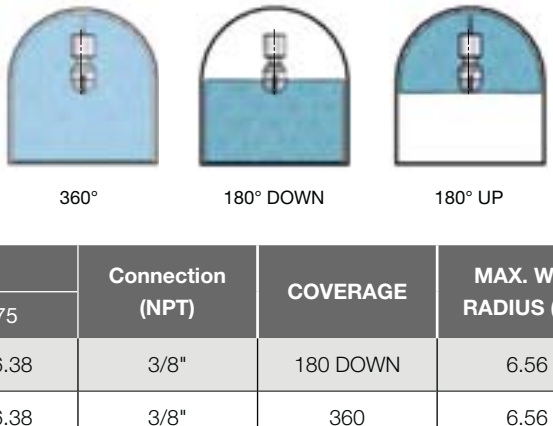
Las boquillas rotativas LSE están fabricadas en acero inoxidable AISI 316L y están montadas en una doble hilera de bolas, para tener una correcta rotación en cualquier posición de montaje. Todas las superficies internas y externas se mecanizan con alta precisión asegurando un acabado perfectamente liso, sin áreas en las que se puedan acumular los residuos del agua. La velocidad de rotación depende de la presión del fluido de lavado, que debe limitarse: una rotación demasiado rápida hace que el chorro se rompa en gotas y pierda fuerza de impacto.

Materiales:

- *Aisi316L*
- *otros bajo pedido*



Certifications: ATEX, FDA, EC1935/2004



360° 180° DOWN 180° UP

Mod.	Capacity (gpm) at different pressure (psi)					Connection (NPT)	COVERAGE	MAX. WET RADIUS (FT.)
	15	30	**45**	60	75			
A2LSE48D	7.40	10.30	**12.68**	14.79	16.38	3/8"	180 DOWN	6.56
A2LSE48T	7.40	10.30	**12.68**	14.79	16.38	3/8"	360	6.56
A2LSE48U	7.40	10.30	**12.68**	14.79	16.38	3/8"	180 UP	6.56
A3LSE48D	7.40	10.30	**12.68**	14.79	16.38	1/2"	180 DOWN	6.56
A3LSE48T	7.40	10.30	**12.68**	14.79	16.38	1/2"	360	6.56
A3LSE48U	7.40	10.30	**12.68**	14.79	16.38	1/2"	180 UP	6.56

LSD thread

Characteristics

These tank wash nozzles are constructed out of 316L stainless steel. The rotating head is manufactured in such a way that it has no coupling or weld lines, which makes it a popular option for food, beverage, and pharmaceutical applications. The LSE is designed with double ball bearings, which allows for proper rotation in any mounting position. The spray coverage options are listed in the illustrations below.

Caracteristicas

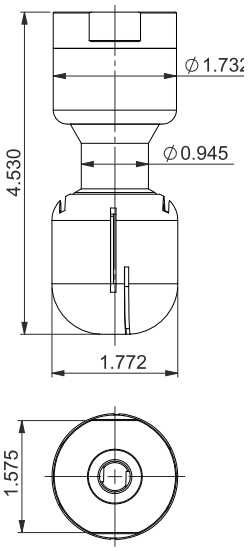
Las cabezas giratorias LSD están montadas en doble rodamiento de bolas,tener una rotación correcta en cualquier posición de montaje. La parte giratoria tiene la peculiaridad de no tener líneas de acoplamiento y soldaduras, especialmente no apreciar en el sector alimentario y farmacéutico. La velocidad de rotación depende de la presión del fluido de lavado, que debe limitarse: una rotación demasiado rápida en realidad causa la rotura del chorro en gotas y la pérdida de resistencia al impacto.

Materials:

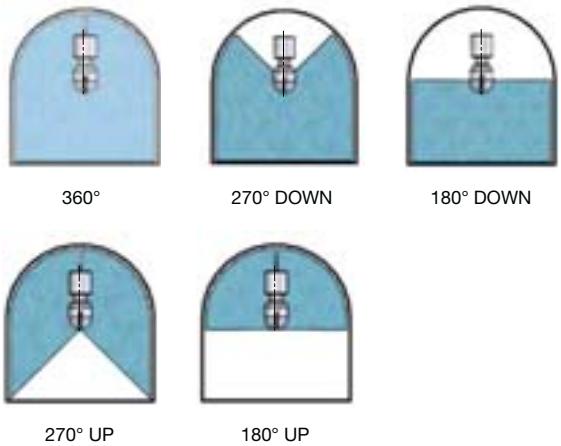
- 316L stainless steel

Materiales:

- *Aisi316L*



Certifications: ATEX, FDA, EC1935/2004



Mod.	Capacity (gpm) at different pessure (psi)			COVERAGE					CONNECTION (NPT)	MAX. WET RADIUS (FT.)
	30	45	60	360°	180° UP	180° DOWN	270° UP	270° DOWN		
A3LSD63	13.59	**16.64**	19.22	T	U	D	UW	DW	1/2"	9.51
A4LSD63	13.59	**16.64**	19.22	T	U	D	UW	DW	3/4"	9.51
A3LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	1/2"	10.50
A4LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	3/4"	10.50
A5LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	1"	10.50
A4LSD135	29.12	**35.66**	41.18	T	U	D	UW	DW	3/4"	11.48
A5LSD135	29.12	**35.66**	41.18	T	U	D	UW	DW	1"	11.48

LSD clip/weld

Characteristics

This nozzle is identical to the threaded LSD nozzle on the previous page, with the exception that it uses a sanitary clip connection, which meets ASME-BPE standards. The spray coverage options are listed in the illustrations below.

Caracteristicas

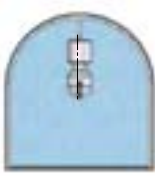
Tiene las mismas características que el modelo con rosca en la página anterior, pero con posibles conexiones de clips y soldaduras de acuerdo con los estándares europeos (ISO2037) y estadounidenses (BPE-EE. UU.).

Materials:

- 316L stainless steel
- Others on request

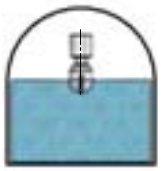
Materiales:

- *Aisi316L*
- *otros bajo pedido*



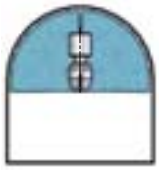
360°

270° DOWN



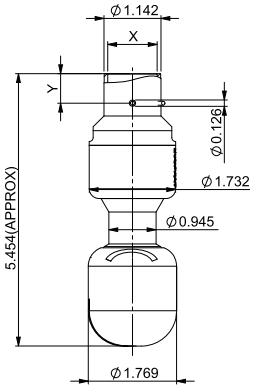
180° DOWN

270° UP

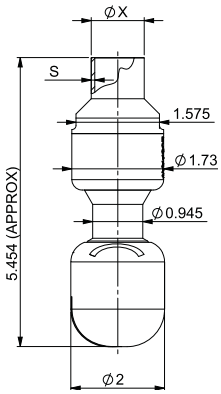


180° UP

CLIP



WELD



Certifications: ATEX, FDA, EC1935/2004

CLIP VERSIONS

Mod.	Capacity (gpm) at different pressure (psi)			COVERAGE					CONNECTION	NORM	X (in.)	Y (in.)	MAX. WET RADIUS (FT.)
	30	**45**	60	360°	180° UP	180° DOWN	270° UP	270° DOWN					
ADC25LSD63	13.59	**16.64**	19.22	T	U	D	UW	DW	1" (DN25)	ISO2037	1.00	0.59	9.51
AAC25LSD63	13.59	**16.64**	19.22	T	U	D	UW	DW	1" (DN25)	BPE (US)	1.01	0.59	9.51
ADC25LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	1" (DN25)	ISO2037	1.00	0.59	10.50
AAC25LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	1" (DN25)	BPE (US)	1.01	0.59	10.50
ADC25LSD135	29.12	**35.66**	41.18	T	U	D	UW	DW	1" (DN25)	ISO2037	1.00	0.59	11.48
AAC25LSD135	29.12	**35.66**	41.18	T	U	D	UW	DW	1" (DN25)	BPE (US)	1.01	0.59	11.48

WELDING VERSIONS

Mod.	Capacity (gpm) at different pressure (psi)			COVERAGE					CONNECTION	NORM	X (in.)	S (in.) Thick-ness	MAX. WET RADIUS (FT.)
	30	**45**	60	360°	180° UP	180° DOWN	270° UP	270° DOWN					
AWD25LSD63	13.59	**16.64**	19.22	T	U	D	UW	DW	1" (DN25)	ISO2037	0.98	0.05	9.51
AWA25LSD63	13.59	**16.64**	19.22	T	U	D	UW	DW	1" (DN25)	BPE (US)	1.00	0.06	9.51
AWD25LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	1" (DN25)	ISO2037	0.98	0.05	10.50
AWA25LSD90	19.41	**23.78**	27.45	T	U	D	UW	DW	1" (DN25)	BPE (US)	1.00	0.06	10.50
AWD25LSD135	29.12	**35.66**	41.18	T	U	D	UW	DW	1" (DN25)	ISO2037	0.98	0.05	11.48
AWA25LSD135	29.12	**35.66**	41.18	T	U	D	UW	DW	1" (DN25)	BPE (US)	1.00	0.06	11.48

LSMOD3L

Characteristics

The LSMOD3L rotating heads are built in 316L stainless steel. They are designed with double ball bearings, which allows for proper rotation in any mounting position. These are available in male or female connections, with NPT or BSP threads. The spray coverage options are listed in the illustrations below.

Caracteristicas

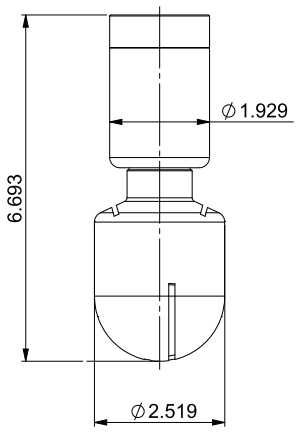
Las cabezas giratorias están construidos en acero inoxidable AISI 316, y se montan sobre cojinetes de bolas. Todas las superficies internas y externas están trabajadas con máquinas herramienta de alta precisión que garantizan un acabado liso y una excelente calidad de producto. Los cabezales se presentan con conexión de rosca hembra o macho BSP (GAS).

Materials:

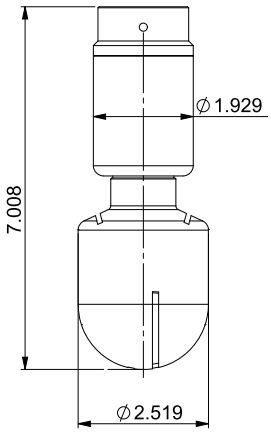
- 316L stainless steel
- Others on request

Materiales:

- Aisi316L
- otros bajo pedido



1"1/4 FEMALE



CLIP

360° 180° DOWN 180° UP

Mod.	Capacity (gpm) at different pessure (psi)			CONNECTION (NPT)		COVERAGE	MAX. WET RADIUS (FT.)
	15	30	45	Female (BSP)	Clip (in).		
ALSMOD3L.1	52.83	68.16	**79.25**	1-1/4"		360º	14.50
ALSMOD3L.2	35.21	51.94	**61.63**	1-1/4"		180º	10.80
ALSMOD3L.3	52.83	68.16	**79.25**		ø 1.52 -1.59	360º	14.50
ALSMOD3L.4	35.21	51.94	**61.63**		ø 1.52 -1.59	180º	10.80

LSMOD1

Characteristics

These small rotating nozzles, which are only 1" in diameter and 2" long, can be used with containers and tanks that have limited size openings. There are no bearings in this design, which alleviates the concern of dirt and other materials fouling the bearings and affecting the rotation of the head. The LSMOD1 is constructed with a 316LSS threaded body and the rotating spray ball is available in 316LSS or PEEK. The 1/4" male connection is available in either NPT and BSP thread. The spray coverage options are listed in the illustrations below.

Caracteristicas

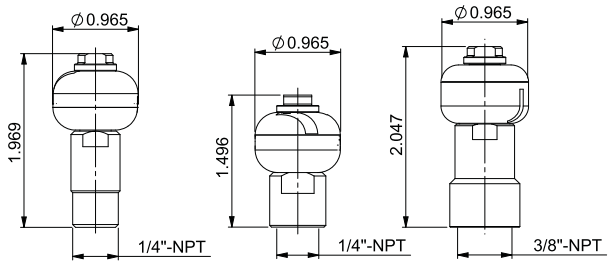
Dichos cabezales se hacen con un pequeño cabezal toroidal: puede pasar a través de una abertura de tan sólo 25 mm de diámetro. La conexión es de ¼ gas macho. Las dimensiones reducidas totales son de 50 mm de largo, 40 gramos de peso y 25 mm de diámetro.

Materials:

- 316L stainless steel, PEEK, or PTFE

Materiales:

- *Cuerpo: Aisi316L*



360° 270° DOWN 180° DOWN

270° UP 180° UP

Mod.	Capacity (gpm) at different pessure (psi)						CONNECTION (NPT)	COVERAGE	MAX. WET RADIUS (FT.)
	15	30	**45**	60	75	90			
LSMOD1.1	3.51	4.96	**6.08**	7.02	7.84	8.59	1/4" M	360º	3.28
LSMOD1.2	3.05	4.31	**5.28**	6.10	6.82	7.47	1/4" M	360º	3.28
LSMOD1.3	3.05	4.31	**5.28**	6.10	6.82	7.47	1/4" M	180º UP	3.28
LSMOD1.4	3.05	4.31	**5.28**	6.10	6.82	7.47	1/4" M	180º DOWN	3.28
LSMOD1.5	4.36	6.17	**7.56**	8.72	9.75	10.68	1/4" M	360º	3.94
LSMOD1.6	4.36	6.17	**7.56**	8.72	9.75	10.68	3/8" F	360º	3.94
LSMOD1.7	3.05	4.31	**5.28**	6.10	6.82	7.47	1/4" M	130º UP	3.28
LSMOD1.8	3.05	4.31	**5.28**	6.10	6.82	7.47	1/4" M	90º DOWN	2.30
LSMOD1F1.9	1.71	2.42	**2.96**	3.42	3.82	4.18	1/4" F	270º DOWN	3.28
LSMOD1F2.0	1.59	2.24	**2.75**	3.17	3.55	3.89	1/4" F	270º DOWN	3.28

M6LSD

MICRO

Characteristics

These miniaturized rotating spray heads were developed to wash small vials and bottles, they are capable of being used with openings as small as 0.4” in diameter. This model is only available in a metric thread, M6 x 1 (6mm). The body is constructed of 316LSS and the rotating head is available in either 316LSS or PEEK. There are no bearings in this design, which alleviates the concern of dirt and other materials fouling the bearings and affecting the rotation of the head.

Application:

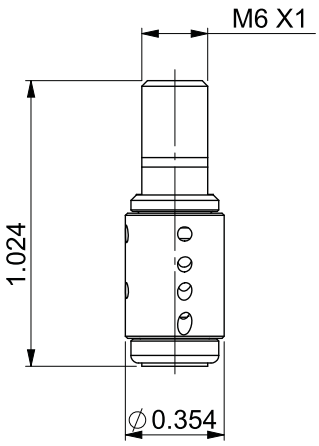
- Wash vials, small containers

Caracteristicas

Las cabezas de lavado M6LSD han sido desarrolladas para lavar filamentos, botellas pequeñas y pequeños compartimentos con 10 mm de apertura. La cabeza giratoria está hecha completamente de acero inoxidable AISI 316 o con el vástago en AISI 316 y la parte giratoria en PEEK. El acabado liso y de alta calidad garantiza una rotación perfecta incluso sin rodamientos de bolas. El cabezal está disponible con conexión roscada macho M6.

Aplicación:

- *Lavado de viales, contenedores pequeños*



270° DOWN

Mod.	MATERIAL		Capacity (gpm) at different pessure (psi)					CONNECTION	COVERAGE	MAX. WET RADIUS (FT.)
	BODY	ROTOR	15	30	**45**	60	75			
AM6LSD9	316LSS	316LSS	1.06	1.48	**1.82**	2.11	2.59	M6	270º	1.31
APKM6LSD9	316LSS	PEEK	1.06	1.48	**1.82**	2.11	2.59	M6	270º	1.31

LSN

Characteristics

There are no bearings in this design, which alleviates the concern of dirt and other materials fouling the bearings and affecting the rotation of the head. The LSN is constructed with a 316LSS threaded body and the rotating spray head is made of PEEK. The standard 3/8" female connection is available in either NPT and BSP thread. Other connections may be available upon request.

Caracteristicas

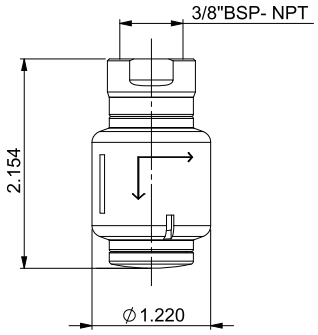
Las cabezas giratorias LSN tienen cuerpo de acero inoxidable 316L y rotor PEEK. El acabado liso y de alta calidad garantiza una rotación perfecta incluso sin rodamientos de bolas.
La conexión estándar del cabezal es rosca hembra de 3/8" bajo pedido otras conexiones.

Materials:

- Body: 316LSS
- Rotor: PEEK

Materiales:

- *Cuerpo: Aisi316L*
- *Rotor: PEEK*



360°

Mod.	Capacity (gpm) at different pessure (psi)					Connection (NPT)	Coverage	MAX. WET RADIUS (FT.)
	15	30	**45**	60	75			
APK2FLSN14	2.14	3.02	**3.70**	4.27	4.77	3/8"	360°	1.64
APK2FLSN18	2.75	3.88	**4.76**	5.49	6.14	3/8"	360°	1.97
APK2FLSN40	6.10	8.63	**10.57**	12.20	13.64	3/8"	360°	2.62
APK2FLSN50	7.63	10.78	**13.21**	15.25	17.05	3/8"	360°	3.28

LSB

Characteristics

LSB rotary heads are made of 316LSS construction and utilize Teflon bushings to reduce noise and friction. These are available with a 1/2" connection, with either NPT or BSP threads. The spray coverage options are listed in the illustrations below."

Caracteristicas

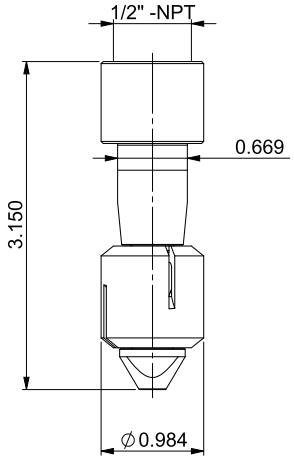
Las cabezas giratorias LSB están hechas de acero inoxidable AISI 316L con casquillos de teflón para reducir el ruido y la fricción. Todas las superficies internas y externas están mecanizadas con máquinas herramienta de alta precisión que garantizan un acabado uniforme y una excelente calidad del producto. La conexión estándar es de 1/2 BSP hembra.

Materials:

- 316L stainless steel
- Others on request

Materiales:

- *Aisi316L*
- *otros bajo pedido*



360° 180° DOWN 180° UP

Mod.	Capacity (gpm) at different pessure (psi)					CONNECTION (NPT)	COVERAGE	MAX. WET RADIUS (FT.)
	15	30	**45**	60	75			
A3LSB25T	3.81	5.39	**6.60**	7.63	8.53	1/2"	360º	1.97
A3LSB25D	3.81	5.39	**6.60**	7.63	8.53	1/2"	180º DOWN	1.97
A3LSB25U	3.81	5.39	**6.60**	7.63	8.53	1/2"	180º UP	1.97

LSMOD3G

Characteristics

LSMOD3G rotary heads are available in either 304SS or 316LSS and utilize Teflon bushings to reduce noise and friction. These are available in a 1/2” connection, with either NPT or BSP threads.

Caracteristicas

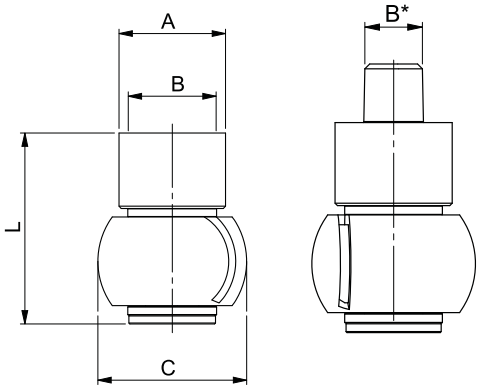
The ALSMOD3G washing heads are built in Aisi304 or 316L. They rotate on the PTFE bushes which guarantees perfect rotation with low noise levels. The head can be supplied with a clip-on or threaded connection.

Materials:

- 304 or 316L stainless steel

Materiales:

- *Aisi304 o Aisi316L*



360°

Mod.	Capacity (gpm) at different pessure (psi)					COVERAGE	Dimensions (in.)				MAX. WET RADIUS (FT.)
	1	2	**3**	4	5		**A**	**B**	**C**	**L**	
LSMOD3G.1	8.19	11.58	**14.18**	16.38	18.31	360º	4.92	0.94	1/2" BSP	1.34	1.69
LSMOD3G.2	8.19	11.58	**14.18**	16.38	18.31	360º	4.92	0.79	3/8" BSP	1.34	1.69
LSMOD3G.3	8.19	11.58	**14.18**	16.38	18.31	360º	4.92	0.79	1/4" BSP	1.34	2.13
LSMOD3G.4	8.19	11.58	**14.18**	16.38	18.31	360º	4.92	0.94	CLIP: diameter 0.531 - 0.866	1.34	1.69

LSMOD5B

Characteristics

The LSMOD5B is available in 304SS or POM. These nozzles come with two different stainless clips. The clip at the base of the nozzle is for connection to the pipe. The clip on the rotating head allows for easy removal of the head from the base, making it easier to clean and re-attach. These tank wash nozzles rotate on drag bearings, which ensure steady rotation and low noise volumes

Caracteristicas

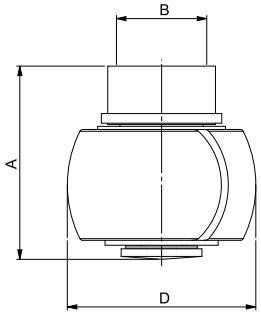
La boquilla rotativa está construida en acero inoxidable AISI 304 o POM. El cabezal está disponible con clips rápidos de ataque o soldadura. Los cabezales de lavado ALSMOD5 rotan sobre cojinetes de teflón que garantizan una excelente rotación y una baja emisión de ruido. Disponen de clips para facilitar el desmontaje y las simples operaciones de mantenimiento.

Materials:

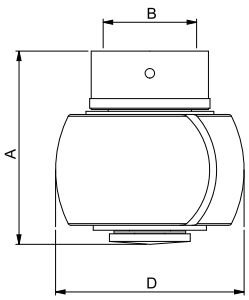
- 304SS or POM

Materiales:

- *Aisi304 o POM*



TO WELD / THREADED



CLIP

270° DOWN

Mod.	Capacity (gpm) at different pessure (psi)					CONNECTION	COVERAGE	Dimensions (in.)			MATERIAL	MAX. WET RADIUS (FT.)
	7	15	30	**45**	60			A	B	D		
LSMOD5B.1	17.17	22.98	26.68	**31.70**	37.25	WELD	360º	9.84	2.36	0.98	2.34	304SS
LSMOD5A.1	17.17	22.98	26.68	**31.70**	37.25	CLIP	360º	9.84	2.36	1.10	2.34	304SS
LSMOD5A.2	18.49	24.04	28.53	**33.02**	43.59	CLIP	360º	9.84	2.36	1.10	2.34	304SS
PLSMOD5A.3	31.70	44.83	60.76	**77.65**	84.54	THREAD	360º	13.12	3.54	1-1/4"	3.50	POM

FTESTA

Characteristics

This rotating head nozzle is constructed completely in PTFE (Teflon). There are no bearings in this design, which alleviates the concern of dirt and other materials fouling the bearings and affecting the rotation of the head. The solid stream design of the spray allows for greater impact on the vessels surface. The connection is 1/2" female, with either NPT or BSP threads. The spray coverage options are listed in the illustrations below.

Materials:

- PTFE (Teflon)

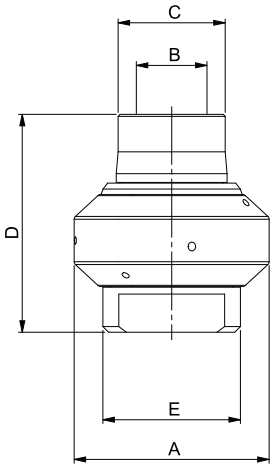
Caracteristicas

Boquilla rotativa "TF" está fabricada en teflón en su totalidad. El fino acabado y la excelente calidad aseguran una perfecta rotación incluso sin cojinetes de bolas. La conexión estándar es de rosca ½. El flujo de lavado del cabezal giratorio genera el movimiento de rotación gracias a la fuerza de reacción de los jets de aguja con una gran fuerza de impacto. La velocidad de rotación depende de la presión del líquido de lavado.

Materiales:

- *PTFE (Teflon)*

3F



42

120

360° 270° DOWN 270° UP

Mod.	Capacity (gpm) at different pessure (psi)					COVERAGE	Dimensions (in.)					MAX. WET RADIUS (FT.)
	15	30	**45**	60	75		A	B	C	D	E	
TF3FTESTA3F	3.81	5.39	**6.60**	7.63	8.53	360º	6.56	2.01	1/2" BSP	1.14	2.24	1.46
TF3FTESTA4FSUP	3.81	5.39	**6.60**	7.63	8.53	270º UP	6.56	2.01	1/2" BSP	1.14	2.24	1.46
TF3FTESTA4FINF	3.81	5.39	**6.60**	7.63	8.53	270º DOWN	6.56	2.01	1/2" BSP	1.14	2.24	1.46
TF3FTESTAA42	3.81	5.39	**6.60**	7.63	8.53	360º	6.56	1.65	1/2" BSP	1.14	2.24	1.30
TF4FTESTA120	18.30	25.88	**31.70**	36.60	40.93	360º	9.84	2.28	3/4" BSP	1.42	2.36	1.65

MLF

Characteristics

This 316SSL nozzle was created to clean large industrial style ovens, which are utilized in a variety of manufacturing processes. The design creates a uniform flat spray pattern at medium to low liquid pressures. These nozzles provide a relatively high impact spray, along with a slow nozzle rotation. Additionally, they are efficient in their water consumption.

There are no sealing components made of plastic or elastomers, therefore it can operate in high temperature conditions. Flow rates for this system will vary based on the nozzle tip sizes being used. The standard spray tip options are listed in the table below, other flows and spray angles may be available upon request.

Caracteristicas

La nueva forma de la boquilla giratoria para lavar hornos ha sido cuidadosamente diseñado para obtener un chorro particularmente uniforme y con una distribución óptima de las gotas a presión media-baja. La dirección de los jets de la boquilla instalados, está orientada a tener una cubierta prácticamente total, buen impacto, bajo consumo de agua y velocidad reducida rotación.
No hay componentes de sellado hechos de plástico o elastómeros, de modo que la boquilla permanezca a altas temperaturas y no afecte la operación de ninguna manera. Las velocidades de flujo del sistema giratorio para hornos de limpieza están vinculadas con el tipo de boquillas finales instalados en los extremos, a ser identificado, dependiendo del tamaño del horno, a partir de las características del sistema de alimentación de esta boquilla y de los requisitos de lavado real.

Application:

- Oven washing

Aplicación:

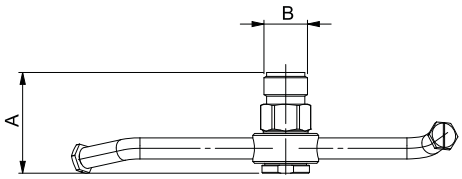
- *Lavado de hornos*

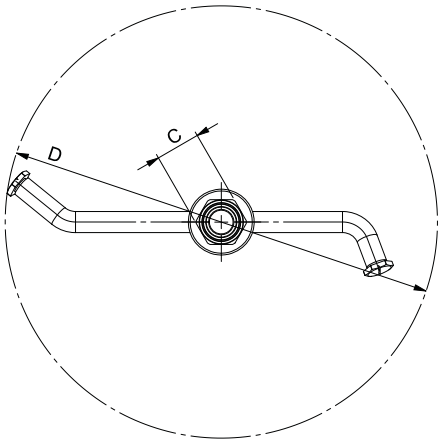
Materials:

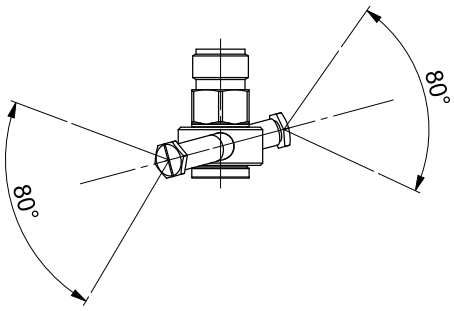
- 316L stainless steel
- Others on request

Materiales:

- *Aisi316L*
- *otros bajo pedido*







Mod.	Capacity (gpm) at different pessure (psi)					COVERAGE	Dimensions (in.)			
	1	2	**3**	4	5		A	B	C	D
A2MLF38	0.58	0.82	**1.00**	1.16	1.29	110°	1.57	3/8" M NPT	0.67	6.50
A2MLF48	0.74	1.06	**1.27**	1.48	1.64	110°	1.57	3/8" M NPT	0.67	6.50
A2MLF62	0.95	1.35	**1.64**	1.90	2.11	110°	1.57	3/8" M NPT	0.67	6.50

ALSA (Tank Wash Nozzle)

RETRACTABLE

Characteristics

These retractable tank wash nozzles are made of 316SS, with the exception of the pneumatic actuator, which is available on request in 316SS. The ALSA is available in two different lengths, for both single wall and double wall tanks.

Caracteristicas

Este sistema de lavado está construido en acero inoxidable AISI 316L en su totalidad. El cabezal de lavado giratorio va montado sobre dos cojinetes de bolas. Todas las superficies internas y externas están fabricadas con máquinas de gran precisión que aseguran un fino acabado y una excelente calidad del producto. Los cabezales están disponibles en dos tipos diferentes de longitudes para tanques de pared única o con aislante. Conexiones tri-clamp.

Connection:

- Tri-clamp

Conexiones:

- *Lavado de tanques*

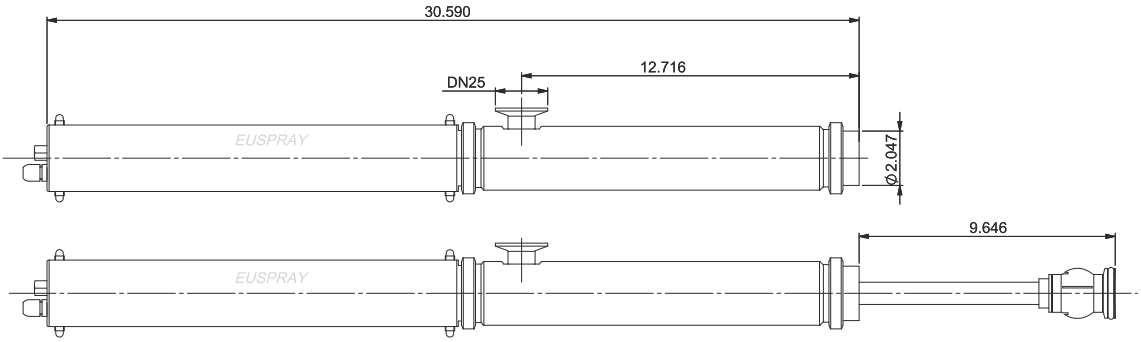
Materials:

- 316LSS

Materiales:

- *Aisi316L*

270° DOWN



Mod.	Capacity (gpm) at different pessure (psi)			COVERAGE	THREAD LIQUID	WALL THREAD	TANK WALL	MAX. WET RADIUS (FT.)
	1	2	3		Clamp DIN 32676	Clamp DIN 32676		
ALSA2550M1	21.66	27.21	**31.70**	270° DOWN	DN 25	DN 50	NOT ISOLATED	9.84
ALSA2550M1I	21.66	27.21	**31.70**	270° DOWN	DN 25	DN 50	ISOLTAED	9.84

NB: massima temperatura di lavoro 95° C. Minima temperatura di lavoro 0° C.
NB: max working temperature 95° C. Min working temperature 0° C.
NB: temperatura máxima de funcionamiento 95° C. Temperatura mínima de funcionamiento 0° C.

ALSAPA (Tank Wash Nozzle)

RETRACTABLE

Characteristics

These retractable tank wash nozzles are made of 316SS, with the exception of the pneumatic actuator, which is available on request in 316SS. The ALSA is available in two different lengths, for both single wall and double wall tanks.

Caracteristicas

Este sistema de lavado está construido en acero inoxidable AISI 316L. El cabezal de lavado giratorio va montado sobre dos cojinetes de bolas. Todas las superficies internas y externas están fabricadas con máquinas de gran precisión que aseguran un fino acabado y una excelente calidad del producto. Los cabezales están disponibles en dos tipos diferentes de longitudes para tanques de pared única o con aislante. Conexiones tri-clamp.

Connection:

- Tri-clamp

Conexiones:

- *Lavado de tanques*

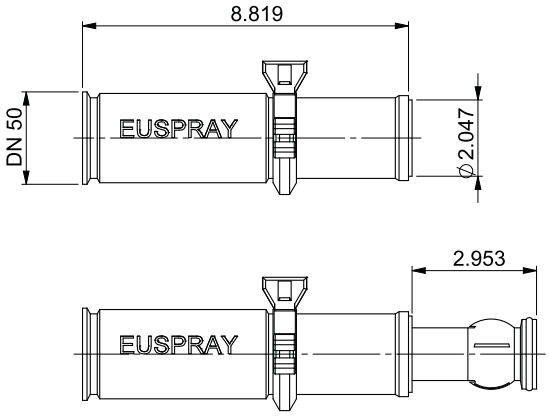
270° DOWN

Materials:

- 316LSS

Materials:

- *Aisi316L*



Mod.	Capacity (gpm) at different pessure (psi)			COVERAGE	THREAD LIQUID	WALL THREAD	MAX. WET RADIUS (FT.)
	15	30	45		Clamp DIN 32676	Welding	
ALSAPA1	18.49	24.30	**30.38**	270° DOWN	DN 50	Diameter 52	9.84

NB: massima temperatura di lavoro 95° C. Minima temperatura di lavoro 0° C.
NB: max working temperature 95° C. Min working temperature 0° C.
NB: Temperatura máxima de funcionamiento 95° C. Temperatura mínima de funcionamiento 0° C.

FLSW

Characteristics

The FLSW nozzle creates a high impact spray at relatively low liquid pressures. This nozzle is available in 316SS and PTFE (Teflon) and is ideal for a variety of tank wash applications. The table and illustrations below highlight the wide range of coverages and flows available in this model.

Caracteristicas

La serie FLSW utiliza baja presión para aplicaciones de limpieza y enjuague. Tiene una construcción sólida y se puede instalar en diferentes mercados como químico, farmacéutico o F & B. El rango es bastante amplio con diferentes capacidades y posibilidades de cobertura. Thanks to its design, it is equipped with a high impact force to ensure accurate washing.

Application:

- High Impact washing

Aplicación:

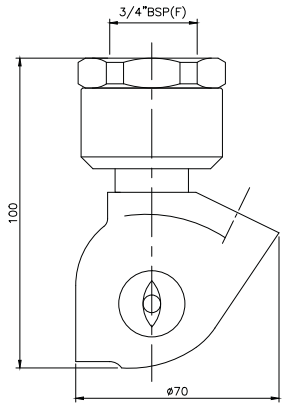
- *Lavado de alto impacto*

Materials:

- 316LSS

Materiales:

- *316LSS*




360°


270° DOWN


270° UP

Mod.	Capacity (gpm) at different pessure (psi)					Connection (NPT)	COVERAGE		
	15	30	**45**	60	75		**360°**	**270° UP**	**270° DOWN**
A4FLSW40	6.34	8.45	**10.57**	12.20	13.47	3/4"	T	UW	DW
A4FLSW63	9.61	13.74	**16.64**	19.22	21.66	3/4"	T	UW	DW
A4FLSW88	13.42	19.02	**23.25**	26.84	30.01	3/4"	T	UW	DW
A4FLSW116	17.69	25.10	**30.64**	35.38	39.63	3/4"	T	UW	DW
A4FLSW171	26.08	36.98	**45.17**	52.16	58.12	3/4"	T	UW	DW

HYDRAULIC AND PNEUMATIC ATOMIZERS

Amerispray

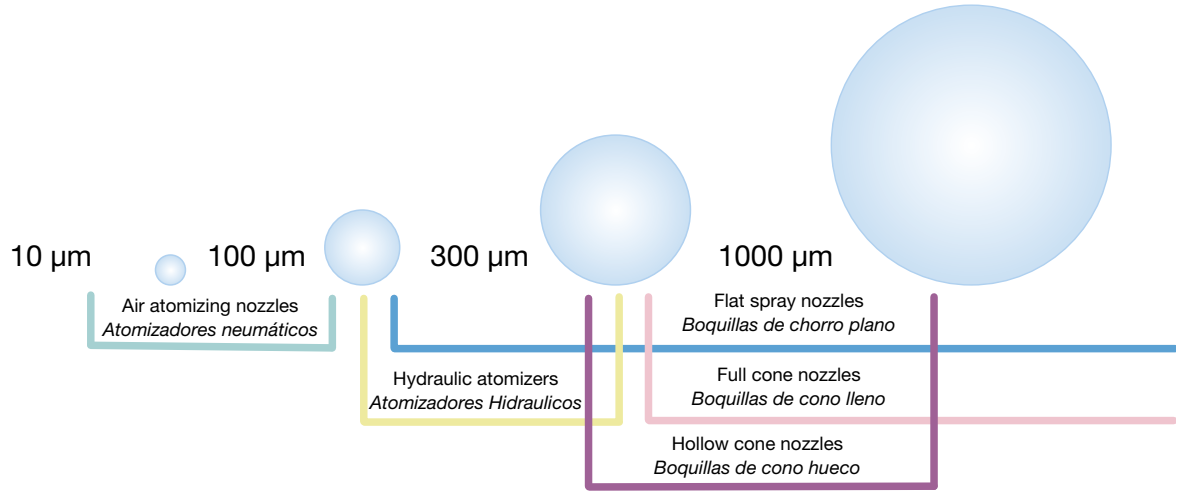
Uni-Spray Systems Inc.

Global Partnership

HYDRAULIC ATOMIZING
ATOMIZADORES HYDRAULICOS

Classification of spray measures.

Clasificación medida de pulverización



Droplet size (atomization)

The major factors affecting droplet size are liquid flow, liquid pressure, and the spray pattern. In hydraulic atomizing applications higher liquid pressure will result in smaller droplet sizes. In air atomizing nozzles the air atomizing pressure is the major factor in determining droplet size. The greater the air pressure, the smaller the droplet size. Typically, air atomizing and ultra-sonic spray nozzles will have the finest droplet sizes.

Diámetro de la gota (atomización)

Los principales factores que afectan al tamaño de las gotas son: el caudal, la presión y el tipo de pulverización. Generalmente un aumento en el caudal, en las mismas condiciones de presión, produce gotas de diámetro más grande. El aumento de la presión reduce el tamaño de las gotas, así como el aumento del ángulo de pulverización. Las gotas más finas se obtienen con pulverizadores neumáticos y las más grandes con el cono lleno. La tabla anterior indica para cada forma de pulverización, el diámetro medio de las gotas relativo a los valores de caudal mínimo y máximo a una presión de 3 bares.

CX - MX
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

Characteristics
These nozzles produce very fine atomized droplets using hydraulic pressure alone. The hydraulic atomizing nozzles are available in a one-piece 1/4" thread (NPT or BSPT). The three-piece models are available in 1/8" or 1/4" thread (NPT or BSPT), and include a threaded body, spray tip, and threaded cap. Strainers are optional, but are strongly recommended for all hydraulic atomizing nozzles.

Caracteristicas
Los atomizadores hidráulicos permiten una nebulización muy fina gracias únicamente a la presión hidráulica.
El orificio CX se puede montar en los accesorios.
La boquilla 1/4 MX es una sola pieza con la posibilidad de adaptar un filtro posterior.

Applications
- Humidifying
- Dust control
- Odor control
- Air and gas Scrubbing
- Lubrication
- Cooling

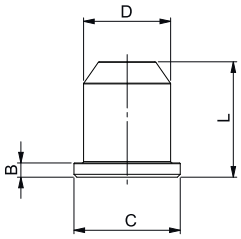
Aplicaciones
- *Humidificación.*
- *Control de polvo.*
- *Desodorización.*
- *Lavado de aire y gas.*
- *Lubrificación.*
- *Refrigeración.*

Material
Nickel plated brass, 303SS, and 316SS, others available upon request.

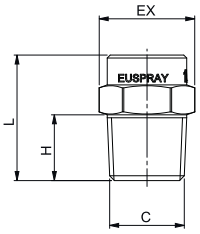
Dimensions (inches)

Connection	B	C	D	EX	L	H
1/4" MX	_	1/4	_	0.551	0.787	0.433
CX - Tip	0.079	0.591	0.484	_	0.650	_

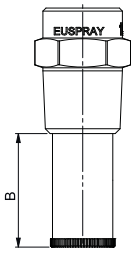
CX

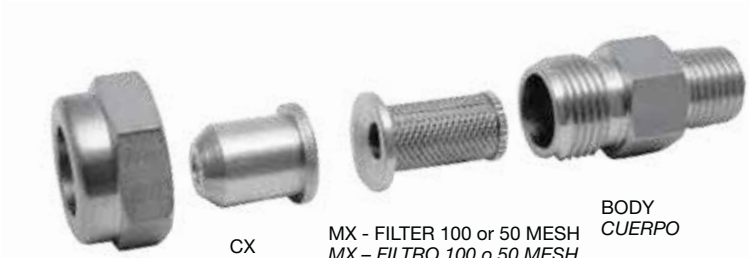


MX



MX - FILTER 100 or 50 MESH
MX - FILTERO 100 o 50 MESH





RETAINER
TUERCA

CX

MX - FILTER 100 or 50 MESH
MX – FILTRO 100 o 50 MESH

BODY
CUERPO

Flow Factor	Diam. Orifice (in.)	PRESSURE (psi)								<° 150 psi
		40	80	150	300	450	600	900	1200	
		CAPACITY (gallone per hour)								
0.7	0.014	0.72	1.01	1.39	**1.96**	2.40	2.77	3.40	3.92	50
1	0.016	0.89	1.26	1.73	**2.44**	2.99	3.46	4.23	4.89	65
1.5	0.020	1.48	2.09	2.87	**4.06**	4.97	5.74	7.03	8.11	70
2	0.024	1.97	2.79	3.82	**5.40**	6.61	7.64	9.35	10.80	70
3	0.035	2.99	4.23	5.79	**8.19**	10.04	11.59	14.19	16.39	70
4	0.043	3.96	5.60	7.68	**10.85**	13.29	15.35	18.80	21.71	75
6	0.043	5.98	8.46	11.59	**16.39**	20.07	23.18	28.38	32.78	75
8	0.059	7.95	11.24	15.39	**21.76**	26.65	30.77	37.69	43.52	80
10	0.063	10.01	14.15	19.38	**27.40**	33.56	38.75	47.46	54.81	80
12	0.075	11.77	16.65	22.80	**32.24**	39.49	45.59	55.84	64.48	80
14	0.075	14.13	19.98	27.36	**38.69**	47.38	54.71	67.00	77.37	80
18	0.075	17.85	25.25	34.58	**48.90**	59.89	69.15	84.69	97.79	80
22	0.075	21.58	30.52	41.80	**59.10**	72.39	83.58	102.37	118.21	80
26	0.087	25.51	36.07	49.40	**69.85**	85.55	98.78	120.98	139.70	80

MZ
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

Characteristics
The MZ model produces the smallest droplet size of any hydraulic atomizer in the market today.

Caracteristicas
Los atomizadores hidráulicos MZ permiten una nebulización muy fina gracias únicamente a la presión hidráulica.
La pulverización es en forma de cono semilleno, pulverización 55°-60°. (Con menor pulverización en el centro).
Atomizadores FZ tienen las mismas características, pero con una conexión diferente

Applications
- Snowmakers

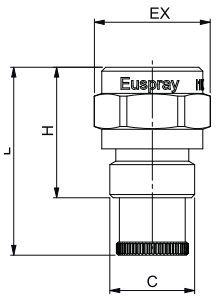
Aplicaciones
- *Humidificación*

Material
303SS, others available upon request.

Dimensions (inches)

C	EX	L	H
1/4"	0.630	1.161	0.787

MZ



Type of nozzle	Diam. Orifice (in.)	PRESSURE (psi) 150	300	450	600	750	900	1200	1500	<° 150 psi
		CAPACITY (gallone per hour)								
1/4" MZ0360	0.006	0.70	0.99	1.21	**1.40**	1.56	1.71	1.98	2.21	55
1/4" MZ0456	0.008	1.03	1.46	1.79	**2.07**	2.31	2.53	2.93	3.27	60
1/4" MZ0855	0.012	1.23	1.73	2.12	**2.45**	2.74	3.00	3.47	3.87	60

MN
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

Characteristics
The MN hydraulic atomizer is a specialized nozzle that is used primarily for snow making. The cone shaped spray tip is removable, providing easy access to the orifice.

Caracteristicas
Estos Atomizadores hidráulicos son específicos para los cañones de nieve.
La forma particular de la parte cónica de las boquillas permite una rápida eliminación del hielo. Esta operación es relativamente posible, incluso a baja presión (10 bares).
El máximo rendimiento de estas boquillas es a 50 bar.

Applications
- Snowmakers

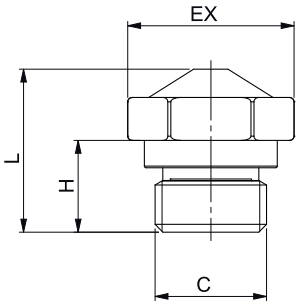
Aplicaciones
- *Cañones de nieve*

Material
Brass, SS430F, others on request

Dimensions (inches)

C	EX	L	H
1/4"	0.669	0.748	0.421

MN



Type of nozzle	PRESSURE (psi) 75	150	230	300	450	600	750	<° 150 psi
	CAPACITY (gallons per minute)							
1/4" - MN - 1.1	0.17	0.25	0.31	**0.35**	0.43	0.49	0.55	40
1/4" - MN - 1.4	0.22	0.31	0.38	**0.43**	0.53	0.61	0.68	40
1/4" - MN - 1.7	0.27	0.38	0.47	**0.53**	0.65	0.75	0.84	45
1/4" - MN - 3.1	0.47	0.66	0.82	**0.94**	1.15	1.33	1.49	45
1/4" - MN - 4.6	0.71	1.01	1.25	**1.42**	1.74	2.01	2.25	55
1/4" - MN - 6.7	1.05	1.48	1.83	**2.10**	2.57	2.96	3.31	55
1/4" - MN - 7.7	1.18	1.67	2.07	**2.36**	2.90	3.34	3.74	60
1/4" - MN - 18.7	1.34	1.90	2.35	**2.69**	3.29	3.80	4.25	60

A
HYDRAULIC ATOMIZERS
ATOMIZADORES HIDRAULICOS

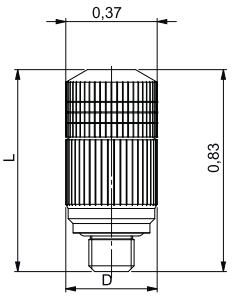
Characteristics
The A model, hydraulic nozzle has a compact design that is capable of creating a very fine atomized spray. It can produce droplets of less than 10 microns at 1,000 psi. Check valves are standard for the A model atomizers, but on request they can be purchased without the check valves.

Caracteristicas
El modelo A, boquilla hidráulica combina la ventaja de una atomización muy fina y dimensiones compactas. Puede producir gotitas de menos de 10 micras a 1.000 psi. Por lo general, suministramos el modelo con válvula de retención interna, a petición podemos suministrar sin ellos.

Applications
- Humidification
- Outdoor cooling
- Dust control
- Odor control

Aplicaciones
- *Humidificación*
- *Enfriamiento al aire libre*
- *Control de polvo*
- *Control de olores*

A



Code	Body Material	Head Material	Connection	Flow orifice	ø Min. Droplet	ø Max. Droplet	ø Medium Droplet
OIIA15R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0059 inch.	6.60 µm	26.45 µm	11.0 µm
OIIA20R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0078 inch.	6.69 µm	28.29 µm	11.0 µm
OIIA30R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0118 inch.	7.18 µm	32.21 µm	12.0 µm
OIIA40R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0157 inch.	7.42 µm	34.68 µm	12.0 µm
OIIA50R1	Brass Nickel Plated	SS AISI 303	10/24 UNC/2A	0.0196 inch.	7.49 µm	37.52 µm	12.0 µm
IIA15R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0059 inch.	6.60 µm	26.45 µm	11.0 µm
IIA20R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0078 inch.	6.69 µm	28.29 µm	11.0 µm
IIA30R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0118 inch.	7.18 µm	32.21 µm	12.0 µm
IIA40R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0157 inch.	7.42 µm	34.68 µm	12.0 µm
IIA50R1	SS AISI 303	SS AISI 303	10/24 UNC/2A	0.0196 inch.	7.49 µm	37.52 µm	12.0 µm

All nozzles were tested at 1,000 PSI using water at 70°F

Diameter	PRESSURE (psi)									
	100	200	300	**400**	500	600	700	800	900	1000
(mm)	CAPACITY (gallone per hour)									
0.15	_	_	_	**0.476**	0.523	0.571	0.618	0.666	0.713	0.745
0.20	_	_	0.571	**0.666**	0.745	0.808	0.872	0.935	0.999	1.046
0.30	_	0.761	0.935	**1.078**	1.205	1.316	1.427	1.522	1.617	1.696
0.40	0.729	0.737	1.252	**1.458**	1.633	1.775	1.918	2.061	2.187	2.298
0.50	0.919	1.300	1.585	**1.839**	2.045	2.251	2.425	2.599	2.758	2.901

O-ring Material: VITON
Anti Drip valve: Dia. 0,50 mm; SS Spring + VITON Ball
No Filter

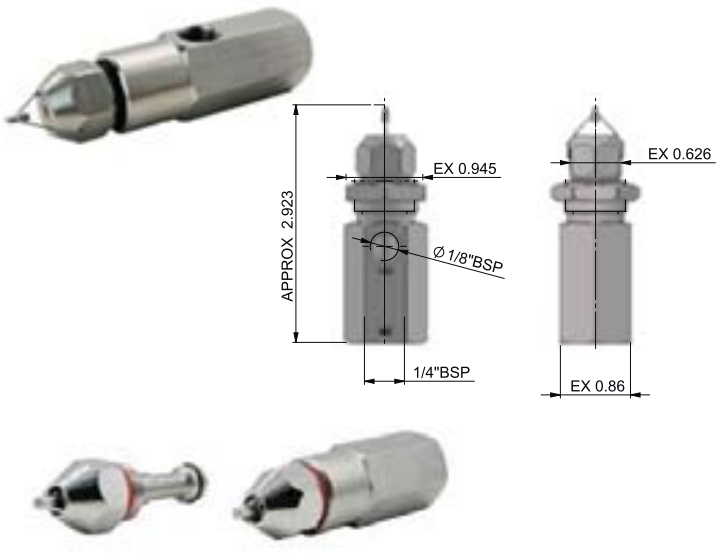
ULTRASONIC ATOMIZERS
ATOMIZADORES ULTRASONICOS

Characteristics
Ultra sonic nozzles create the smallest atomized droplets of any nozzle type. They are designed with a resonator that is positioned external to the orifice, which serves to further divide the droplets and create a uniform spray pattern. Amerispray offers 3 different models, as seen below.

Caracteristicas
Los atomizadores ultrasónicos garantizan los tamaños de gota más pequeños en el comercio. Gracias al resonador situado después del orificio, las gotas se dividen más para garantizar gotas más pequeñas y distribución uniforme. Podemos proporcionar 3 modelos de atomizadores y diferentes conexiones.

Applications
- Air Humidification
- Dust control
- Odor control

Aplicaciones
- *Humidificación del aire*
- *Control de polvo*
- *Control de olores*



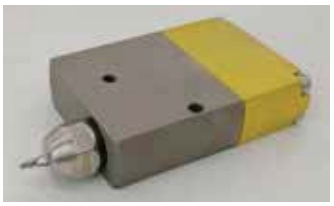
Standard Adaptor
Adaptador Estandar

Code adaptor
ILADATSN
Material: aisi 303SS
Connection: 1/4" npt female (air); 1/4" npt female (liquid)

Wall Mounting Adaptor
Adaptor de Pared

Code adaptor
ILADATAPSN
Material: aisi 303SS
Connection: 1/4" npt female (air); 1/4" npt female (liquid)

Anti-Drip Valve
Valvula Antigoteo



Code adaptor
ALSNADV
Material: aluminium
Connection: 1/4" npt female (air); 1/4" npt female (liquid)

Anti-Drip Valve
Valvula Antigoteo

Code adaptor
IOSNADV
Material: brass + Aisi 303SS
Connection: 1/4" npt female (air); 1/4" npt female (liquid)

CODE AND ANGLE	AIR PRESSURE (PSI)	LIQUID PRESSURE (PSI)							
		7,5		15		21		30	
		AIR. (SCFM)	H2O (GPH)	AIR (SCFM)	H2O (GPH)	AIR (SCFM)	H2O (GPH)	AIR (SCFM)	H2O (GPH)
ISN052W (Wide Angle)	60	4.08	3.04	4.04	4.36	3.96	5.54	4.04	6.34
	65	4.40	2.90	3.80	3.96	3.96	5.28	3.92	6.20
	75	4.64	2.77	3.92	3.70	3.96	4.88	3.96	5.87
	80	4.40	2.18	4.28	3.37	4.32	4.62	4.20	5.61
	90	4.72	1.85	4.64	3.30	4.64	4.09	4.64	5.02
ISN047M (Medium Angle)	60	7.16	3.96	7.16	7.66	7.20	10.16	7.24	11.62
	65	7.72	3.63	7.84	6.60	7.72	9.64	7.72	11.35
	75	8.32	3.04	8.40	5.94	8.36	9.24	8.40	10.96
	80	8.84	2.31	8.96	4.62	9.04	8.32	8.96	10.82
	90	9.44	1.58	9.60	4.09	9.44	7.92	9.56	10.43
ISN033N (Narrow Angle)	60	9.56	8.32	9.44	13.20	9.12	16.63	9.28	19.80
	65	10.52	8.45	10.52	12.94	10.48	16.10	10.44	19.01
	75	13.08	7.26	13.08	11.26	12.84	15.31	12.92	18.22
	80	14.32	6.60	14.40	10.56	14.32	14.78	14.28	17.95
	90	15.72	5.94	15.68	9.50	15.52	13.73	15.52	17.91

AIR ATOMIZING NOZZLES
ATOMIZADORES NEUMÁTICOS

Characteristics

Air atomizing nozzles mix a stream of air with a stream of liquid to create a finely atomized spray. There are a variety of body types for both the standard air atomizers and the automatic air atomizers. Each air atomizing nozzle utilizes a set-up, which consists of a particular combination of fluid and air caps. The large variety of set-ups available provide multiple options of spray patterns, spray angles, flow rates, and droplet sizes. The set-ups are listed on pages 17-24 and they can be utilized with any standard or automatic air atomizing body.

Materials: nickel plated brass, stainless steel AISI 303SS.

On request AISI 316SS - Lucite.

Thread connection (NPT and BSPT).

Air/Liquid Mixing

Internal Mix
The liquid and air streams combine inside the air cap to create an atomized spray. With internal mix set-ups the air pressure can be used along with the liquid pressure to vary flow. Internal mix set-ups are available in full cones, hollow cones, and flat sprays."

External Mix
The air stream collides with the liquid stream as it exits the fluid and air caps. External mixes are better for viscous liquids or liquids that have a tendency to harden. Also, in cases where there are small suspended solids, the external mix may be less likely to clog. These are available in flat spray and full cone patterns.

Caracteristicas

Los atomizadores neumáticos mezcla de aire comprimido (o otro Gas), junto con el líquido a pulverizar producen una pulverización de atomización fina. La combinación de pulverización se compone de una boquilla de líquido y una boquilla de aire que determinan los diferentes caudales y formas del pulverizado como se muestra en la siguiente tabla.
Cada conjunto de pulverización se puede montar en las siguientes atomizadores neumáticos o pistolas automáticas.

Material: latón nikelado, AISI 303.

Bajo pedido: AISI 316, Lucite

Conexión de rosca: BSPT

Tipo de mezcla

Mezcla Interna
En el interior de la boquilla se mezcla el líquido con el aire para producir una pulverización perfectamente atomizada.
La presión del aire y el líquido se relacionan y tienen una fuerte influencia en la formación de la pulverización, con posibles opciones para el caudal y tipo de spray que se forma:

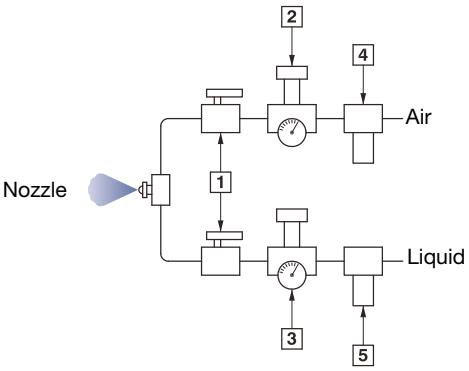
Mezcla externa
La mezcla del líquido en este caso se obtiene fuera de la boquilla del aire. Presión de aire y de líquido no están tan estrechamente vinculadas a las disposiciones internas de la mezcla.
Este tipo de boquilla es especialmente adecuado para aplicaciones con líquidos de alta viscosidad, con la densidad o la presencia de muy pequeñas partículas sólidas.

TYPE E
STANDARD AIR ATOMIZING BODY STYLES
ATOMIZADORES NEUMÁTICOS

(1) - Pressure - *Presión*

The liquid is fed to the nozzle under pressure

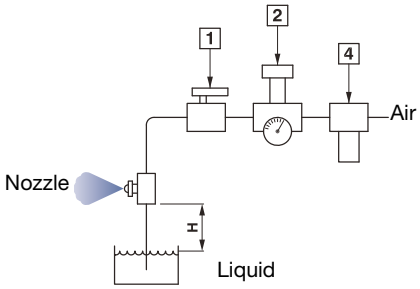
El líquido debe ser enviado a los atomizado bajo presión.



(2) - Siphon - *Por Sifón*

The venturi effect created by the nozzles helps to create suction, allowing the nozzle to siphon liquid.

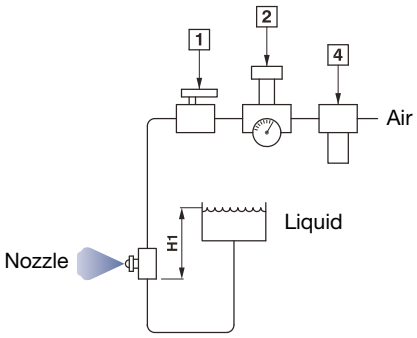
El líquido es alimentado por efecto venturi por la presión del aire, depende de la posición del depósito y de la boquilla



(3) - Gravity - *Por Gravedad*

The liquid is fed to the nozzle by gravity

El líquido llega por efecto de la caída y/o gravedad.



1 Ball valve
Válvula

2 Air regulator and gauge
Regulador de presión del aire con manómetro

3 Liquid regulator and gauge
Regulador de presión del líquido con manómetro

4 Air filter
Filtro del aire

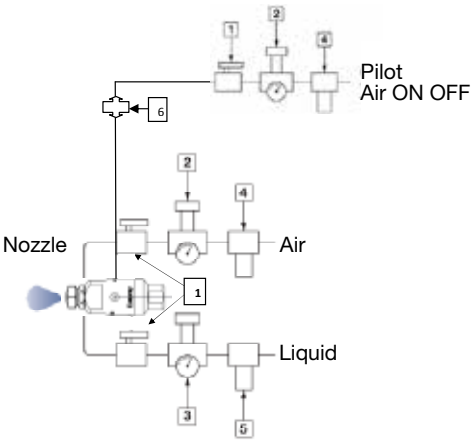
5 Liquid filter
Filtro del liquido

PA - PAA
AUTOMATIC SPRAY GUNS
PISTOLA ATOMIZADORA AUTOMÁTICA

(1) - Pressure - *Presión*

The liquid is fed to the nozzle under pressure

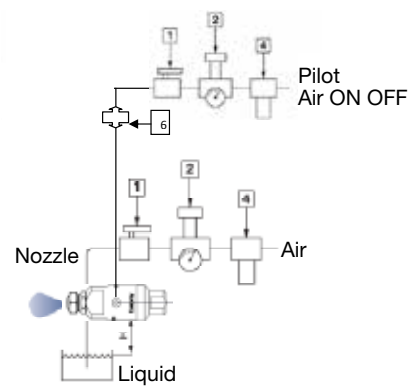
El líquido debe ser enviado a los atomizadores bajo presión.



(2) - Siphon - *Por Sifón*

The venturi effect created by the nozzles helps to create suction, allowing the nozzle to siphon liquid.

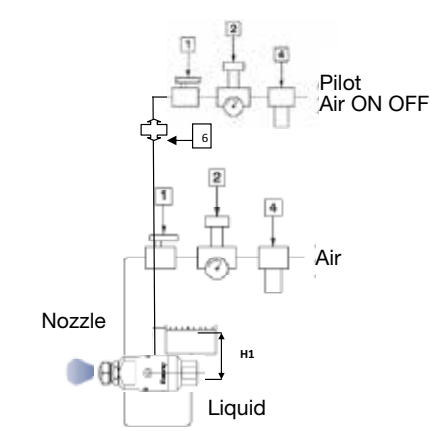
El líquido es alimentado por efecto venturi por la presión del aire, depende de la posición del depósito y de la boquilla



(3) - Gravity - *Por Gravedad*

The liquid is fed to the nozzle by gravity

El líquido llega por efecto de la caída y/o gravedad.



1 Ball valve
Válvula

2 Air regulator and gauge
Regulador de presión del aire con manómetro

3 Liquid regulator and gauge
Regulador de presión del líquido con manómetro

4 Liquid filter
Filtro del liquido

5 On off solenoid valve
Electroválvula ON-OFF

TYPE E
STANDARD AIR ATOMIZING BODY STYLES

These air atomizing nozzles come in a variety of body styles, which can include clean-out and shut-off needles.
These standard air atomizers can be used with any of the spray set-ups listed in the catalog.

TYPE E
ATOMIZADORES NEUMÁTICOS

Los atomizadores neumáticos serie "E" ofrecen una solución viable y económica para aplicaciones donde se necesita una atomización extremadamente fina y ofrece un amplio margen para el ajuste de aspersión.
El material de construcción es de latón con tratamiento de superficie de niquelado, AISI 303 y bajo pedido en AISI 316 y Lucidado.

AVAILABLE TYPES ARE:

LOS MODELOS DISPONIBLES SON:

E1

The E1 is the standard air atomizing nozzle style. The air and liquid connections are 1/4" NPT or BSP.

Es el modelo base de la gama de atomizadores neumáticos. Modelo base con tapón posterior. Rosca de conexión ø 1/4 (F) BSPT. (Para todos los modelos). En él pueden ir montadas todas las combinaciones de atomización del catálogo.

E2

The E2 utilizes the same body style as the E1, but has an adjustable needle that acts as a valve to regulate flow. Liquid and air connections are 1/4" NPT or BSP.

Tiene las mismas características de la boquilla E1 con la posibilidad para cerrar completamente o parcialmente la entrada del líquido gracias a una aguja de regulación posterior del líquido y también cortar la pulverización.

E3

The E3 utilizes the same body style as the E1, but comes with a cleanout needle that is activated by pushing a button on the back of the nozzle. Liquid and air connections are 1/4" NPT or BSP.

Es particularmente adecuado para aplicaciones donde el líquido tiene la presencia de impurezas o por su composición, puede causar la obstrucción de la boquilla del líquido. En la parte posterior tiene una aguja de limpieza provista de un pulsador a resorte.

E3P

The E3P utilizes the same body style as the E1, but can be used with a 6" or 12" extension. Liquid and air connections are 1/4" NPT or BSP.

El modelo E3P va dotado de un prolongador (300 mm) y una aguja interna de limpieza anterior a la pulverización, está diseñado para aplicaciones en el que la atomización este lejos de la posición del cuerpo de la boquilla.

E1S

The E1S is an air atomizing nozzle and swivel combination. The nozzle can be oriented into the desired direction and then locked into place.

Mismas características del modelo E1 con la posibilidad de ajustar el ángulo de la pulverización (bajo petición y sólo en material de latón).

MPE
FULL CONE, AIR ATOMIZING NOZZLE
CONO COMPLETO, BOQUILLA DE ATOMIZACIÓN DE AIRE

Characteristics
- Air/mist atomizer, full cone with uniform distribution.

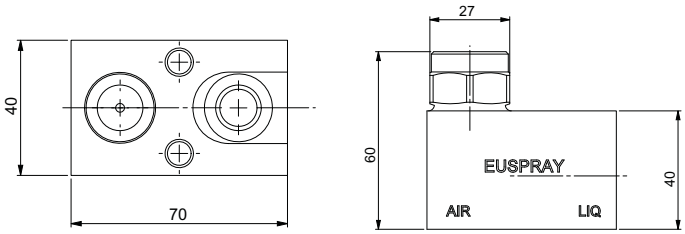
Applications
- Continuous casting cooling.

Caracteristicas
- *Atomizador aire/agua de cono lleno con distribución uniforme.*

Aplicaciones
- *Enfriamento colada continua.*

Material
Brass, AISI303, others available upon request.

MPE



Available Connection		VA [Lbf3/h] - VL [gpm] at PA = 40 PSI (costante - constant - estable)						Angle <°
Water	Air		PL = 15 psi		PL = 30 psi		PL = 40 psi	
			Water	Air	Water	Air	Water	Air	
Plug-in	Plug-in	min.	0.07	2.84	0.33	1.83	0.41	1.41	45 - 60 - 90
3/8" BSP	3/8" BSP								45 - 60 - 90
									45 - 60 - 90
3/8" NPT	3/8" NPT	max.	0.42	6.42	1.07	4.37	1.41	2.67	45 - 60 - 90
									45 - 60 - 90
									45 - 60 - 90

PA [Bar] = Pressione Aria - Air Pressure - Presión Aire
PL [Bar] = Pressione Acqua - Water Pressure - Presión Agua
VA [Nm3/h] = Portata Aria - Air Flowrate - Caudal Aire
VL [lpm] = Portata Acqua - Water Flowrate - Caudal Agua

MRE
FLAT SPRAY, AIR ATOMIZING NOZZLE
PULVERIZACIÓN PLANA, BOQUILLA DE ATOMIZACIÓN DE AIRE

Characteristics
- Air/mist atomizer, flat spray with uniform distribution.

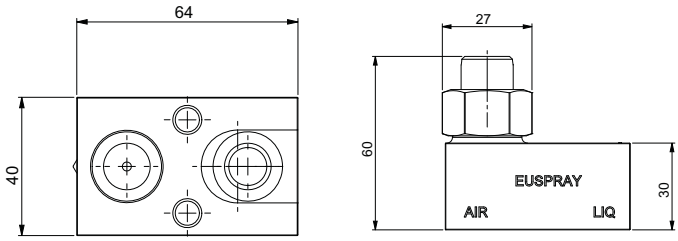
Applications
- Continuous casting cooling.

Caracteristicas
- *Atomizador aire/agua de chorro plano con distribución uniforme.*

Aplicaciones
- *Enfriamento colada continua.*

Material
Brass, AISI303, others available upon request.

MRE



Available Connection		VA [Lbf3/h] - VL [gpm] at PA = 40 PSI (costante - constant - estable)						Angle <°
Water	Air		PL = 15 psi		PL = 30 psi		PL = 40 psi	
			Water	Air	Water	Air	Water	Air	
Plug-in	Plug-in	min.	0.07	4.37	0.14	4.10	0.32	2.91	45 - 60 - 90
3/8" BSP	3/8" BSP								45 - 60 - 90
									45 - 60 - 90
3/8" NPT	3/8" NPT	max.	0.57	8.74	0.76	7.92	0.97	5.10	45 - 60 - 90
									45 - 60 - 90
									45 - 60 - 90

PA [Bar] = Pressione Aria - Air Pressure - Presión Aire
PL [Bar] = Pressione Acqua - Water Pressure - Presión Agua
VA [Nm3/h] = Portata Aria - Air Flowrate - Caudal Aire
VL [lpm] = Portata Acqua - Water Flowrate - Caudal Agua

MTE
FLAT SPRAY, AIR ATOMIZING NOZZLE
PULVERIZACIÓN PLANA, BOQUILLA DE ATOMIZACIÓN DE AIRE

Characteristics
- Air/mist atomizer, flat spray with uniform distribution.

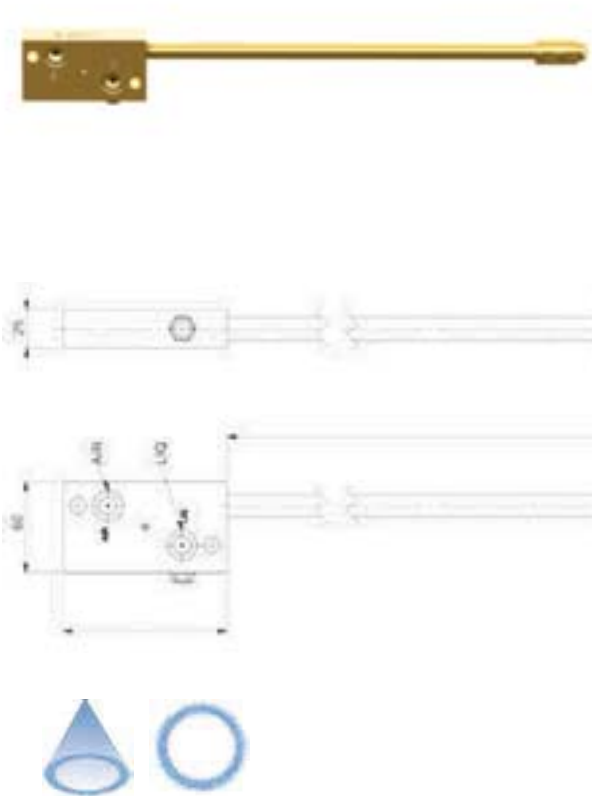
Applications
- Continuous casting cooling.

Caracteristicas
- *Atomizador aire/agua de chorro plano con distribución uniforme.*

Aplicaciones
- *Enfriamento colada continua.*

Material
Brass, others available upon request.

MTE



Available Connection			VA [Lbf3/h] - VL [gpm] at PA = 40 PSI (costante - constant - estable)						Angle <°
Water	Air		PL = 15 psi		PL = 30 psi		PL = 40 psi		
			Water	Air	Water	Air	Water	Air	
Plug-in	Plug-in	min.	0.11	1.23	0.25	1.09	0.34	0.85	45 - 60 - 90
									45 - 60 - 90
3/8" BSP	3/8" BSP								45 - 60 - 90
									45 - 60 - 90
3/8" NPT	3/8" NPT	max.	1.56	3.55	2.40	3.22	3.64	2.43	45 - 60 - 90
									45 - 60 - 90

PA [Bar] = Pressione Aria - Air Pressure - Presión Aire
PL [Bar] = Pressione Acqua - Water Pressure - Presión Agua
VA [Nm3/h] = Portata Aria - Air Flowrate - Caudal Aire
VL [lpm] = Portata Acqua - Water Flowrate - Caudal Agua

MGE
FLAT SPRAY, AIR ATOMIZING NOZZLE
PULVERIZACIÓN PLANA, BOQUILLA DE ATOMIZACIÓN DE AIRE

Characteristics
- Air/mist atomizer, flat spray with uniform distribution.

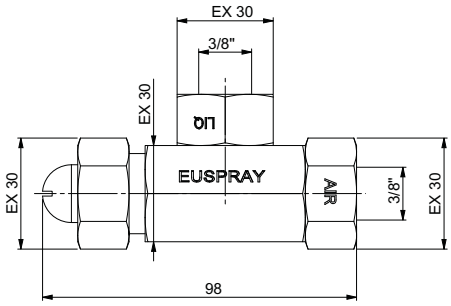
Applications
- Continuous casting cooling.

Caracteristicas
- *Atomizador aire/agua de chorro plano con distribución uniforme.*

Aplicaciones
- *Enfriamento colada continua.*

Material
Brass, AISI303, others available upon request.

MGE



Available Connection			VA [Lbf3/h] - VL [gpm] at PA = 40 PSI (costante - constant - estable)						Angle <°
Water	Air		PL = 15 psi		PL = 30 psi		PL = 40 psi		
			Water	Air	Water	Air	Water	Air	
Plug-in	Plug-in	min.	0.33	4.37	0.57	3.42	0.85	2.38	45 - 60 - 90
3/8" BSP	3/8" BSP								45 - 60 - 90
									45 - 60 - 90
3/8" NPT	3/8" NPT	max.	1.23	10.93	2.05	8.74	3.04	6.31	45 - 60 - 90
									45 - 60 - 90
									45 - 60 - 90

PA [Bar] = Pressione Aria - Air Pressure - Presión Aire
PL [Bar] = Pressione Acqua - Water Pressure - Presión Agua
VA [Nm3/h] = Portata Aria - Air Flowrate - Caudal Aire
VL [lpm] = Portata Acqua - Water Flowrate - Caudal Agua

E1M

The E1M air atomizing nozzle is ultra compact. The 1/8"(NPT or BSP) connections are side by side, which can save space for the piping in an confined area, and makes installation easier.

El nuevo atomizador neumático EM se caracteriza por una medida ultra compacta que le permite utilizarlo en espacios muy reducidos. Además, la conexión de 1/8 en el mismo lado permite fácil conexión.

0ME

The OME ultra compact air atomizing nozzle is very similar to the E1M series. The primary difference is that the 1/8" connections are arranged 90 degrees apart, This provides a different connection angle for the piping or tubing.

La serie "0ME" se caracteriza por las mismas características del modelos "E1M" pero con las conexiones de 1/8 " en otra disposición, entre ellas en 90 ° para ser capaz de ser instalada en posiciones particularmente "difíciles".

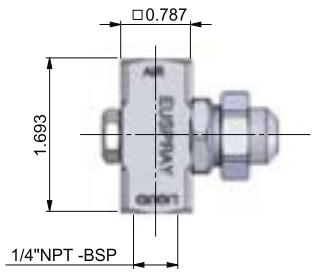
0MES

The OMES air atomizing nozzle is another ultra compact option, it also utilizes 1/8"(NPT or BSP) air and liquid connections.

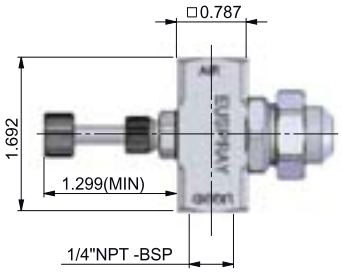
La serie "0MES" es una evolución en forma más reducida que la Series E1 para facilitar su instalación. Las características de pulverización es la misma que los productos de la serie estándar "E", con la misma conexión para facilitar la instalación del equipo adecuado para los atomizadores estándar existente.

COMPACT AIR ATOMIZING NOZZLES DIMENSIONS
DIMENSIONES

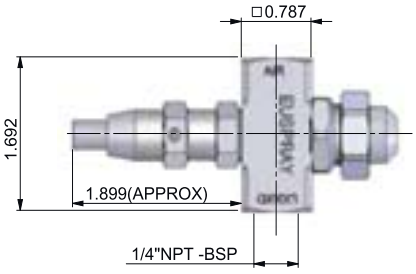
E1



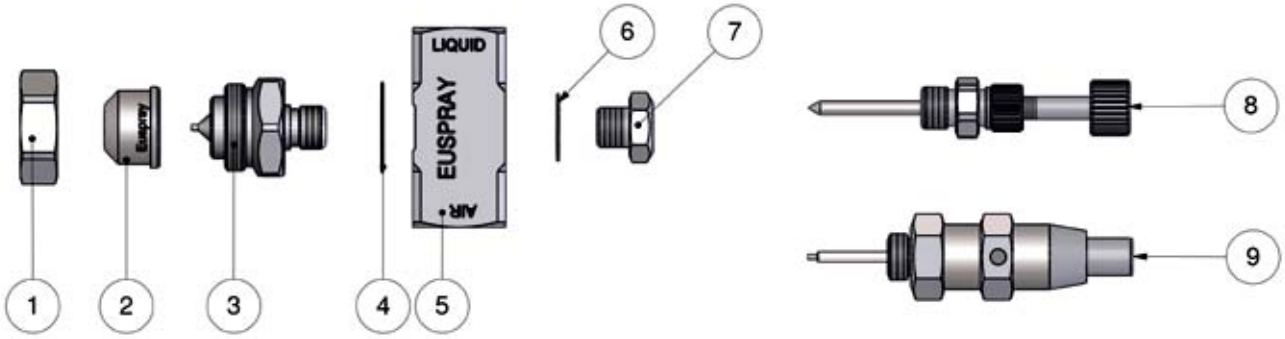
E2



E3



Components
Componentes



① Retainer ring
Tuerca

② Air cap (P series pressure feed S series siphon or gravity feed)
Boquilla del aire (serie P - bajo presión, serie S por sifón o gravedad)

③ Fluid cap B
Boquilla del líquido B

④ Fluid cap gasket C
Junta anterior C

⑤ *Nozzle body*
Cuerpo de la Boquilla

⑥ Rear gasket F
Junta posterior F

⑦ Plug
Tapón

⑧ Shut-off needle
Aguja de regulación del líquido

⑨ Clean-out needle
Aguja de limpieza

PA - PAA
AUTOMATIC AIR ATOMIZING NOZZLES

The PA automatic spray nozzles are capable of being cycled on and off at varying speeds, depending on the applications requirements. Compressed air is used to both atomize the spray and actuate the nozzle. All the PA style nozzles can cycle at a rate greater than 100 times per minute. Additionally, all PA style nozzles can utilize any of the air atomizing set-ups listed in the catalog.

PA-PAA
PISTOLAS ATOMIZADORAS NEUMÁTICAS

Los atomizadores neumáticos PA están adaptados para todos los conjuntos de atomización enunciadas en las páginas posteriores y permiten comandar la apertura y cierre de la alimentación de liquido gracias a un pistón neumático, hasta una frecuencia de 100 operaciones por minuto. Disponen de dos alimentaciones ø ¼ (F) BSPT para el aire (A) y el líquido de pulverización (L), así como de dos alimentaciones ø 1/8 (F) BSPT para el aire de pilotaje (utilizar el más práctico para la instalación). Con el atomizador en reposo el orificio está cerrado.

AVAILABLE TYPES ARE:

MODELOS DISPONIBLES:

PA1 - PAA1

The PA1 is the standard automatic air atomizing nozzle. An air cylinder in the nozzle precisely controls the liquid flow. The liquid flow can be pressure fed, siphon fed, or gravity fed, and utilizes a 1/4 (NPT or BSP) connection, for both liquid and air. This nozzle style can utilize all the set-ups shown in the catalog.

The PAA1 is essentially the same as the PA1, except that it incorporates a clean-out needle. The needle protrudes through the orifice every time the air cylinder is actuated, thereby clearing any particles that may be building in the fluid cap orifice. This nozzle type is recommended if there are any small suspended solids in the liquid.

PA1 es el modelo estándar y hace las operaciones de pulverizado de encendido y apagado.

PAA1: La operación es como la Pistola PA1 pero equipado para la automática limpieza del orificio. Es adecuada para aquellos líquidos que puede causar obstrucciones.

PA1-RA

The PA1-RA utilizes the same body style as the PA, but has an adjustable shut-off needle, which regulates cycle time and flow. Liquid and air connections are 1/4" NPT or BSP. These nozzles are ideal for quick on-off applications.

Modelo con ajuste de la carrera del pistón interior de manera para reducir el tiempo de las operaciones de pulverización (para operaciones muy elevadas).

PA1-CR

The PA1-CR air atomizing nozzle utilizes a heated chamber, which allows it to spray more viscous liquids that would otherwise thicken at room temperature.

Modelo con cámara de calentamiento para líquidos particularmente difíciles de pulverizar a temperatura ambiente.

PA2

The PA2 is very similar to the PA1. The primary difference between the two is that the PA1 utilizes air atomizing set-ups, while the PA2 utilizes hydraulic atomizing set-ups and standard nozzle tips. Compressed air is used to actuate the nozzle in the PA2, but it is not used for atomization. These hydraulic atomizing nozzles include the: C1, CX, DH, and BG styles, which can be found in this catalog and the general catalog. The maximum flow with these specified tips would be .35 GPM at 45 PSI.

Tiene el mismo uso de la PA1. Permite la pulverización intermitente utilizando modelo de boquillas hidráulicas C1-CX-DH de caudal máximo de 1,3 l / min. a 3 bar. (sólo con el líquido sin la ayuda de la mezcla de aire comprimido)

PA3 - PAA3

The PA3 is the miniaturized version of the PA1. While the PA1 utilizes 1/4" liquid and air connections, the PA3 utilizes 1/8" connections (NPT and BSP).

The PAA3 is the same as the PA3, except that it utilizes a clean-out/ shut-off needle to clear the orifice of small built up particles. The needle protrudes through the orifice every time it is cycled by the air actuation.

PA3: Mismas características del modelo PA1 pero modelo compacto. Todas las conexiones de alimentación son en 1/8 BSP.

PAA3: Tiene el mismo uso de la PA3 pero con la limpieza automática del orificio, particularmente adecuado para aplicaciones donde el líquido tiene la presencia de impurezas o por su composición, puede provocar la obstrucción de la boquilla del líquido.

PA3-P - PA1-P

Automatic air atomizing nozzle with 6" or 12"extension.

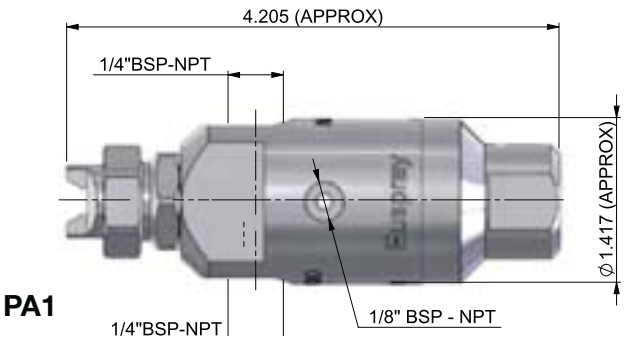
Modelo con prolongador para aplicaciones que necesitan una pulverización a distancia del cuerpo de atomizador.

PA4

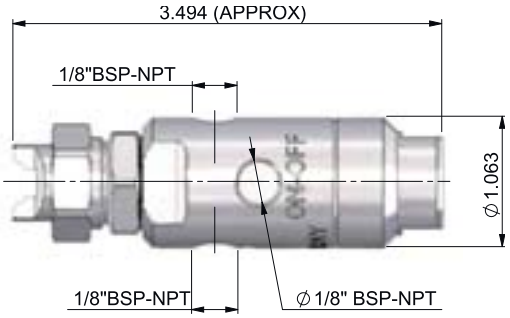
The PA4 is miniaturized version of a standard air atomizing nozzle, exactly like the PA3. The difference between the PA4 and the PA3 is that the PA3 utilizes air atomizing set-ups, while the PA4 utilizes hydraulic atomizing set-ups and standard nozzle tips. Compressed air is used to actuate the nozzle in the PA4, but it is not used for atomization. These hydraulic atomizing and standard nozzle tips include the: C1, CX, DH, and BG styles, which can be found in this catalog and the general catalog. The maximum flow with these specified tips would be .35 GPM at 45 PSI.

Tiene el mismo uso de la Pistola PA3, Permite la pulverización intermitente utilizando modelo de boquillas hidráulicas C1-CX-DH de caudal máximo de 1,3 l / min. a 3 bar. (sólo con el líquido sin la ayuda de la mezcla de aire comprimido).

FLUID ONLY, AUTOMATIC NOZZLES DIMENSIONS
DIMENSIONES

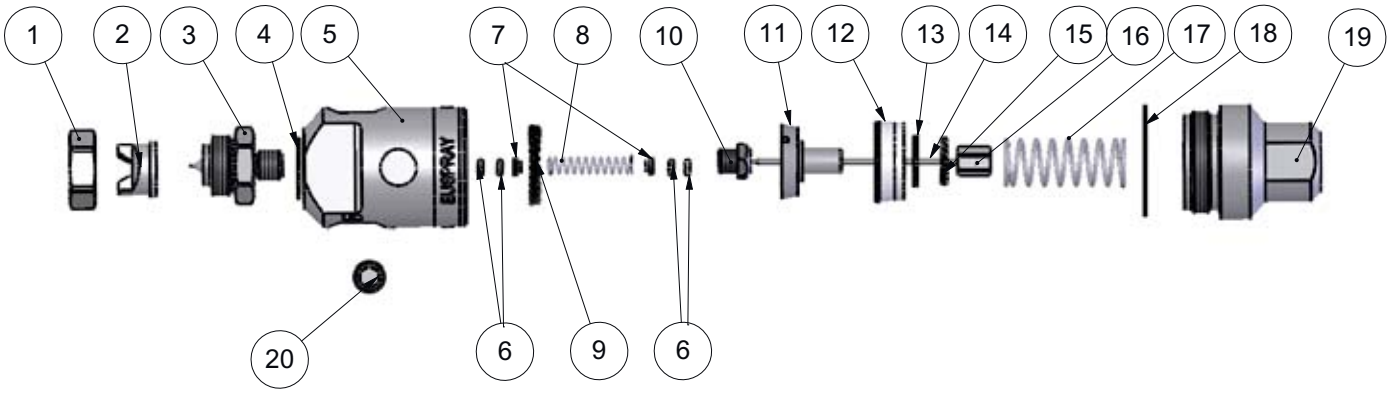


PA1



PA3

Components
Componentes



① Retainer ring *Tuerca*	② Air nozzle *Boquilla del aire*	③ Liquid nozzle *Boquilla del líquido*	④ Teflon tape *Junta en teflón*	⑤ Air atomizing body *Cuerpo pistola*
⑥ Seal needle *Juntas de la aguja en teflón*	⑦ Part 7 flat washer *Arandela part 7*	⑧ Spring *Muelle*	⑨ Locking washer *Arandela elástica*	⑩ Sliding adjustment screw *Tornillo de regulación*
⑪ Cup seal support *Soporte de apoyo de la junta de la tapa*	⑫ Cup seal *Sello de la tapa*	⑬ (flat) washer *Arandela plana*	⑭ needle *Aguja*	⑮ Locking washer *Arandela*
⑯ Rope nut *Tuerca de fijación*	⑰ Closing spring *Muelle de cierre*	⑱ Part 18 seal *18 juntas part 18*	⑲ Gun cap *Tapa posterior de la pistola*	⑳ 1/8” grain *Tornillo 1/8*

TYPE PA5
AUTOMATIC AIR ATOMIZING NOZZLE (compact/ adjustable)
PISTOLA AUTOMÁTICA

Characteristics

The PA5 adjustable air atomizing nozzle is capable of spraying both a flat spray and full cone pattern. By simply twisting the external retaining cap the pattern can be converted from a flat spray to a full cone and vice versa.

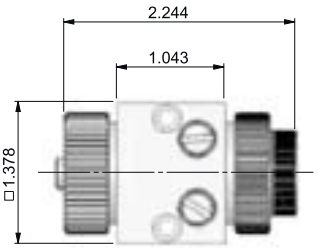
These nozzles can operate at a very low flow rate. By adjusting the external screws, an internal needle can be used as a valve to regulate flow.
The droplet size can also be varied by increasing or decreasing the air and liquid pressure.

Due to the variability of the orifice and the needle valve, along with the possible variations of air and liquid pressure, this nozzle is capable of innumerable combinations of pattern, flow, and droplet size. Flow can range from a minimum of near zero to a maximum flow of 52 GPH.

Caracteristicas

La Pistola automática atomizadora PA5 tiene la posibilidad de pulverizar tanto en cono lleno como en salida plana, grácias a una simple tuerca que actúa sobre un anillo colocado en la proximidad de la boquilla de pulverización. El caudal puede estar cerca de 0 lt / h con la aguja del tornillo de ajuste completamente cerrada, también hay la posibilidad con la ayuda de la presión del aire de crear una niebla con gotas muy pequeñas, o con un pulverizado de gotas mucho más grandes.
El caudal máximo de agua a 4 bar con la tuerca posterior abierta y la presión del aire libre en 4 bar es aproximadamente 195 l / h, con una buena nebulización.

Las innumerables posibilidades de ajuste de entrada de líquido (así como a las variaciones en la presión de la alimentación) con el ajuste del aire de mezcla (ambos desde la planta normal hasta el tornillo de ajuste) hacen que se psoduzcan una amplia gama de caudales y tamaños de partículas de las gotas producidas.
A continuación se muestra una tabla indicativa del caudal posible.



NB: Finest atomization is obtained by using auxiliary air inlet.
NB: mejor atomización se obtiene mediante el uso de una entrada de aire auxiliar.

PA5		Pressure (psi)	Liquid capacity (gph) at different liquid pressure (psi)			
			22	30	45	60
Full cone spray pattern *Cono lleno*	Flat spray pattern *Chorro plano*	22	19.02			
		30		38.05		
		45			45.96	
		60				51.50

TYPE PA6
AUTOMATIC AIR ATOMIZER (compact/ low flow)
PISTOLA AUTOMÁTICA

Characteristics

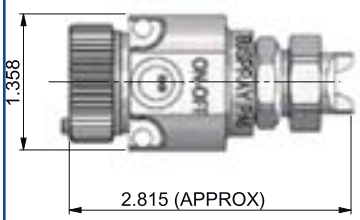
The PA6 is a compact automatic air atomizing nozzle, with 1/8" NPT and BSP connections, that has the capability of cycling 200 times per minute. The fast cycling time enables the nozzle to create very low spray volumes, while still maintaining a relatively large liquid free passage.

The stroke of the shut-off needle can be adjusted to control the liquid flow. This aids in limiting the liquid flow to a very specific required amount, which is especially advantageous when there is no pressure regulator in the system.

Caracteristicas

La pistola neumática PA6 ha sido desarrollada con el objetivo de conseguir la máxima fiabilidad y, al mismo tiempo para tener un tamaño más reducido, mientras que tiene grandes pasajes libres con conexiones de 1/8". El reducido tamaño de la pistola PA6 permite su uso en lugares donde el espacio resulta ser pequeño. Un estudio cuidadoso y pruebas rigurosas, nos han permitido alcanzar altos niveles de calidad y fiabilidad. Puede ser sometida a ciclos muy rápidos (cerca de 200 operaciones por minuto) durante mucho tiempo. Además, la Pistola PA6 es ajustable manualmente por medio de una tuerca moleteada que permite la reducción de la carrera de la aguja (para poder obtener tiempos de ciclo más rápidos).

La reducción de la carrera de la aguja también se puede usar para reducir el Caudal del líquido: esto es especialmente apreciado en los casos en que uno necesita tener caudales muy bajos. Otra ventaja de la reducción de la carrera de la aguja es la capacidad de ajustar directamente desde la pistola el caudal del líquido en los casos en los que no se tiene un regulador de presión en la instalación de la pulverización líquida.



SPEEDY JET
ELECTRIC AUTOMATIC AIR ATOMIZING NOZZLES AND CONTROL PANEL- (high cycle)
PISTOLA ELECTRICA PARA PULVERIZACIÓN AUTOMÁTICA Y CENTRALITA DE CONTROL

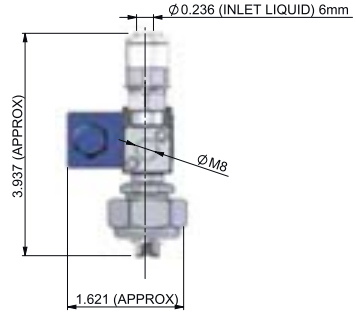
Fast Cycling Air Atomizer

This electrically actuated air atomizing nozzle can cycle at speeds up to 3,000 times per minute. Applications for this nozzle can vary, but they are most commonly associated with fast moving production lines. These nozzles are typically used with one of our custom designed controllers. The controller can vary flow rates by changing the spray duration and the time between sprays. These nozzles can utilize any of the various set-ups found in the catalog, including larger free passage set-ups which can minimize the possibility of clogging.

The controller comes with a program that can be downloaded on to the users computer. By using an adapter (USB-RS232), you can vary the on-off parameters in seconds and then restart production. Up to 8 Speedy Jet nozzles can be used per controller.

Tipo Atomización con aire

El atomizador neumático se ensambla con conjuntos de pulverización que figuran en el catálogo y le permite controlar la operación de encendido y apagado (on-off). Su funcionamiento a altas velocidades, hasta 6000 ciclos por minuto, es ideal en líneas de producción rápidas y por lo tanto permite aumentar la producción.
Al utilizar nuestro sistema de control del sistema (PWM) con el sistema Speedy Jet tiene un control muy preciso del caudal de flujo y el ángulo de pulverización, gracias a un ON-OFF muy rápido. El caudal de flujo se puede variar de forma sencilla y muy rápida, con sólo cambiar la temporización de ON-OFF en el sistema de control. Se pueden obtener diferentes caudales de flujo con un solo modelo de boquilla a la misma presión. Caudales más bajos se pueden obtener con boquillas con orificios grandes, reduciendo el riesgo de obturación del orificio de la boquilla. Para programar el sistema de control es suficiente para descargar el software en el ordenador del cliente (incluido en el suministro), después de conectar el ordenador al sistema de control a través de un adaptador USB -RS232 (incluido en el suministro) es posible variar el tiempo de encendido y apagado en pocos segundos, y luego retomar la producción rápidamente reducir los costes de gestión.
Cada sistema de control (centralita) puede pilotar hasta 8 unidades de Speedy Jet.

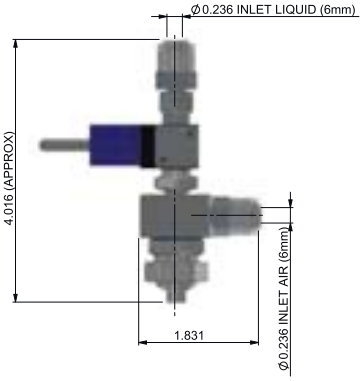


Other Tips

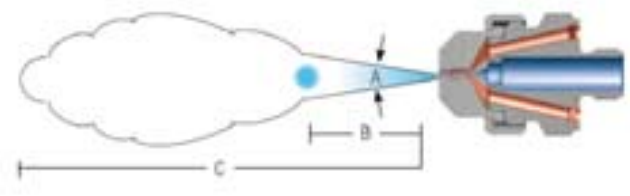
Certain non-air atomizing tips can be used with the Speedy Jet, they are: C1 (flat spray tip); CX (hydraulic atomizing tip); DH (flooding tip); and BG (full cone tip). These nozzle tips can be found in the Amerispray General Catalog. There are certain parameters in using these non-air atomizing tips, the flow cannot exceed .35 GPM at 45 PSI.

Tipo hidráulico

Su funcionamiento es como el de modelo de aire. Trabajando en el tiempo de encendido y apagado (on-off) se puede reducir el caudal de las boquillas instaladas, manteniendo constantes las características de pulverización. Se permite el uso de boquillas de gran paso para reducir el riesgo de obstrucción. Permite una pulverización muy precisa cuándo y dónde sea necesario. Se puede instalar boquillas C1, CX, DH y BG con coeficiente de caudales no superiores a 1,3 lt./min. a 3 bar

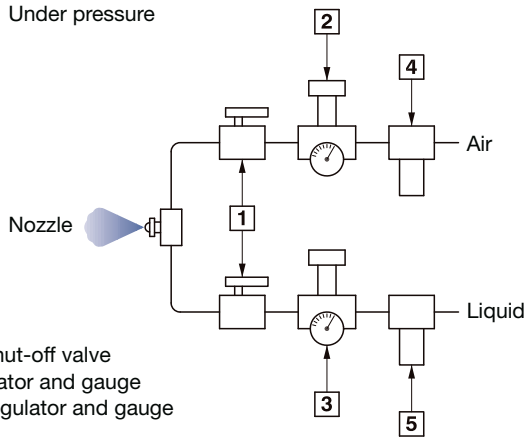


FULL CONE, INTERNAL MIX SET-UP (pressure feed)
CONO LLENO POR PRESION



B= Distance that the spray pattern remains constant, the pattern begins to vary past this point.
C= Maximum spray distance.

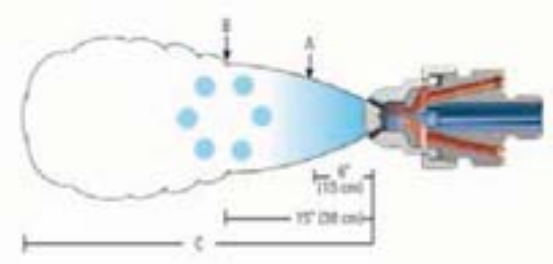
B= *Distancia en cuyo interior el ángulo se mantiene constante. Fuera de esta distancia el chorro se vuelve turbulento.*
C= *máxima distancia de la aspersión.*



1 Liquid shut-off valve
2 Air regulator and gauge
3 Liquid regulator and gauge
4 Air filter
5 Liquid stainer

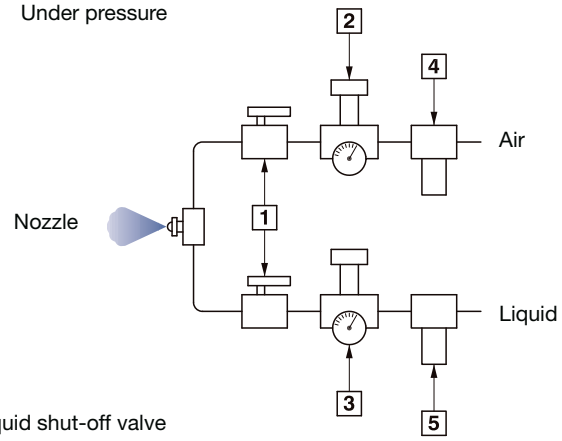
Spray Set-up	Liquid Capacity (gallons per hour) and Air Capacity (standard cubic feet per minute)*															Spray Dimension		
	Liquid Pressure															Spray Angle A (°)	B (in.)	C (ft.)
	10 psi			20 psi			30 psi			40 psi			60 psi					
	Air Press. (psi)	gph	scfm	Air Press. (psi)	gph	scfm	Air Press. (psi)	gph	scfm	Air Press. (psi)	gph	scfm	Air Press. (psi)	gph	scfm			
B2-P11	10	0.66	0.56	16	1.69	0.42	20	1.69	0.49	39	1.64	0.81	51	2.06	0.91	13 - 15	12 - 17	9 - 14
	12	0.48	0.67	20	1.32	0.53	25	1.45	0.60	41	1.51	0.88	54	1.93	1.02			
	15	0.37	0.77	25	1.08	0.67	29	1.19	0.70	44	1.37	0.95	57	1.69	1.16			
				26	0.90	0.70	32	0.90	0.84	45	1.24	1.02	61	1.45	1.33			
				29	0.79	0.81	35	0.79	0.91	46	1.14	1.09	65	1.19	1.51			
				30	0.69	0.88	36	0.66	0.98	49	1.03	1.16	67	1.08	1.58			
				32	0.53	0.95	39	0.61	1.09	54	0.79	1.33	70	0.98	1.65			
B2-P12	10	0.66	0.67	20	1.51	0.95	25	1.77	1.02	32	2.43	1.19	41	3.14	1.37	12 - 15	17 - 22	12 - 17
	12	0.53	0.77	22	1.37	1.02	26	1.69	1.09	36	2.17	1.37	45	2.91	1.51			
	15	0.42	0.91	25	0.12	1.12	29	1.56	1.19	41	1.90	1.54	49	2.67	1.65			
				26	1.14	1.23	30	1.37	1.30	44	1.77	1.65	54	2.43	1.82			
				29	1.03	1.30	32	1.22	1.40	45	1.66	1.72	57	2.22	2.03			
				30	0.90	1.40	35	1.14	1.51	46	1.56	1.82	61	2.01	2.17			
							39	0.95	1.68	49	1.45	1.93	65	2.32	2.38			
B3-P12	12	1.27	0.74	25	2.22	1.09	29	2.83	1.16	39	4.36	1.30	49	5.28	1.51	12 - 15	17 - 22	12 - 17
	16	1.08	0.95	26	1.98	1.23	30	2.59	1.30	41	4.07	1.33	54	4.33	1.65			
	20	0.90	1.16	29	1.85	1.30	35	2.17	1.47	45	3.59	1.51	57	4.44	1.75			
	22	0.82	1.23	32	1.51	1.54	39	1.80	1.68	49	3.12	1.72	61	4.02	1.93			
	25	0.79	1.37	36	1.27	1.72	44	1.56	1.93	54	2.75	1.93	65	3.65	2.10			
	26	0.77	1.44	41	1.08	1.89	46	1.32	2.07	57	2.40	2.14	70	3.28	2.28			
	29	0.74	1.54	45	0.95	2.07	51	1.08	2.28	61	2.09	2.28	71	3.12	2.38			
B5-P13	16	3.43	2.66	32	4.70	4.06	41	5.28	4.76	49	8.45	5.22	67	9.77	6.76	18 - 21	26 - 38	16 - 30
	20	2.35	3.19	36	3.46	4.55	45	4.31	5.22	57	6.60	5.95	77	7.66	7.70			
	22	1.90	3.43	41	2.51	5.01	49	3.14	5.71	67	4.20	7.18	81	6.60	8.23			
	25	1.53	3.68	45	1.85	5.50	57	1.85	6.55	77	2.40	8.40	87	5.55	8.75			
	26	1.24	3.92	49	1.29	5.99	61	1.24	7.18	81	1.80	8.93	91	4.49	9.45			
	29	0.95	4.17	51	1.11	6.23	67	0.79	7.70	87	1.32	9.63	97	3.70	10.15			
	30	0.71	4.45							91	0.95	10.15	102	2.91	10.71			
B6-P13	12	8.19	2.00	20	16.11	2.42	30	14.00	3.36	39	21.13	3.61	55	23.25	4.73	17 - 21	24 - 36	16 - 28
	15	6.60	2.31	22	14.27	2.66	35	10.83	3.92	44	18.23	4.10	61	19.28	5.46			
	16	4.89	2.63	25	12.68	2.98	39	8.19	4.45	46	15.59	4.55	67	16.11	6.16			
	19	3.41	2.98	26	10.83	3.26	41	6.87	4.76	51	12.94	5.11	71	12.68	6.86			
				29	9.25	3.57	44	5.81	5.04	54	11.62	5.39	77	10.30	7.53			
				35	7.93	3.85				55	9.77	5.64	81	8.19	8.40			
				32	6.60	4.17				57	9.51	5.95	87	6.08	9.10			
B8-P14	15	11.62	3.01	20	33.02	2.77	29	32.49	3.71	32	52.57	3.01	44	66.04	3.47	19 - 22	35 - 46	20 - 30
	16	8.45	3.57	22	28.00	3.19	30	28.53	4.17	36	45.97	3.85	46	59.44	4.20			
	0	0.00	0.00	25	22.98	3.68	32	25.10	4.55	41	38.57	4.66	51	54.16	4.94			
				26	18.49	4.13	35	20.87	5.01	45	31.96	5.39	55	48.08	5.71			
				29	14.53	4.55	36	16.91	5.43	46	28.53	5.81	59	42.00	6.44			
							39	13.74	5.81	49	25.10	6.16	67	31.96	7.88			
							41	11.10	6.23	51	22.19	6.55	71	24.57	8.96			

WIDE ANGLE FULL CONE, INTERNAL MIX SET-UP (pressure feed)
CONO LLENO GRAN ANGULO POR PRESION



Spray dimensions A. B. and C illustrate the coverages at varying distances. Past the B dimension the pattern begins to vary.

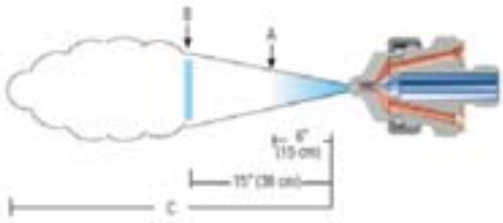
La forma del chorro se indica en el esquema. Las secciones A- B – C indican el diámetro del chorro a varias distancias del orificio. Más allá de la distancia C, el chorro se vuelve turbulento.



1 Liquid shut-off valve
2 Air regulator and gauge
3 Liquid regulator and gauge
4 Air filter
5 Liquid stainer

Spray Set-up	Liquid Capacity (gallons per hour) and Air Capacity (standard cubic feet per minute)*															Spray Dimension		
	Liquid Pressure															A (in.)	B (in.)	C (ft.)
	10 psi			20 psi			30 psi			40 psi			60 psi					
	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm			
B2-P21	9	1.40	0.36	16	2.14	0.47	22	2.14	0.56	35	2.35	0.77	45	2.77	0.84	5 - 7	9 - 12	5 - 13
	10	1.14	0.43	19	1.85	0.53	26	1.74	0.74	39	2.14	0.91	49	2.56	0.98			
	12	0.79	0.50	20	1.69	0.60	30	1.29	0.88	44	1.69	1.05	57	2.06	1.26			
	15	0.45	0.60	22	1.45	0.67	35	0.85	1.02	46	1.29	1.19	61	1.61	1.47			
				25	1.19	0.77				49	1.11	1.30	67	1.16	1.65			
				26	0.92	0.84				51	0.90	1.40	71	0.74	1.89			
B5-P22	12	1.85	1.75	25	3.49	2.38	29	4.89	2.38	41	6.60	2.94	54	8.19	3.36	7 - 8	12 - 14	6 - 19
	15	0.55	2.17	26	2.59	2.77	30	3.99	2.66	44	5.81	3.22	55	7.40	3.68			
							32	3.09	2.98	45	4.89	3.54	57	6.87	3.96			
										46	3.99	3.82	59	6.08	4.27			
										49	3.20	4.17	61	5.28	4.55			
										51	2.40	4.55	67	3.59	5.36			
										54	1.61	4.97	71	1.80	6.41			
B6-P22	10	6.34	1.12	20	11.36	1.30				41	13.74	2.28	54	16.64	2.38	7 - 8	14 - 15	7 - 22
	12	3.59	1.54	22	9.25	1.72	32	6.87	2.73	44	12.15	2.66	55	15.32	2.77			
	15	2.01	2.00	25	7.40	2.84	35	4.99	3.12	45	10.30	3.05	57	13.74	3.54			
				26	5.55	2.49	36	3.09	3.50	46	8.72	3.47	61	10.83	3.89			
										49	6.87	3.85	67	7.13	4.83			
										51	5.15	4.27	71	4.20	5.81			
										54	3.49	4.66						
B6-P23	19	9.51	2.98	30	15.06	4.06	45	14.00	5.46	61	16.91	6.90	81	19.55	8.89	8 - 9	13 - 16	18 - 34
	22	7.66	3.57	35	13.47	4.55	46	13.21	5.71	71	13.47	8.05	87	17.96	9.10			
	26	6.08	4.10	39	11.89	5.01	49	12.42	5.95	81	10.57	9.28	91	16.38	9.80			
	29	5.20	4.38	44	10.30	5.50	51	11.89	6.20	87	8.98	9.98	126	14.79	10.33			
	30	4.41	4.66	46	8.72	5.95	57	10.04	6.79	91	7.40	10.50	102	13.47	11.03			
	33	3.70	4.97	51	6.87	6.48	70	6.60	8.05	97	5.81	11.20						
	35	3.01	5.22	61	3.59	7.70	71	4.89	8.58	102	4.70	11.73						
B5-P24	16	3.25	1.40	32	4.31	2.17	39	5.55	2.42	61	5.10	3.50	81	5.81	4.55	6 - 7	9 - 11	9 - 31
	19	2.62	1.58	36	3.20	2.49	44	4.31	2.73	67	3.86	3.96	87	4.65	4.97			
	20	2.09	1.75	41	2.35	2.77	46	3.25	3.01	71	2.85	4.34	91	3.70	5.32			
	22	1.61	1.89	44	2.01	2.91	49	2.83	3.19	77	2.14	4.73	97	3.01	5.71			
	25	1.29	2.03	45	1.69	3.05	51	2.46	3.29	81	1.64	5.11	102	2.40	6.09			
	26	1.03	2.17	46	1.45	3.19	57	1.69	3.68	87	1.29	5.50						
	29	0.82	2.35	49	1.24	3.33	61	1.24	4.03	91	1.06	5.85						
B8-P25	25	6.60	5.46	44	10.30	8.05	49	13.21	5.25	67	16.38	11.20	87	24.57	13.83	9 - 13	18 - 23	18 - 32
	26	5.20	5.85	45	8.72	8.40	51	11.36	9.10	71	12.42	12.08	91	20.34	14.88			
	29	3.99	6.23	46	7.13	8.93	54	10.83	9.63	77	9.51	13.13	97	16.38	16.10			
	30	3.01	6.76	49	6.08	9.28	57	7.13	10.50	81	6.87	14.18	102	13.74	17.33			
	33	2.01	7.18	51	4.89	9.80	59	6.08	10.85	87	4.99	15.23						
				54	3.91	10.15	61	4.99	11.20	91	3.59	16.10						
							64	4.20	11.73									

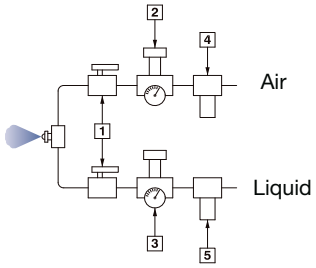
FLAT SPRAY, INTERNAL MIX SET-UP (pressure feed)
CONO LLENO POR PRESION



Spray dimensions A. B. and C illustrate the coverages at varying distances. Past the B dimension the pattern begins to vary.

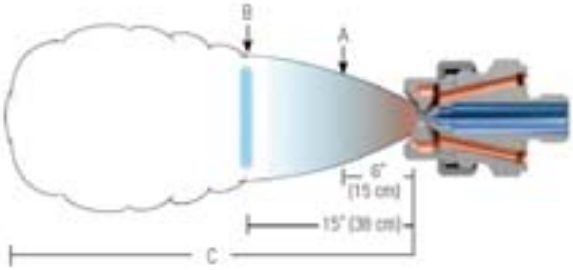
La forma del chorro se indica en el esquema. Las secciones A- B – C indican el diámetro del chorro a varias distancias del orificio. Más allá de la distancia C, el chorro se vuelve turbulento.

1 Liquid shut-off valve
2 Air regulator and gauge
3 Liquid regulator and gauge
4 Air filter
5 Liquid stainer



Spray Set-up	Liquid Capacity (gallons per hour) and Air Capacity (standard cubic feet per minute)*															Spray Dimension		
	Liquid Pressure															A (in.)	B (in.)	C (ft.)
	10 psi			20 psi			30 psi			40 psi			60 psi					
	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm			
B2-P31	10	1.45	0.84	19	2.40	1.09	29	2.27	1.47	39	2.96	1.82	57	3.17	2.42	10 - 22	18 - 37	8 - 13
	12	1.24	0.95	22	2.03	1.26	32	1.98	1.65	44	2.67	1.96	67	2.56	2.84			
	15	1.08	1.09	26	1.72	1.47	36	1.64	1.82	46	2.40	2.17	77	1.98	3.26			
	16	0.92	1.19	30	1.43	1.65	41	1.37	2.00	51	2.14	2.31	87	1.40	3.64			
	19	0.79	1.30	35	1.14	1.82	45	1.11	2.21	61	1.43	2.77	91	1.14	3.85			
	20	0.66	1.40	39	0.87	2.00	46	0.98	2.28	67	1.11	2.98	97	0.87	4.17			
	22	0.53	1.54	41	0.74	2.10	49	0.85	2.38	71	0.82	3.19	102	0.63	4.27			
B3-P31	12	2.17	0.69	20	3.80	0.95	30	3.57	1.26	39	5.05	1.47	67	4.25	2.42	14 - 23	28 - 38	7 - 10
	15	1.80	0.81	25	3.14	1.12	35	3.01	1.47	44	4.52	1.61	71	3.65	2.66			
	16	1.45	0.95	29	2.51	1.30	39	2.43	1.65	46	3.99	1.82	77	3.04	2.91			
	19	1.08	1.05	30	2.19	1.40	44	1.88	1.86	51	3.46	2.00	81	2.46	3.15			
	20	0.77	1.19	32	1.88	1.51	46	1.32	2.07	61	2.14	2.52	87	1.93	3.40			
				35	1.61	1.61	49	1.06	2.21	67	1.56	2.77	91	1.48	3.64			
				36	1.61	1.72	51	0.87	2.31	71	1.06	3.01	97	1.14	3.92			
B3-P31A	15	2.38	0.88	29	2.75	1.44	35	3.06	1.68	45	4.12	1.96	61	4.52	2.56	4 - 8	7 - 13	10 - 16
	16	2.06	1.05	30	2.46	1.58	36	2.75	1.79	46	3.86	2.07	67	3.96	2.80			
	19	1.74	1.12	32	2.17	1.68	39	2.48	1.89	49	3.62	2.17	71	3.38	3.05			
	20	1.37	1.26	36	1.61	1.93	44	1.93	2.14	55	2.85	2.49	77	2.91	3.29			
	25	0.82	1.54	41	1.14	2.17	46	1.45	2.38	61	2.25	2.87	81	2.48	3.61			
	29	0.53	1.75	44	0.79	2.42	51	1.08	2.63	71	1.37	3.43	91	1.90	4.17			
	32	0.29	1.96	45	0.53	2.63	55	0.77	2.84	87	0.61	4.20	102	1.61	4.69			
B3-P32	19	1.03	1.05	30	1.95	1.40	44	1.61	1.82	57	2.48	2.10	91	2.69	2.73	10 - 25	18 - 38	6 - 7
	20	0.79	1.16	35	1.40	1.58	45	1.40	1.89	61	1.90	2.35	81	2.19	2.24			
	22	0.61	1.23	36	1.16	1.65	46	1.19	2.00	67	1.40	2.56	87	1.74	3.12			
	25	0.48	1.26	39	0.98	1.75	49	1.00	2.07	71	1.00	2.80	91	1.35	3.43			
	26	0.34	1.44	41	0.82	1.82	51	0.85	2.17									
	29	0.25	1.54	44	0.69	1.93	57	0.48	2.38									
				45	0.55	2.00												
B6-P32A	16	2.96	1.89	30	4.76	2.77	39	5.18	3.26	51	7.13	3.92	67	8.72	4.80	4 - 8	6 - 14	8 - 13
	19	2.25	2.10	32	4.44	2.94	41	4.57	3.36	54	6.60	4.06	71	6.87	5.22			
	20	1.72	2.31	35	3.59	3.12	44	4.02	3.61	55	6.08	4.24	77	6.34	5.64			
	22	1.32	2.49	36	3.06	3.33	45	3.49	3.82	57	5.55	4.41	81	5.20	6.09			
	25	1.00	2.70			0.00	46	3.01	3.99	59	4.99	4.62	87	4.15	6.55			
										61	4.49	4.80	91	3.28	7.00			
B5-P33	16	2.96	1.89	30	4.76	2.77	39	5.18	3.26	51	7.13	3.92	67	8.72	4.80	6 - 13	8 - 19	10 - 13
	19	2.25	2.10	32	4.44	2.94	41	4.57	3.36	54	6.60	4.06	71	6.87	5.22			
	20	1.72	2.31	35	3.59	3.12	44	4.02	3.61	55	6.08	4.24	77	6.34	5.64			
	22	1.32	2.49	36	3.06	3.33	45	3.49	3.82	57	5.55	4.41	81	5.20	6.09			
	25	1.00	2.70			0.00	46	3.01	3.99	59	4.99	4.62	87	4.15	6.55			
										61	4.49	4.80	91	3.28	7.00			
B6-P33	12	7.13	1.16	26	10.04	1.93	35	10.30	2.35	46	15.32	2.66	67	15.59	3.71	7 - 13	12 - 20	11 - 14
	15	5.28	1.26	30	7.40	2.31	39	7.93	2.70	52	12.42	3.05	77	10.57	4.62			
	16	4.20	1.58	32	6.34	2.49	44	6.34	3.05	55	10.04	3.40	81	8.45	5.08			
	19	3.30	1.61	35	5.55	2.66	46	4.65	3.36	57	8.98	3.61	87	6.87	5.53			
	20	2.69	1.96	36	4.70	2.87	49	3.99	3.61	61	7.13	3.96	91	5.28	6.02			
	22	2.01	2.17	39	3.99	3.05	51	3.41	3.82	67	5.28	4.41	97	42.00	6.48			
							54	2.80	3.99	71	3.91	4.90	102	3.35	6.93			
B8-P34	15	7.66	3.15	26	14.79	4.10	30	26.42	4.17	44	33.29	4.90	59	36.98	6.34	7 - 14	10 - 23	11 - 17
	16	4.99	3.78	29	10.57	4.66	32	20.87	4.66	45	29.06	5.29	61	33.02	6.76			
							35	16.38	5.15	46	25.10	5.71	67	23.51	7.88			
							36	12.68	5.67	49	20.61	6.44	71	14.79	9.28			
							39	9.51	6.20	51	16.38	6.76	77	8.98	10.68			
										54	12.68	7.35	81	4.41	11.90			
										55	9.77	7.88						

FLAT SPRAY, EXTERNAL MIX SET-UP (pressure feed)
SALIDA PLANA POR PRESION MEZCLA EXTERNA



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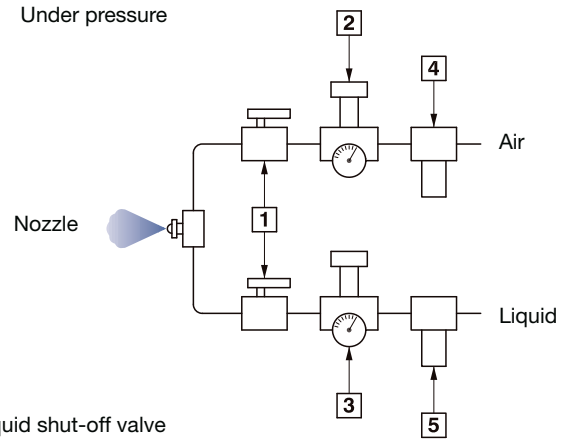
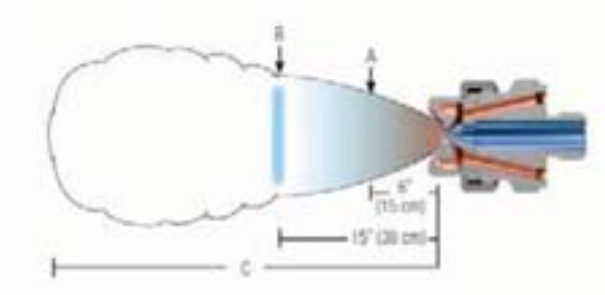
Esta boquilla es recomendada para pulverizar líquidos particularmente viscosos. La longitud del chorro se indica a varias distancias. La forma del chorro se indica en el esquema. Las secciones A- B – C indican el diámetro del chorro a varias distancias del orificio. Más allá de la distancia C, el chorro se vuelve turbulento.



1 Liquid shut-off valve
2 Air regulator and gauge
3 Liquid regulator and gauge
4 Air filter
5 Liquid stainer

Spray Set-up	Liquid Capacity (gallons per hour) and Air Capacity (standard cubic feet per minute)*															Spray Dimension		
	Liquid Pressure															A (in.)	B (in.)	C (ft.)
	3 psi			5 psi			10 psi			20 psi			40 psi					
	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm			
B1-P41	5	0.74	0.77	5	0.92	0.77	6	1.40	0.88	9	2.06	0.98	10	2.91	1.19	8 - 12	13 - 20	4 - 9
	6		0.88	6		0.88	9		0.98	10		1.19	16		1.58			
	7		0.96	9		0.98	10		1.19	16		1.58	26		2.17			
	9		0.98	10		1.19	12		1.40	20		1.89	36		2.77			
B2-P41	5	1.19	0.77	5	1.45	0.77	9	2.19	0.98	10	3.22	1.19	16	4.54	1.58	11 - 16	16 - 26	5 - 10
	9		0.98	10		1.19	10		1.19	20		1.89	20		1.89			
	10		1.19	16		1.58	20		1.89	30		2.49	30		2.49			
	16		1.58	20		1.89	30		2.49	36		2.77	36		2.77			
B3-P41	6	2.25	0.88	6	2.75	0.88	6	4.20	0.88	10	6.08	1.19	20	8.72	1.89	14 - 16	24 - 27	6 - 9
	7		0.96	9		0.98	9		0.98	12		1.40	26		2.17			
	9		0.98	9		1.09	10		1.19	16		1.58	30		2.49			
	10		1.19	10		1.19	12		1.40	203		1.89	36		2.77			
B4-P42	9	3.54	3.19	10	4.33	3.57	20	6.60	5.46	30	9.77	7.35	46	13.74	9.98	13 - 15	19 - 28	12 - 16
	10		4.55	16		4.55	30		7.35	41		9.10	61		12.60			
	16		5.46	26		6.44	36		8.23	51		10.85	77		15.05			
	20		6.44	30		7.35	41		9.10	61		12.60	81		15.93			
B5-P42	9	4.65	3.57	102	5.81	3.57	16	8.72	4.55	36	12.68	8.23	51	17.96	10.85	12 - 15	20 - 25	10 - 17
	16		4.55	20		5.46	26		6.44	46		9.98	67		13.30			
	20		5.46	26		6.44	36		8.12	57		11.55	87		16.63			
	26		6.44	30		7.35	41		9.10	61		12.60	97		18.38			
B6-P42	10	9.51	3.57	16	11.89	4.55	26	17.96	6.44	46	26.42	9.98	77	37.25	15.05	15-19	26-33	12 - 19
	16		4.55	20		5.46	30		7.35	51		10.85	87		16.63			
	20		5.46	30		7.35	41		9.10	71		14.18	97		18.38			
	26		6.44	36		8.23	46		9.98	81		15.93	102		7.00			
B7-P43	26	9.51	8.23	26	11.89	8.23	36	17.96	10.50	57	26.42	14.35				6 - 6	11 - 13	10 - 18
	30		9.10	30		9.10	41		11.55	61		15.58						
	36		10.50	36		10.50	46		12.43	67		16.80						
	41		11.55	41		11.55	51		13.30	71		18.20						
	46		12.43	46		12.43	57		14.35	77		19.78						
	51		13.30	51		13.30	61		15.58	81		21.00						
	61		15.58	61		15.58	71		18.20	91		23.98						
B8-P43	41	26.95	11.55	51	33.02	13.30	67	50.72	16.80	81	73.97	21.00				7 - 8	14 - 16	15 - 20
	46		12.43	57		14.35	71		18.20	87		22.40						
	51		13.30	61		15.58	77		19.78	91		23.98						
	57		14.35	67		16.80	81		21.00									
	61		15.58	71		18.20	87		22.40									
	67		16.80	77		19.78	91		23.98									
	71		18.20	81		21.00												

FLAT SPRAY, EXTERNAL MIX SET-UP (pressure feed)
SALIDA PLANA POR PRESION MEZCLA EXTERNA



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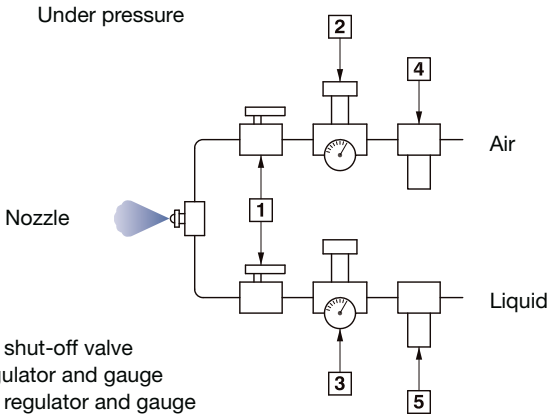
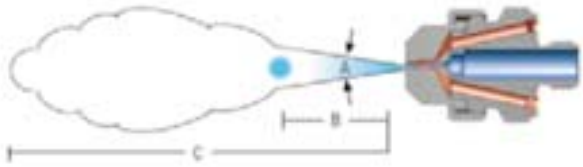


1 Liquid shut-off valve
2 Air regulator and gauge
3 Liquid regulator and gauge
4 Air filter
5 Liquid stainer

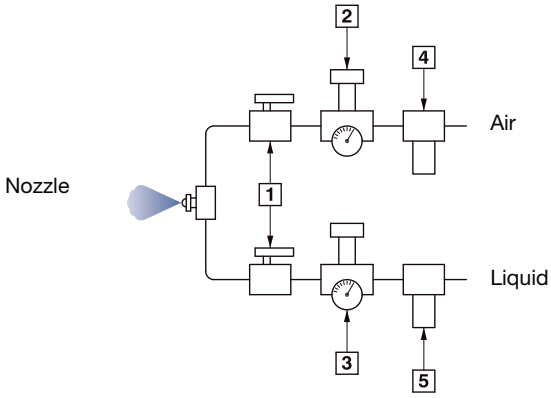
Spray Set-up	Liquid Capacity (gallons per hour) and Air Capacity (standard cubic feet per minute)															Spray Dimension		
	Liquid Pressure																	
	3 psi			5 psi			10 psi			20 psi			40 psi			A (in.)	B (in.)	C (ft.)
	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm			
B1-P44	3	0.74	0.88	51	0.92	0.92	10	1.40	1.09	20	2.06	1.59	41	2.91	2.58	3 - 6	9 - 11	3 - 8
	5		0.92	10		1.09	15		1.39	25		1.88	51		2.98			
	10		1.09	15		1.39	20		1.59	30		2.08	61		3.57			
	15		1.39	20		1.59	25		1.88	41		2.58	71		3.82			
	20		1.59	25		1.88	30		2.08	51		2.98	77		4.46			
	25		1.88	30		2.08	41		2.58	61		3.57	81		4.87			
	30		2.08	41		2.58	51		2.98	81		4.87	91		5.57			
B2-P44	5	1.19	0.92	10	1.45	1.09	15	2.19	1.39	25	3.22	1.88	46	4.39	2.87	3 - 6	8 - 12	3 - 10
	10		0.74	15		1.39	20		1.59	30		2.08	51		2.98			
	15		1.39	20		1.59	25		1.88	41		2.58	61		3.57			
	20		1.59	25		1.88	30		2.08	51		2.98	71		4.17			
	25		1.88	30		2.08	41		2.58	61		3.57	76		4.45			
	30		2.08	41		2.58	51		2.98	71		4.17	91		5.57			
	41		2.58	51		2.98	61		3.57	91		5.57	97		5.74			
B3-P44	10	2.25	1.09	15	2.75	1.39	20	4.20	1.59	36	6.08	2.38	51	8.72	2.98	5 - 6	9 - 14	4 - 13
	15		1.39	20		1.59	25		1.88	41		2.58	61		3.57			
	20		1.59	25		1.88	30		2.08	51		2.98	71		4.17			
	25		1.88	30		2.08	41		2.58	61		3.57	77		4.45			
	30		2.08	41		2.58	51		2.98	71		4.17	81		4.87			
	41		2.58	51		2.98	61		3.57	81		4.87	91		5.57			
	51		2.98	61		3.57	71		4.17	91		5.57	102		6.16			
B4-P45	10	3.54	2.98	15	4.33	3.57	20	6.60	4.06	36	9.77	6.23	46	13.74	7.42	5 - 6	10 - 14	5 - 16
	15		3.57	20		4.06	26		4.87	41		6.83	51		8.12			
	20		4.06	26		4.87	30		5.46	51		7.95	57		8.93			
	26		4.87	30		5.46	36		6.23	61		9.31	61		9.63			
	30		5.46	41		6.83	41		6.83	71		10.92	71		10.99			
	41		6.83	51		7.95	51		7.95	81		12.60	81		12.60			
	51		7.95	61		9.31	61		9.31	91		14.39	91		14.39			
B5-P45	10	4.65	2.98	20	5.81	4.06	26	8.72	4.87	41	12.68	6.83	51	17.96	8.12	6 - 7	10 - 14	7 - 19
	15		3.57	26		4.87	30		5.46	46		7.42	61		9.63			
	20		4.06	30		5.46	36		6.23	51		7.95	71		10.99			
	26		4.87	36		6.23	41		6.83	61		9.31	77		11.90			
	30		5.46	41		6.83	51		7.95	71		10.92	81		12.60			
	41		6.83	51		7.95	61		9.31	81		12.60	91		14.39			
	51		7.95	61		9.31	71		10.92	91		14.39	96		14.98			
B6-P45	15	9.51	3.57	26	11.89	4.87	36	17.96	6.23	46	26.42	7.42	57	37.25	8.93	6 - 8	10 - 15	9 - 19
	20		4.06	30		5.46	41		6.83	51		7.95	61		9.63			
	26		4.87	36		6.23	46		7.42	57		8.61	67		10.40			
	30		5.46	41		6.83	51		7.95	61		9.31	71		10.99			
	36		6.23	46		7.42	61		9.31	71		10.92	81		12.60			
	41		6.83	51		7.95	71		10.92	81		12.60	91		14.39			
	51		7.95	61		9.31	81		12.60	91		14.39	102		15.86			

FULL CONE, EXTERNAL MIX SET-UP (pressure feed)
CONO LLENO POR PRESION MEZCLA EXTERNA



B= Distance that the spray pattern remains constant, the pattern begins to vary past this point.
C= Maximum spray distance.

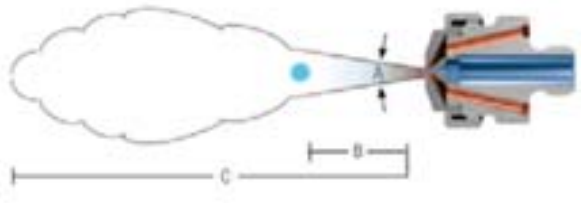
B= *Distancia en cuyo interior el ángulo se mantiene constante. Fuera de esta distancia el chorro se vuelve turbulento.*
C= *máxima distancia de la aspersión.*



1 Liquid shut-off valve
2 Air regulator and gauge
3 Liquid regulator and gauge
4 Air filter
5 Liquid stainer

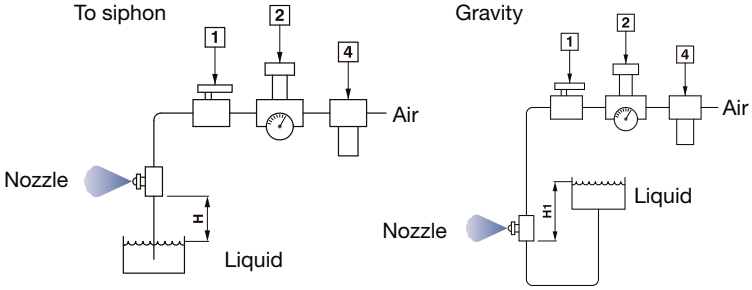
Spray Set-up	Liquid Capacity (gallons per hour) and Air Capacity (standard cubic feet per minute)*															Spray Dimension		
	Liquid Pressure																	
	3 psi			5 psi			10 psi			20 psi			40 psi			Spray Angle A (°)	B (in.)	C (ft.)
	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm	Air Press.	gph	scfm			
B1-P61	5.08	0.74	2.28	5.08	0.92	2.28	5.80	1.40	2.42	8.70	2.06	2.98	10.15	2.91	3.19	25 - 35	11 - 14	5 - 11
	5.80		2.42	5.80		2.42	8.70		2.98	10.15		3.19	15.95		4.03			
	7.25		2.73	7.25		2.73	10.15		3.19	15.95		4.03	26.11		5.15			
	8.70		2.98	10.15		3.22	12.33		3.54	20.31		4.52	36.26		6.06			
B2-P61	5.08	1.19	2.28	5.08	1.45	2.28	8.70	2.19	2.98	10.15	3.22	3.19	15.95	4.54	4.03	25 - 35	11 - 14	7 - 13
	8.70		2.98	10.15		3.22	10.15		3.19	20.31		4.52	20.31		4.52			
	10.15		3.22	15.95		4.03	20.31		4.52	30.46		5.53	30.46		5.53			
	15.95		4.03	20.31		4.55	30.46		5.53	36.26		6.06	36.26		6.06			
B3-P61	5.80	2.25	2.42	5.80	2.75	2.42	5.80	4.20	2.42	10.15	6.08	3.19	20.31	8.72	4.52	25 - 35	11 - 14	7 - 13
	7.25		2.73	8.70		2.98	8.70		2.98	12.33		3.54	26.11		5.15			
	8.70		2.98	9.43		3.12	10.15		3.19	15.95		4.03	30.46		5.53			
	10.15		3.22	10.15		3.22	12.33		3.54	203.05		4.52	36.26		6.06			
B4-P62	8.70	3.54	3.68	10.15	4.33	3.96	20.31	6.60	5.60	30.46	9.77	6.86	46.41	13.74	8.47	28 - 35	14 - 16	8 - 16
	10.15		3.96	15.95		4.97	30.46		6.86	40.61		7.91	60.92		9.70			
	15.95		4.97	26.11		6.34	36.26		7.49	50.76		8.86	76.87		10.89			
	20.31		5.60	30.46		6.86	40.61		7.91	60.92		9.70	81.22		11.20			
B5-P62	8.70	4.65	3.57	101.53	5.81	3.96	15.95	8.72	4.97	36.26	12.68	7.49	50.76	17.96	8.86	28 - 35	14 - 16	8 - 16
	15.95		4.55	20.31		5.60	26.11		6.34	46.41		8.47	66.72		10.15			
	20.31		5.46	26.11		6.34	36.26		7.49	56.56		9.35	87.02		11.59			
	26.11		6.44	30.46		6.86	40.61		7.91	60.92		9.70	97.18		12.25			
B6-P62	10.15	9.51	3.96	15.95	11.89	4.97	26.11	17.96	6.34	46.41	26.42	8.47	76.87	37.25	10.89	28 - 35	14 - 16	8 - 19
	15.95		4.97	20.31		5.60	30.46		6.86	50.76		8.86	87.02		11.59			
	20.31		5.60	30.46		6.86	40.61		7.91	71.07		10.47	97.18		12.25			
	26.11		6.37	36.26		7.49	46.41		8.47	81.22		11.20	101.53		12.53			

FULL CONE SET-UP (siphon/ gravity feed)
CONO LLENO POR SIFON O GRAVEDAD



B= Distance that the spray pattern remains constant, the pattern begins to vary past this point.
C= Maximum spray distance.

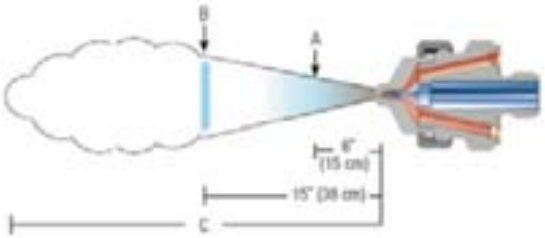
B= *Distancia en cuyo interior el ángulo se mantiene constante. Fuera de esta distancia el chorro se vuelve turbulento.*
C= *máxima distancia de la aspersión.*



1 Liquid shut-off valve
2 Air regulator and gauge
4 Air filter

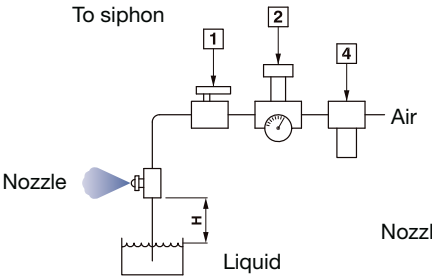
Spray Set-up	Atomizing Air		Liquid Capacity (gallons per hour)								Spray Dimensio at 8" Siphon Height		
			Gravity Head (in. H1)			Siphon Height (in. H)							
	Air Press. (psi)	Air Capacity (scfm)	18	12	6	4	8	12	24	36	Spray Angle A (°)	B (in.)	C (ft.)
B1-S11	10.15	0.40	0.40	0.34	0.29	0.23	0.18	0.14			18	11 - 14	6 - 8
	21.76	0.60	0.48	0.45	0.40	0.34	0.32	0.29	0.16				
	43.51	0.98	0.55	0.50	0.45	0.40	0.37	0.34	0.29	0.20			
	58.02	1.26	0.58	0.53	0.48	0.42	0.40	0.37	0.32	0.23			
B2-S11	10.15	0.47	0.63	0.55	0.45	0.40	0.32	0.21			18 - 19	12 - 17	7 - 10
	21.76	0.70	0.74	0.69	0.63	0.55	0.50	0.42	0.24				
	43.51	1.12	0.90	0.82	0.77	0.74	0.69	0.63	0.45	0.29			
	58.02	1.44	0.98	0.90	0.87	0.82	0.77	0.71	0.55	0.40			
B2-S12	10.15	0.81	0.66	0.61	0.53	0.42	0.37	0.29			18 - 20	12 - 17	8 - 13
	21.76	1.26	0.77	0.74	0.66	0.58	0.53	0.45	0.24				
	43.51	2.03	0.90	0.87	0.85	0.77	0.74	0.66	0.50	0.32			
	58.02	2.59	0.98	0.95	0.92	0.90	0.87	0.79	0.66	0.53			
B3-S12	10.15	0.68	1.19	1.06	0.90	0.55	0.48	0.37			21 - 22	15 - 20	10 - 15
	21.76	1.09	1.40	1.29	1.16	0.92	0.77	0.71	0.48				
	43.51	1.75	1.59	1.48	1.32	1.16	1.06	0.90	0.63	0.32			
	58.02	2.28	1.51	1.43	1.32	1.11	1.03	0.92	0.74	0.50			
B6-S14	21.76	2.03	5.81	5.26	4.31	3.25	2.77	2.19	0.74		17 - 19	18 - 23	12 - 18
	43.51	3.08	6.60	6.08	5.15	4.41	3.75	3.04	1.69	0.74			
	58.02	3.89	6.87	6.34	5.55	4.86	4.15	3.41	2.09	1.19			
	81.22	5.15	6.87	6.34	5.81	5.20	4.49	3.86	2.59	1.61			
B8-S15	21.76	5.04				7.13	5.81	4.36			20 - 22	20 - 25	22 - 27
	43.51	6.65				7.93	6.87	5.55					
	58.02	8.40		11.36	10.57	8.19	7.40	6.08	2.91				
	81.22	11.03	11.62	11.10	10.30	8.19	7.40	6.34	4.41	2.19			

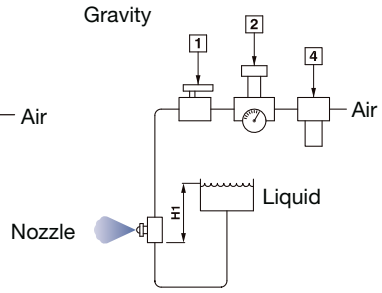
FLAT SPRAY, INTERNAL MIX SET-UP (siphon/ gravity feed)
SALIDA PLANA POR SIFON O GRAVEDAD



Spray dimensions A. B. and C illustrate the coverages at varying distances. Past the B dimension the pattern begins to vary.

La dimensión A-B-C indica la distancia máxima de proyección.
La forma del chorro se indica en el esquema. Las secciones A- B – C indican el diámetro del chorro a varias distancias del orificio. Más allá de la distancia C, el chorro se vuelve turbulento.





1 Liquid shut-off valve
2 Air regulator and gauge
4 Air filter

Spray Set-up	Atomizing Air		Liquid Capacity (gallons per hour)								Spray Dimensio at 8" Siphon Height		
			Gravity Head (in. H1)			Siphon Height (in. H)							
	Air Press. (psi)	Air Capacity (scfm)	18	12	6	4	8	12	24	36	A (in.)	B (in.)	C (ft.)
B3-S21	10.15	0.98	0.34	0.32	0.29	0.26	0.25	0.22	0.17	0.13	8 - 9	15	6 - 7
	21.76	1.51	0.32	0.29	0.26	0.24	0.23	0.21	0.17	0.14			
	29.01	1.75	0.22	0.2	0.18	0.15	0.13						
B4-S22	21.76	1.96	0.98	0.92	0.87	0.77	0.74	0.66	0.61	0.55	9 - 11	15 - 19	9 - 10
	29.01	2.28	0.9	0.87	0.82	0.74	0.71	0.69	0.63	0.58			
	43.51	3.05	0.74	0.71	0.66	0.63	0.58	0.55	0.5	0.45			
	58.02	3.85	0.5	0.48	0.42	0.4	0.34	0.32					
B5-S23	21.76	2.38	1.35	1.27	1.19	1	0.98	0.92	0.79	0.63	7 - 8	10 - 12	10 - 11
	29.01	2.73	1.29	1.24	1.16	0.95	0.9	0.85	0.77	0.61			
	43.51	3.61	0.9	0.85	0.79	0.58	0.53	0.45					
	50.76	4.1	0.58	0.53	0.45								
B5-S24	21.76	2.21	2.01	1.9	1.74	1.51	1.43	1.35	1.22	0.98	6 - 8	10 - 13	11
	29.01	2.56	2.01	1.93	1.8	1.56	1.51	1.45	1.32	1.11			
	43.51	3.36	1.69	1.61	1.51	1.32	1.19	1.08	0.87				
	50.76	3.85	1.11	0.98	0.85	0.69							

Operating principle

The liquid to be filtrated passes through a filter cartridge, deposits the suspended solid particles on the inner surface of the cartridge, and comes out with the desired filtration degree. The progressive deposit of suspended solids on the inner wall of the cartridge creates a difference in pressure between the inlet and outlet of the filter.

The differential pressure gauge detects the pressure drop, which, once the limit set has reached, it will send the relevant signal to the control panel. At this point, the automatic filter cartridge-cleaning cycle starts. The special design of the filter cartridges facilitates the passage of the particles smaller than the chosen filtration degree only and the removal of those withheld inside it.

The gear reduction unit, driven by the control unit, sets in motion the rotation of the scrapers blades or SS brushes carrier shaft, to remove the impurities that have stuck on filtering element.

The blades are available in PTFE + Stainless Steel and the brushes are available in Stainless Steel, or a special patented system, suitable for the elimination of fibres that are difficult to remove from the surface of the cartridge. All the dirt is then evacuated through a free-passage pneumatic or electric stainless steel drain valve fitted on the bottom of the filter.

The control panel that controls all the filter cleaning operations can also be adapted to special voltage values.

We set filter by default for the fully automatic cycle based on the settings made by the user (working times, pause times, pressure level on the differential pressure gauge).

In the case of the customer wishing to interface the filter controls with the main plant control panel, this can be achieved via remote access to meet the customers specification.

Special couplings on the filter body enable the cartridge to be backwashed manually at the end of the job.

Principio de funcionamiento

El líquido a filtrar atraviesa un cartucho filtrante depositando las suspensiones sólidas en la superficie interna del mismo cartucho y vuelve a salir con el grado de filtración deseado.

A causa del progresivo depósito en la pared interna del cartucho de los sólidos en suspensión, se crea una diferencia de presión entre la entrada y la salida del filtro. Este valor es detectado por un manómetro diferencial el cual, una vez alcanzado el límite establecido, se encargará de transmitir la señal al cuadro de control. En dicho momento se pone en marcha el ciclo de limpieza automático del cartucho filtrante.

La especial conformación de los cartuchos filtrantes agiliza el paso sólo de las partículas de dimensiones inferiores al grado de filtración elegido y la consecuente facilidad de remoción de aquellas retenidas.

El motorreductor, accionado desde la centralita, pone en rotación un árbol en el cual están montadas unas cuchillas que se encargan de despegar las impurezas acumuladas. Las mismas están disponibles, en acero inox + PTFE o en un sistema especial patentado, apto para la remoción de fibras que difícilmente pueden eliminarse de la superficie filtrante.

Toda la suciedad es eliminada a continuación mediante la apertura de una válvula de descarga en acero inox, para el paso total con mando neumático, ubicada en el fondo del filtro.

El panel de control, que gobierna todas las operaciones de limpieza del filtro, tiene la posibilidad de adaptarse incluso si poseevoltajes especiales.

Está predispuesto para el ciclo completamente automático operando según las regulaciones efectuadas por el usuario (tiempos de trabajo, tiempos de pausa, nivel de presión en el manómetro diferencial).

En el caso se desee interconectar el filtrocon los controles generales de la instalación, es posible convertir los mandos en remotos según las exigencias del cliente.

Especiales conexiones colocadas en el filtro permiten efectuar un contra lavado manual del cartucho al final del trabajo.

Advantages

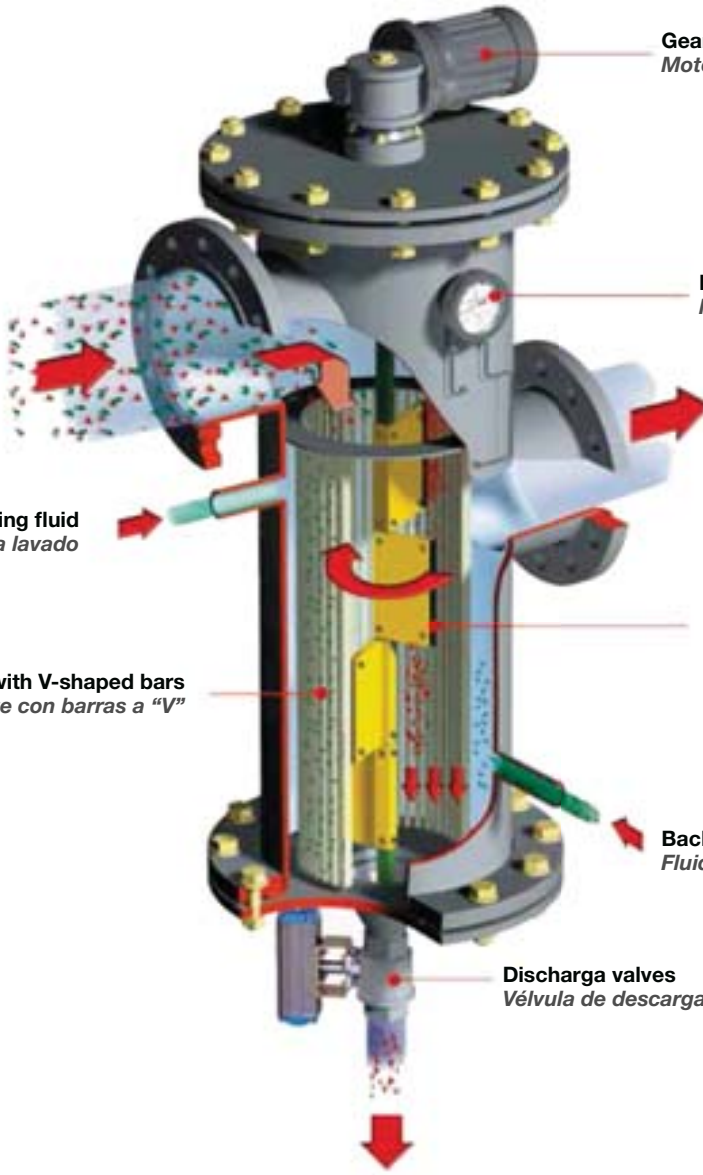
- Continuous Operation: no plant downtimes, which are usually necessary to clean ordinary static filters or backwash the filter itself.
- Low running costs, low electricity consumption, less maintenance costs for parts protected by the filter such as spray nozzles, seals etc.
- Elimination of impurities.
- Easier maintenance: few components subject to wear, simple disassembly procedure, possibility of scheduling maintenance in collaboration with our company.
- Compact size: small size to enable installation on any plant.
- Technical assistance: study of customized solutions and servicing.

Vantajas

- *Continuidad de funcionamiento: elimina las paradas en las instalaciones en las cuales se encuentran montados, debido a la limpieza de los comunes filtros estáticos de línea o a la limpieza en contra lavado del mismo filtro.*
- *Costos de funcionamiento moderados: baja potencia eléctrica empleada, menor mantenimiento en las piezas inferiores del filtro como boquillas pulverizadoras, juntas, etc.*
- *Eliminación de las impurezas.*
- *Mantenimiento simple: pocos componentes sujetos a desgaste, simplicidad en las operaciones de desmontaje, posibilidad de programar intervenciones de mantenimiento en colaboración con nuestra Sociedad.*
- *Dimensiones compactas: dimensiones reducidas para aplicaciones en cualquier instalación.*
- *Servicio técnico: estudio de soluciones personalizadas y asistencia.*

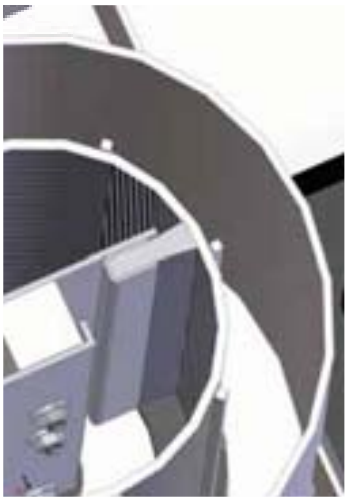
OPERATING DIAGRAM
ESQUEMA DE FUNCIONAMIENTO

Control unit
Centralità de mando



Scraper biade made of PTFE + stainless steel
Cuchilla raspadora an PTFE + acero INOX PATENTADO

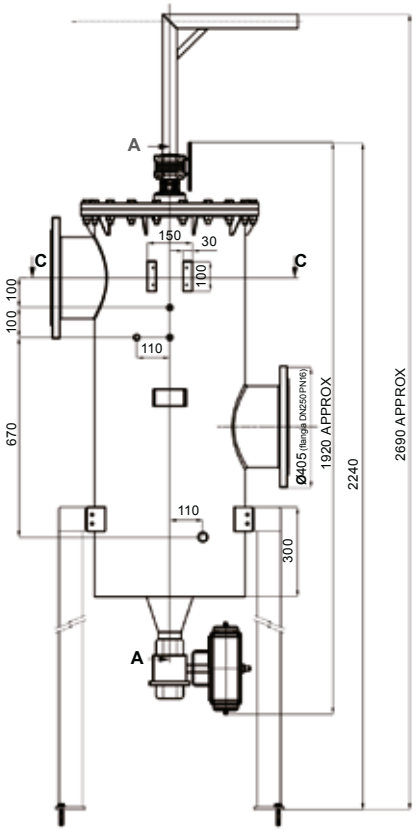
Clearing system btash made in ss
Sistema de limpieeza en cipillo inox:



HHF HIGHEST FLOW RATE FILTER
FILTRO HHF CAUDAL MÁS ALTO

General description
This electrically actuated air atomizing nozzle can The HHF self-cleaning filter is capable of filtering very large volumes of liquids, according on the amount and types of contaminants to be filtrated, with no plant downtimes.

Descripción general
posibilidad de filtrar muy grandes volúmenes de líquidos, de acuerdo con las cantidades y el tipo de contaminante que debe filtrarse, sin tener que efectuar paradas en la instalación.



PESO 280 Kg
WEIGHT
PESO

Technical Specifications	
Operating Pressure	101.53 PSI
Filtration Degrees	Da 50 µ in su / From 50 µ ownwards / A partir de 50 µ
Design Pressure	145.04 PSI
Maximum Operating Temperature	158°F
Inlet / Outlet Flanges	DN250
Discharge	Ø2” 1/2
Coupling for Back Washing Gear Motor	
Automatic Drain Valve	24 V a.c.
Differential Pressure Gauge	0 ÷ 10.15 PSI
Control Unit	230/400 V - 3 FASI / PHASE / FASES - 50 HZ

Special versions are studied for out of standard characteristics, kind apply by filling in application form at the end of catalog. Special versions are available for cleaning by hand-wheel drive.

Materials

The filter body as well as all the parts that are exposed to the liquid to be filtered are AISI 304L stainless steel made or AISI 316 steel on request. The seals are Viton and EPDM. Other material on request.

Filter cartridge

According to the type of liquid and contaminating material different models of filter cartridge can be fitted :
- with radial arranged V-shaped bars
- with punched holes from the inside of the cartridge

Flow rate

Maximum flow rates (m3/h) values determined with a pressure drop of 0.2-0.3 barg, with different types of filter cartridges.

Estan disponibles versiones especiales con caracteristicas bajo pedido, rellenando la ficha de recogida de datos que encontrarán al final del catálogo. Se fabrican versiones especiales con un sistema de limpieza manual con volante.

Construcción

Los materiales del cuerpo del filtro, como todas las partes que están en contacto con el líquido a filtrar, son de acero inox AISI 304L, sobre pedido incluso de acero AISI 316. Juntas de Viton y EPDM. Otros materiales sobre pedido.

Cartucho filtrante

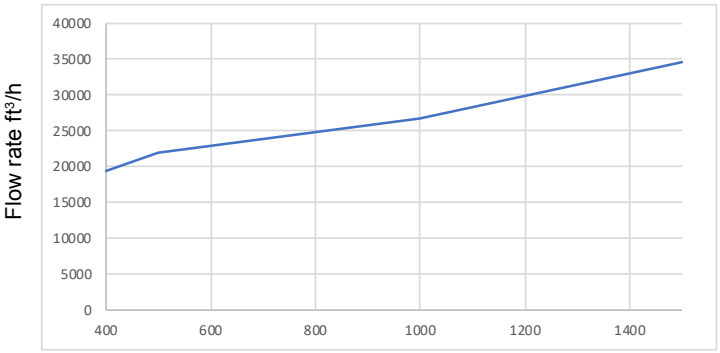
Se pueden montar dos modelos de cartuchos filtrantes en base al líquido y al contaminante a filtrar:
- *con barras en "V" colocadas circunferencialmente*
- *con agujeros, que funcionan desde el interior del cartucho*

Caudales

Valores de caudal máx. en m3/h determinados con pérdida de carga de 0,2/0,3 barg, con diferentes tipos de cartuchos filtrantes.

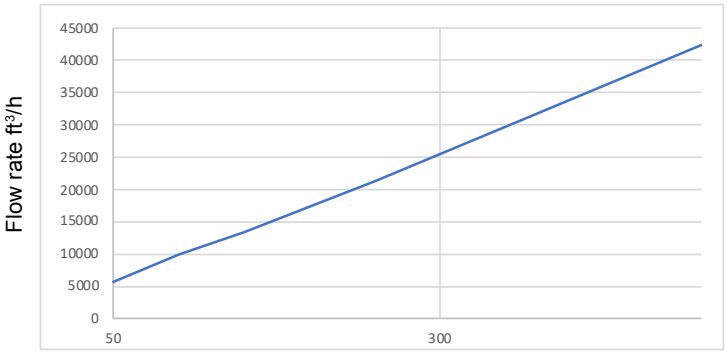
FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID PUNCHED HOLE

Data test with H_2O at 20°C



FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID VEE BARS

Data test with H_2O at 20°C

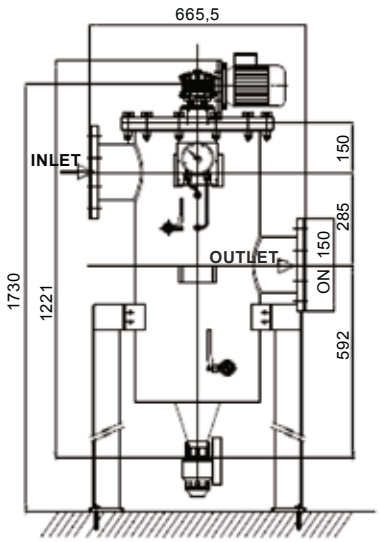


FLOW RATE MAX WITH CLEAN WATER																	
Type of Filter	**Surface area of cartridge (dm2)**	1500 µ 11 mesh		1000 µ 18 mesh		500 µ 35 mesh		400 µ 40 mesh		250 µ 60 mesh		150 µ 100 mesh		100 µ 150 mesh		50 µ 400 mesh	
		free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)
HHF punched holes	113	32.4% empty on full	34608 .41	22% empty on full	26839 .17	10% empty on full	21895 .11	6.5% empty on full	19423 .09								
HHF Vee bars	113					33% empty on full	42377 .64			20% empty on full	21188 .82	13% empty on full	13419 .59	9% empty on full	9888 .116	4.7% empty on full	5650. 352

HF HIGH FLOW RATE FILTER
FILTRO HF ALTO CAUDAL

General description
The HF self-cleaning filter is capable of filtering large volumes of liquids, according on the amount and types of contaminants to be filtrated, with no plant downtimes.

Descripción general
El filtro autolimpiante HF tiene la posibilidad de filtrar grandes volúmenes de líquidos, de acuerdo con las cantidades y el tipo de contaminante que debe filtrarse, sin tener que efectuar paradas en la instalación.



PESO 150 Kg
WEIGHT
PESO

Technical Specifications	
Operating Pressure	101.526 psi
Filtration Degrees	Da 50 µ in su / From 50 µ ownwards / A partir de 50 µ
Design Pressure	145.038 psi
Maximum Operating Temperature	70°C
Inlet / Outlet Flanges	DN150
Discharge	Ø2”
Coupling for Back Washing Gear Motor	
Automatic Drain Valve	24 V a.c.
Differential Pressure Gauge	0 ÷ 10.1526 psi
Control Unit	230/400 V - 3 FASI / PHASE / FASES - 50 HZ
Coupling for Back Washing	valvole a sfera manuale / manual ball valves / válvulas de esfera manual

Special versions are studied for out of standard characteristics, kind apply by filling in application form at the end of catalog. Special versions are available for cleaning by hand-wheel drive.

Materials

The filter body as well as all the parts that are exposed to the liquid to be filtered are AISI 304L stainless steel made or AISI 316 steel on request. The seals are Viton and EPDM. Other material on request.

Filter cartridge

According to the type of liquid and contaminating material different models of filter cartridge can be fitted :
- with radial arranged V-shaped bars
- with punched holes from the inside of the cartridge

Flow rate

Maximum flow rates (m3/h) values determined with a pressure drop of 0.2-0.3 barg, with different types of filter cartridges.

Estan disponibles versiones especiales con caracteristicas bajo pedido, rellenando la ficha de recogida de datos que encontrarán al final del catálogo. Se fabrican versiones especiales con un sistema de limpieza manual con volante.

Construcción

Los materiales del cuerpo del filtro, como todas las partes que están en contacto con el líquido a filtrar, son de acero inox AISI 304L, sobre pedido incluso de acero AISI 316. Juntas de Viton y EPDM. Otros materiales sobre pedido.

Cartucho filtrante

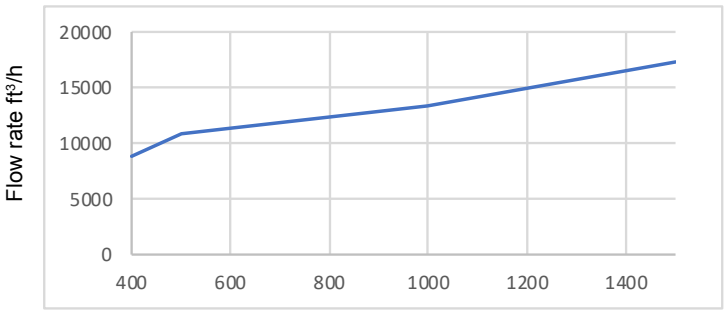
Se pueden montar dos modelos de cartuchos filtrantes en base al líquido y al contaminante a filtrar:
- *con barras en "V" colocadas circunferencialmente*
- *con agujeros, que funcionan desde el interior del cartucho*

Caudales

Valores de caudal máx. en m3/h determinados con pérdida de carga de 0,2/0,3 barg, con diferentes tipos de cartuchos filtrantes.

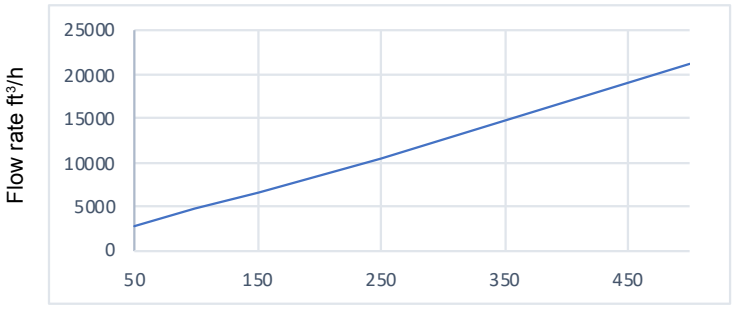
FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID PUNCHED HOLE

Data test with H_2O at 20°C



FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID VEE BARS

Data test with H_2O at 20°C

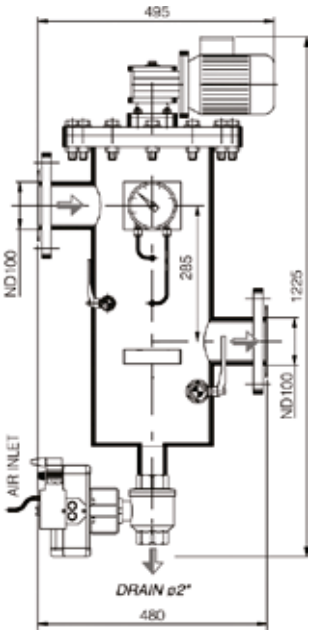


FLOW RATE MAX WITH CLEAN WATER															
Type of Filter	**Surface area of cartridge (dm2)**	1500 µ 11 mesh		1000 µ 18 mesh		500 µ 35 mesh		400 µ 40 mesh		250 µ 60 mesh		150 µ 100 mesh		100 µ 150 mesh		50 µ 400 mesh	
		free passage		flow rate (ft ³/h)		free passage		flow rate (ft ³/h)		free passage		flow rate (ft ³/h)		free passage		flow rate (ft ³/h)	
HHF punched holes	55	32.4% empty on full	17304 .20	22% empty on full	13419 .59	10% empty on full	10947 .56	6.5% empty on full	8828 .675								
HHF Vee bars	55					33% empty on full	21188 .41			20% empty on full	10594 .41	13% empty on full	6709 .793	9% empty on full	4944 .058	4.7% empty on full	2825. 176

MF MEDIUM FLOW RATE FILTER
FILTRO MF MEDIO CAUDAL

General description
The HF self-cleaning filter is capable of filtering large volumes of liquids, according on the amount and types of contaminants to be filtrated, with no plant downtimes.

Descripción general
El filtro autolimpiante MF tiene la posibilidad de filtrar volumenes medios de líquidos, de acuerdo con las cantidades y el tipo de contaminante que debe filtrarse, sin tener que efectuar paradas en la instalación.



PESO 95 Kg
WEIGHT
PESO

Technical Specifications	
Operating Pressure	145.038 psi
Filtration Degrees	Da 50 µ in su / From 50 µ ownwards / A partir de 50 µ
Design Pressure	217.557 psi
Maximum Operating Temperature	158°F
Inlet / Outlet Flanges	DN100
Discharge	Ø2”
Coupling for Back Washing Gear Motor	
Automatic Drain Valve	24 V a.c.
Differential Pressure Gauge	0 ÷ 10.1526 psi
Control Unit	230/400 V - 3 FASI / PHASE / FASES - 50 HZ
Coupling for Back Washing	valvole a sfera manuale / manual ball valves / válvulas de esfera manual

Special versions are studied for out of standard characteristics, kind apply by filling in application form at the end of catalog. Special versions are available for cleaning by hand-wheel drive.

Materials

The filter body as well as all the parts that are exposed to the liquid to be filtered are AISI 304L stainless steel made or AISI 316 steel on request. The seals are Viton and EPDM. Other material on request.

Filter cartridge

According to the type of liquid and contaminating material different models of filter cartridge can be fitted :
- with radial arranged V-shaped bars
- with punched holes from the inside of the cartridge

Flow rate

Maximum flow rates (m3/h) values determined with a pressure drop of 0.2-0.3 barg, with different types of filter cartridges.

Estan disponibles versiones especiales con caracteristicas bajo pedido, rellenando la ficha de recogida de datos que encontrarán al final del catálogo. Se fabrican versiones especiales con un sistema de limpieza manual con volante.

Construcción

Los materiales del cuerpo del filtro, como todas las partes que están en contacto con el líquido a filtrar, son de acero inox AISI 304L, sobre pedido incluso de acero AISI 316. Juntas de Viton y EPDM. Otros materiales sobre pedido.

Cartucho filtrante

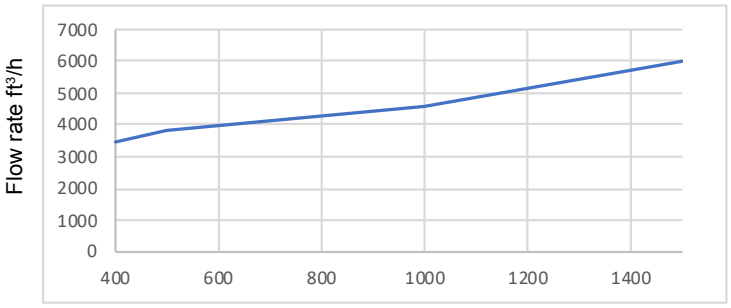
Se pueden montar dos modelos de cartuchos filtrantes en base al líquido y al contaminante a filtrar:
- *con barras en "V" colocadas circunferencialmente*
- *con agujeros, que funcionan desde el interior del cartucho*

Caudales

Valores de caudal máx. en m3/h determinados con pérdida de carga de 0,2/0,3 barg, con diferentes tipos de cartuchos filtrantes.

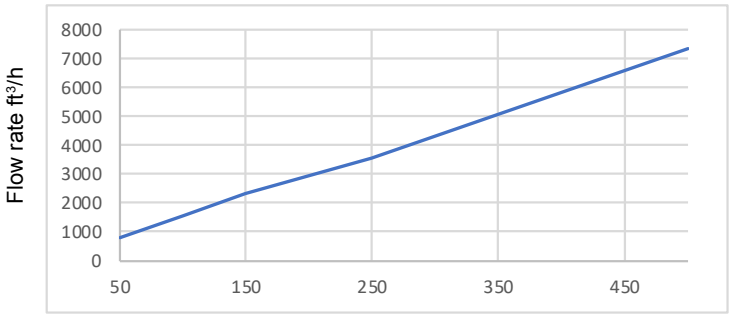
FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID PUNCHED HOLE

Data test with H_2O at 20°C



FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID VEE BARS

Data test with H_2O at 20°C

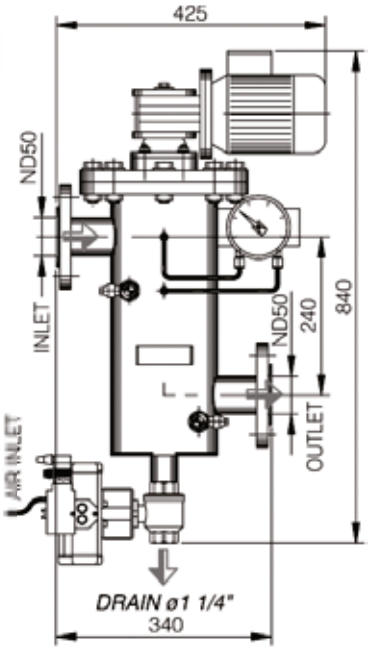


FLOW RATE MAX WITH CLEAN WATER															
Type of Filter	**Surface area of cartridge (dm2)**	1500 µ 11 mesh		1000 µ 18 mesh		500 µ 35 mesh		400 µ 40 mesh		250 µ 60 mesh		150 µ 100 mesh		100 µ 150 mesh		50 µ 400 mesh	
		free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)
HHF punched holes	19	32.4% empty on full	6003 .50	22% empty on full	4590 .91	10% empty on full	3813 .988	6.5% empty on full	3460 .84								
HHF Vee bars	19					33% empty on full	7345 .46			20% empty on full	3531 .47	13% empty on full	2330 .77	9% empty on full	1589 .16	4.7% empty on full	812 .24

LF LOW FLOW RATE FILTER
FILTRO LF BAJO CAUDAL

General description
The HF self-cleaning filter is capable of filtering large volumes of liquids, according on the amount and types of contaminants to be filtrated, with no plant downtimes.

Descripción general
El filtro autolimpiante MF tiene la posibilidad de filtrar volumenes medios de líquidos, de acuerdo con las cantidades y el tipo de contaminante que debe filtrarse, sin tener que efectuar paradas en la instalación.



PESO 55 Kg
WEIGHT
PESO

Technical Specifications	
Operating Pressure	145.038 psi
Filtration Degrees	Da 50 µ in su / From 50 µ ownwards / A partir de 50 µ
Design Pressure	217 .557 psi
Maximum Operating Temperature	158°F
Inlet / Outlet Flanges	DN50
Discharge	Ø1” 1/4”
Coupling for Back Washing Gear Motor	
Automatic Drain Valve	24 V a.c.
Differential Pressure Gauge	0 ÷ 10.1526 psi
Control Unit	230/400 V - 3 FASI / PHASE / FASES - 50 HZ
Coupling for Back Washing	valvole a sfera manuale / manual ball valves / válvulas de esfera manual

Special versions are studied for out of standard characteristics, kind apply by filling in application form at the end of catalog. Special versions are available for cleaning by hand-wheel drive.

Materials

The filter body as well as all the parts that are exposed to the liquid to be filtered are AISI 304L stainless steel made or AISI 316 steel on request. The seals are Viton and EPDM. Other material on request.

Filter cartridge

According to the type of liquid and contaminating material different models of filter cartridge can be fitted :
- with radial arranged V-shaped bars
- with punched holes from the inside of the cartridge

Flow rate

Maximum flow rates (m3/h) values determined with a pressure drop of 0.2-0.3 barg, with different types of filter cartridges.

Estan disponibles versiones especiales con caracteristicas bajo pedido, rellenando la ficha de recogida de datos que encontrarán al final del catálogo. Se fabrican versiones especiales con un sistema de limpieza manual con volante.

Construcción

Los materiales del cuerpo del filtro, como todas las partes que están en contacto con el líquido a filtrar, son de acero inox AISI 304L, sobre pedido incluso de acero AISI 316. Juntas de Viton y EPDM. Otros materiales sobre pedido.

Cartucho filtrante

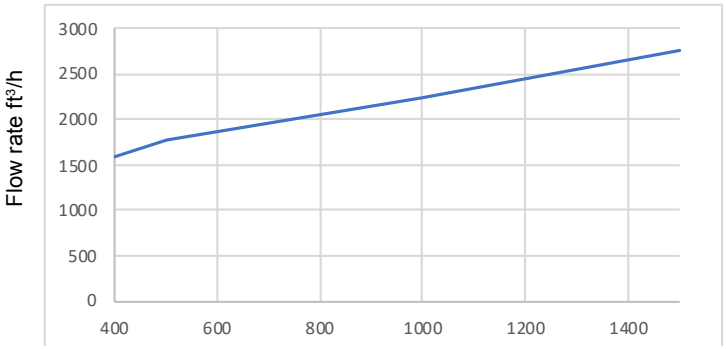
Se pueden montar dos modelos de cartuchos filtrantes en base al líquido y al contaminante a filtrar:
- *con barras en "V" colocadas circunferencialmente*
- *con agujeros, que funcionan desde el interior del cartucho*

Caudales

Valores de caudal máx. en m3/h determinados con pérdida de carga de 0,2/0,3 barg, con diferentes tipos de cartuchos filtrantes.

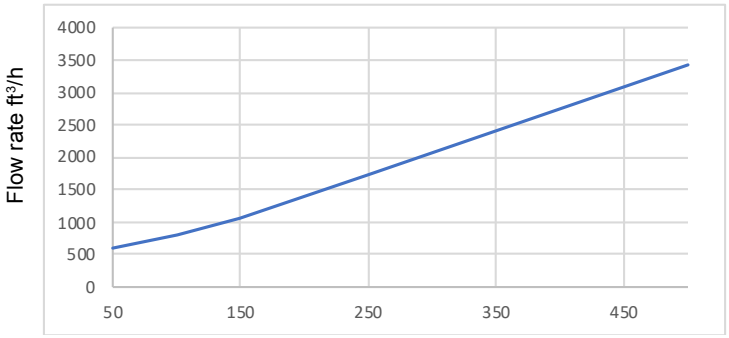
FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID PUNCHED HOLE

Data test with H_2O at 20°C



FLOW MAX WITH 1 GR/LT
OF SUSPENDED SOLID VEE BARS

Data test with H_2O at 20°C



FLOW RATE MAX WITH CLEAN WATER

Type of Filter	Surface area of cartridge (dm2)	1500 µ 11 mesh		1000 µ 18 mesh		500 µ 35 mesh		400 µ 40 mesh		250 µ 60 mesh		150 µ 100 mesh		100 µ 150 mesh		50 µ 400 mesh	
		free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)	free passage	flow rate (ft ³/h)
HHF punched holes	9	32.4% empty on full	2754 .55	22% empty on full	2224 .83	10% empty on full	1765 .74	6.5% empty on full	1589 .16								
HHF Vee bars	9					33% empty on full	3425 .53			20% empty on full	1730 .42	13% empty on full	1059 .44	9% empty on full	812 .24	4.7% empty on full	600 .35

FILTERS REQUIRED INFORMATION FORM

SIG. *Mr/Ms/Mrs Sr.*	MANSIONE *POSITION ENCARGADO DE*
AZIENDA *COMPANY EMPRESA*	
INDIRIZZO *ADDRESS DIRECCIÓN*	CAP *POSTAL CODE CP*
CITTÀ *TOWN CIUDAD*	PROVINCIA *COUNTRY PROVINCIA*
TELEFONO *PHONE TELÉFONO*	FAX
E-Mail	

PORTATA RICHIESTA / *DESIRED FLOW RATE / CAUDAL*	m^3/h	TEMPERATURA ESERCIZIO / *OPERATING TEMPERATURE / TEMPERATURA EJERCICIO*	°C
PRESSIONE DI ESERCIZIO / *WORKING PRESSURE / PRESIÓN DE TRABAJO*	BAR		
LIQUIDO DA FILTRARE / *TYPE OF FLUID / LIQUIDO A FILTRAR*		PESO SPECIFICO / *SPECIFIC WEIGHT / PESO ESPECIFICO*	gr/lt
SOSTANZE SOSPESE / *SUSPENDED SOLID / SUSTANCIAS SUSPENDIDAS* (natura / *nature / natura*)		QUANTITÀ / *QUANTITY / CANTIDAD*	gr/lt
DIMENSIONI SOSTANZE SOSPESE / *SUSPENDED SOLID DIMENSION / DIMENSION SUSTANCIAS SUSPENDIDAS*	µm	GRADO DI FILTRAZIONE / *FILTRATION DEGREE / GRADO DE FILTRACION*	µm
VALORE / *VALUE / VELOR* Ph		PRESENZA SOSTANZE CORROSIVE / *PRESENCE OF CORROSIVE SUBSTANCES / PRESENCIA SUSTANCIAS CORROSIVAS*	
PRESENZA ANALISI ACQUE / *PRESENCE WATER ANALYSIS / PRESENCIA ANALISIS AGUA* ☐ SI *YES SI* ☐ NO *NO NO*		SE SI, ALLEGARE / *IF YES, ENCLOSE / EN CASO AFIRMATIVO INCLUIR*	
PRESENZA UGELLI DA PRESERVARE / *PRESENCE OF NOZZLES TO BE PROTECTED / PRESENCIA BOQUILLAS A PRESERVAR* ☐ SI *YES SI* ☐ NO *NO NO*		Ø FORO / *ORIFICE / AGUJERO*	µm
EVENTUALI NORME COSTRUTTIVE / *CONSTRUCTION RULES / EVENTUALES NORMAS DE CONSTRUCCION*			
ENERGIA ELETTRICA DISPONIBILE / *ELECTRICAL POWER / ENERGIA ELECTRICA DISPONIBLE*	V	ARIA COMPRESSA DISPONIBILE / *COMPRESSED AIR AVAILABLE / AIRE COMPRIMIDO DISPONIBLE*	BAR
QUADRO DI CONTROLLO / *CONTROL PANEL / CUADRO DE CONTROL* ☐ SI *YES SI* ☐ NO *NO NO*		TIPO / *TYPE / TIPO*	
VALVOLA DI SCARICO TIPO / *PURGIN VALVE / VALVULA DE PURGA TIPO* ☐ PNEUMATICA *PNEUMATIC NEUMATICA* ☐ ELETTRICA *ELECTRICAL ELECTRICA*		MANOMETRO DIFFERENZIALE / *DIFFERENTIAL PRESSURE GUAGE / MENOMETRO DEFERENCIAL* ☐ SI *YES SI* ☐ NO *NO NO*	

EVENTUALE APPLICAZIONE IN AREA IDENTIFICATA ATEX / *APPLICATION IN ATEX ZONE, PLEASE SPECIFY / EVENTUALES APLICACION EN AREA DIENTIFICADA ATEX*

PARTICOLARI RICHIESTE E/O ESIGENZE / *PARTICULAR NEEDS AND REQUIREMENTS / EVENTUALES EXIGENCIAS O REQUERIMIENTOS*

EVENTUALE SCHEMA O DISEGNO / *INSTALLATION PLAN OR DRAWING / ESQUEMA O DIBUJO, EN SU CASO*

Edition 10/2019 - Rev. 0

Amerispray

Uni-Spray Systems Inc.

Global Partnership

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