XA

Low Flow Air Atomizing

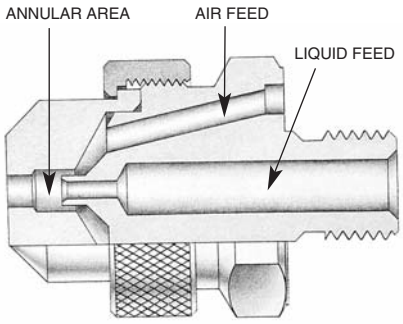
The XA nozzle system uses the energy in compressed air to produce highly atomized sprays at low flow rates. There are many interchangeable components that can be assembled to achieve a variety of spraying objectives.

SPRAY SET-UPS

XA nozzles produce eight distinctly different types of sprays, depending on which interchangeable air and fluid caps are selected. The spray type and flow rate are determined by the "set-up"—a specific combination of one air cap and one fluid cap.

Internal Mix Set-ups

Liquid and air streams meet within the nozzle and are mixed together and expelled through the same orifice(s). This internal mixing means the streams are not independent; a change in air flow will affect the liquid flow. This makes precise metering of the liquid more difficult than with an External Mix Set-up. Internal Mix Set-ups are able to produce the finest atomization of any of the XA set-ups, but they are generally not suitable for use with liquids which have a viscosity that is above 200 centipoise.

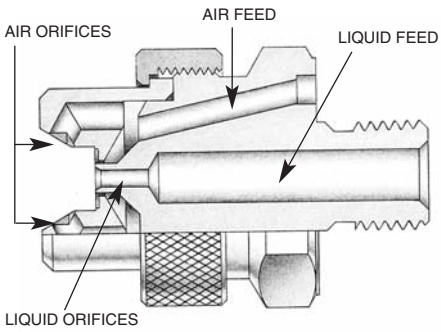


Cutaway View: Internal Mix Set-up

External Mix Set-ups

The air and liquid streams exit the nozzle independently and are combined and mixed outside of the nozzle. Because there is no connection between the air and liquid lines within the nozzle, the air and liquid flow rates can be controlled independently, allowing precise metering of the liquid. The atomization can be controlled by adjusting the air flow rate—more air produces finer atomization. In most cases these set-ups do not atomize as finely as Internal Mix Set-ups.

External Mix Set-ups may be used with liquids having a viscosity above 200 centipoise and for abrasive suspensions. BETE Applications Engineers can provide guidance for spraying high viscosity liquids.



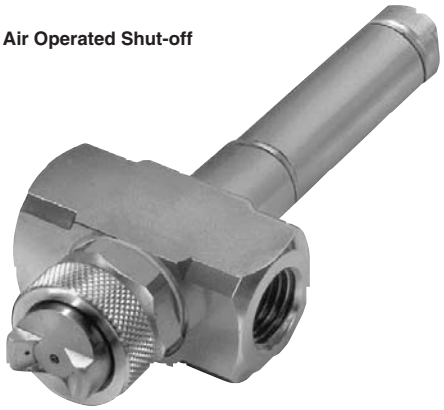
Cutaway View: External Mix Set-up

Siphon Set-ups

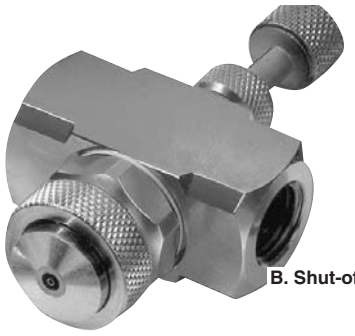
Internal and External Mix Set-ups require the liquid to be supplied to the nozzle under pressure from a municipal water supply, pump, or pressure pot. Siphon Set-ups use the flow of compressed air within the nozzle to siphon liquid from a container. Siphon Set-ups are frequently used for spraying additives from a container without the use of a pump. They provide the

A. End Plug

E. Air Operated Shut-off



D. Clean-out/Shut-off



B. Shut-off

Bold letters (A, B, C, D, E, F) refer to hardware assemblies shown on p. 78.

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

lowest flow rates available in the XA series (as low as 0.38 L/hr). They are generally not suitable for use with liquids having a viscosity above 200 centipoise.

By supplying the liquid under pressure, SR Set-ups may be used with liquids having a viscosity above 200 centipoise. In this case, the liquid flow rate is regulated by the fluid cap, and can be determined by using the EF chart for the specific fluid cap.

BASIC OPERATION

The basic XA nozzle assembly consists of a body, a spray set-up, and a "hardware assembly" that can provide shut-off and clean-out capabilities.

Non-Automatic Operation

The **XA00 Square Body** is the basic component of a non-automatic XA nozzle. Air and liquid feeds are located at opposite ends, perpendicular to the spray.

The **XA03 Body** has air and liquid feeds on one side, perpendicular to the spray axis.

The **XA05 Body** has air and liquid inlets located in-line with the spray. *Hardware assemblies cannot be used with the XA05 body.*

Hardware Assemblies for Non-Automatic Operation

A. Plug. The minimum option hardware assembly required for XA operation. Provides neither clean-out nor shut-off.

B. Shut-off. Turning the knurled knob will stop the flow of liquid to the nozzle. Should not be used to meter the flow of liquid.

C. Clean-out. Pressing the spring-loaded plunger will force a small dia-meter rod through the liquid orifice, cleaning any obstruction. Useful for intermittent spraying of a liquid that may dry in the orifice when not in use.

D. Clean-out/Shut-off. Combines functions of hardware assemblies B and C in one unit.


PR Air Cap


Fluid Cap


FF Air Cap


SR Air Cap


ER Air Cap


EF Air Cap

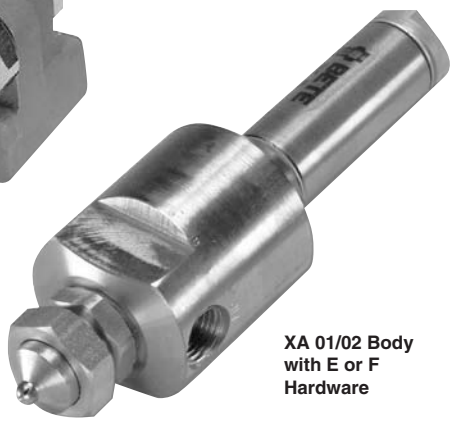

XW Air Cap


PF Air Cap

XA00 Body
with C Hardware


XA05 Body


XA03 Body


XA 01/02 Body
with E or F
Hardware

XA Components & Options

Spray Set-up

Air Caps

ER

SF

SR

PR

PF

AD

EF

FF

XW

Fluid Cap

Front Gasket

E

F

Replaceable E or F Tip Assembly

Body Styles and Seals

XA 00 - Standard

Rear Gasket

XA 03 - Spray perpendicular to parallel inlets

XA 01

XA 02

XA 10

XA 10/11 Bodies:
Low profile, built-in cylinder
XA10 – Separate atomizing and cylinder air inlets
XA11 – Combined atomizing and cylinder air inlet

XA 11

XA 05 - Spray parallel to parallel inlets

XA 06
(4-5 spray setups)
Parallel inlets

XA 07 - Spray perpendicular to 1/8" parallel inlets

XA 08 - Directional spray, 2 nozzle spray set-ups

XA 12
Spray parallel to parallel inlets. With mounting holes.

Mounting Bracket

Thin Wall Mount Lock Nut

Thick & Thin Wall Mounting Adapter

Thin Wall Mounting Gasket

Hardware Assemblies

A End Plug

B Shut-off

C** Clean-out

D** Clean-out/Shut-off

Replaceable E or F Tip Assembly

E

F

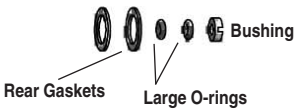
Adapter

E Air-operated Shut-off

Rear Gasket

F** Air-operated Clean-out/Shut-off

Seal Kit: 39572



Replaceable Components and Gaskets

Seal Kit	Thick & Thin Wall Mount Adapter
Front Gasket	Thin Wall Lock Nut
Rear Gasket	Thin Wall Mounting Gasket
Body Seal	Mounting Bracket
Cap Nut	
Adapter	

E - Replacement Tip
F - Replacement Tip**

**Specify fluid cap

TO ORDER

Spray Set-up Number

1/4 XA 01 PR 250 E 01 12

*For extensions, A hardware is standard; E and F hardware may be provided on an application-specific basis.

Sizes and Series	1/8"B, 1/4"B, 1/2"B - BSP 1/8", 1/4", 1/2" - NPT
Body Styles	00 01 02 03 05 06 07 08 10 11 12
Air Cap Style	PR FF AD XW PF EF SR SF ER
Extension Size*	12"
Mounting Hardware	01 02 03
Hardware Assemblies	A B C D E F
Combination Number	

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

AIR ATOMIZING

AUTOMATIC OPERATION

For critical applications which require automatic, no-drip, or high-speed spray shut-off, the XA can be supplied with an air-cylinder-operated shut-off or clean-out/shut-off. These air cylinders provide virtually instantaneous liquid shut-off at rates of up to 180 cycles per minute. *The air cylinders require a minimum of 5.5 bar to run that fast.*

Bodies for Automatic Operation

The **XA01, XA02, XA10, and XA11 Round Bodies** are rugged, highly reliable, and well-suited to the rigors of high-cycle automatic operation. They have been designed to simplify the feed piping required for installing automatic nozzles by providing a constant location for the air inlet piping. With their neat, professional appearance, they are particularly recommended for OEM applications.

The **XA01 Round Body** has one inlet for air and one for liquid. Because the air inlet supplies air for both cylinder movement and liquid atomization, spraying during start-up and shut-off is not as crisp and precise as with the XA02. *The XA01 body cannot be used with atomizing air pressure under 2 bar.*

The **XA02 Round Body** has two inlets for air and one inlet for liquid. One of the air inlets supplies the cylinder and the other supplies atomizing air. The XA02 body must be used when the air cylinder operates at a different pressure from the atomizing air or where the atomizing air is supplied below 2 bar. *NOTE: The XA00 Square and XA03 Bodies used for non-automatic operation can also be used, with hardware assemblies E or F, for automatic operation. Special design features allow field upgrading to automatic operation.*

The **XA10 and XA11 Bodies** have a built in air-operated cylinder. The integral cylinder provides a smaller profile for use where space is limited.

Hardware Assemblies for Automatic Operation

E. Air-Operated Shut-off. Removal of air pressure to the cylinder causes a spring-loaded poppet valve actuator to shut off liquid flow.

F. Air-Operated Clean-out/Shut-off. Operation similar to E, but includes a clean-out needle.

SOLENOID VALVES

Electrically operated solenoid valves can be used to control the operation of any XA nozzle. BETE can supply solenoid valves matched to your specific application.

Solenoids for Automatic XA Nozzles.

A 3-way, quick-exhaust solenoid valve is required to operate the E or F hardware assembly. The valve is located in the line that supplies air to the cylinder, as close to the nozzle as possible. Independent control of the atomizing air of an XA02 or square body requires an additional 2-way solenoid valve.

Solenoids for Non-Automatic XA Nozzles.

Two-way solenoid valves can be used to stop and start the flow of air and liquid to any non-automatic XA nozzle.

FILTERS, REGULATORS AND STRAINERS

For optimum reliability, every XA nozzle should have a strainer and regulator in the liquid feed line and a filter and regulator in the air feed line. Every XA nozzle with a Siphon Feed Set-up should have a filter and regulator in the air line. The size and type of each of these components depends on the application, and can be determined by your BETE sales representative. BETE maintains an inventory of filters, strainers, and regulators that can be supplied with your XA nozzle to ensure reliable operation. These components can be purchased individually or in kit form.

Simple piping and robust design describe this multiple nozzle XA lance.

The XA06 manifold body can be fitted with up to five nozzle setups and is often used for humidification of large areas.

Corrosion-resistant XA in PVC

SPRAY EXTENSIONS

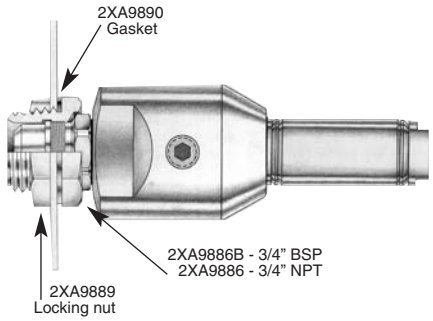
The spray set-up can be moved away from the nozzle body by using optional 152mm or 305mm extensions. These allow the spray to be moved closer to the target while keeping the nozzle body and associated piping at a distance.

MOUNTING HARDWARE

In many XA installations the nozzle is supported by the rigid metal pipe that supplies air or liquid. There are several components which can provide support for the XA Bodies when it isn't appropriate to suspend the nozzle from piping; for example, when the nozzle will spray through the wall of a tank or duct, or when the air and liquid will be supplied through flexible tubing. All XA bodies except the XA03 can be used with any of the mounting hardware described here.

Thin Wall 02 Adapter

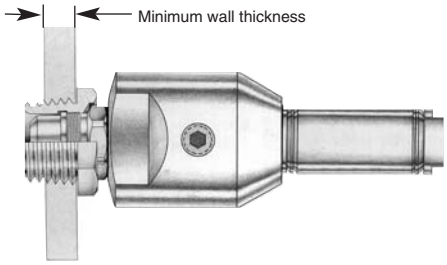
Three-piece adapter used to support an XA nozzle with the body located outside a tank or duct having a relatively thin (less than 10mm) wall and the spray directed into the interior. To use this adapter, a 27mm diameter hole must be drilled through the wall. This adapter both secures the air cap and attaches the nozzle body to the tank wall.



XA02 with Thin Wall 02 Adapter

Thick Wall 01 Adapter

Similar in design and function to the Thin Wall Adapter, but intended for use with tanks or ducts with walls that are thick enough (10mm or over) to be drilled and tapped for a 3/4" NPT thread.



XA02 with Thick Wall 01 Adapter

Mounting Bracket 03 Adapter

This bracket is used in combination with a Thin Wall Adapter to support an XA nozzle from a 13mm-diameter metal rod. The bracket allows flexibility in aiming the spray.

MATERIALS

Bodies, Fluid Caps, Air Caps, Hardware Assemblies, Mounting Hardware

The standard materials for the XA series are nickel-plated brass and 303 and 316 stainless steels. Other metals and plastics can be supplied on request. See page 12 for a complete material list.

Air Cylinders

The air cylinders used for XA hardware assemblies E and F have rods and cylinders made of stainless steel and end caps made of anodized aluminum. All metal parts in contact with the spray liquid are 316 stainless steel.

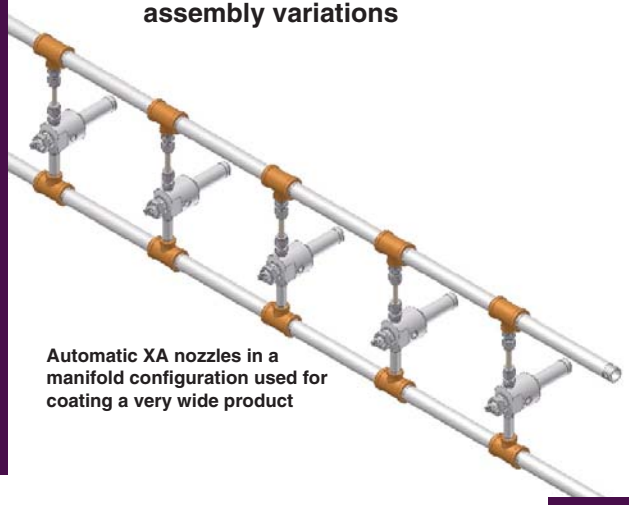
Seals

The standard material for XA gaskets is compressed fiber with a neoprene binder. For installations requiring FDA approval, SBR gaskets are available. Other elastomeric and metallic gasket materials can be supplied on request.

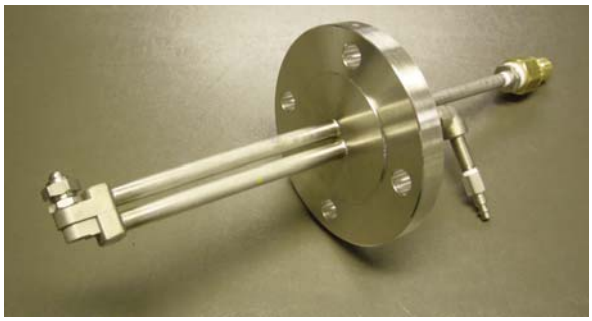
The standard material for O-rings in XA automatics is Viton®. Other materials available on request.

XA03 Mounting Bracket

BETE can fabricate XA nozzles into any number of lance assembly variations



Automatic XA nozzles in a manifold configuration used for coating a very wide product



Spray lance (see pages 18, 19) with a right angle XA and quick-connect fittings

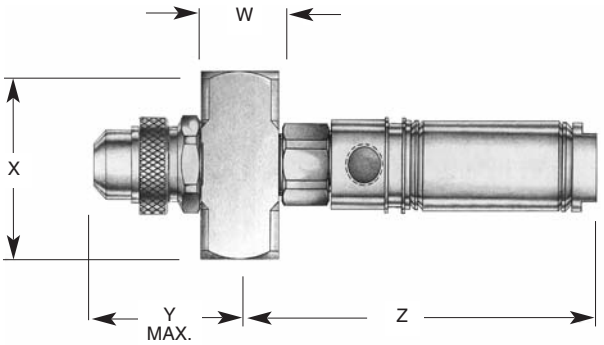
TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

Spray Set-up Numbers

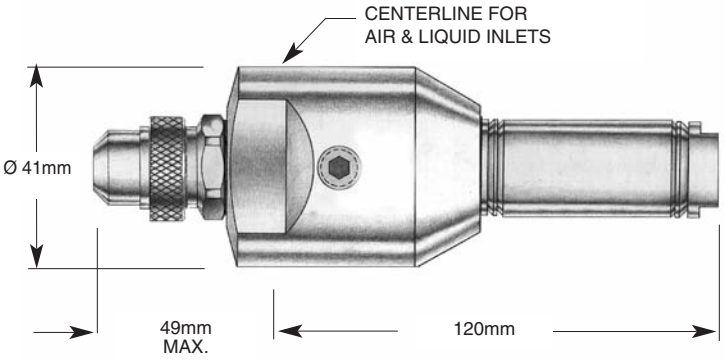
SPRAY SET-UP		PIPE SIZE BSP or NPT	SET-UP NO.	FLUID CAP	AIR CAP
EF	FLAT FAN (EXTERNAL MIX)	**1/8 OR 1/4**	**EF 050**	FC7	AC1001
			EF 100		AC1003
			EF 150	FC4	AC1001
			EF 200		AC1003
			EF 250	FC3	AC1001
			EF 300		AC1003
			EF 350	FC6	AC1002
			EF 400		AC1004
			EF 450	FC2	AC1002
			EF 500		AC1004
			EF 550	FC1	AC1002
			EF 600		AC1004
			EF 650	FC8	AC1005
			EF 700	FC9	AC1005
			EF 750	FC5	AC1005
		1/2	**EF 5050**	FC501	AC5001
SF	SIPHON FLAT FAN	**1/8 OR 1/4**	**SF 050**	FC3	AC1101
			SF 100	FC6	AC1102
			SF 150	FC2	AC1103
			SF 200	FC2	AC1104
SR	SIPHON ROUND	**1/8 OR 1/4**	**SR 050**	FC7	AC1201
			SR 150	FC4	AC1201
			SR 200	FC4	AC1202
			SR 250	FC3	AC1202
			SR 400	FC1	AC1204
			SR 450	FC5	AC1205
		1/2	**SR 5050**	FC501	AC5201
PF	PRESSURE FLAT FAN	**1/8 OR 1/4**	**PF 050**	FC4	AC1301
			PF 100	FC3	AC1303
			PF 150	FC3	AC1301
			PF 200	FC3	AC1302
			PF 250	FC2	AC1304
			PF 300	FC1	AC1304
			PF 350	FC1	AC1305
			PF 400	FC5	AC1306
		1/2	**PF 5050**	FC501	AC5301
			PF 5100	FC502	AC5302
XW	EXTRA WIDE-ANGLE ROUND	**1/8 OR 1/4**	**XW 050**	FC8	AC1401
		1/2	**XW 5050**	FC502	AC5401
PR	PRESSURE ROUND	**1/8 OR 1/4**	**PR 050**	FC4	AC1501
			PR 100	FC4	AC1502
			PR 150	FC3	AC1502
			PR 200	FC2	AC1503
			PR 250	FC1	AC1503
			PR 300	FC5	AC1504
		1/2	**PR 5050**	FC501	AC5501
			PR 5100	FC502	AC5502
AD	WIDE ANGLE ROUND	**1/8 OR 1/4**	**AD 050**	FC4	AC1601
			AD 100	FC2	AC1603
			AD 150	FC2	AC1602
			AD 200	FC1	AC1603
			AD 250	FC1	AC1604
			AD 300	FC5	AC1605
		1/2	**AD 5050**	FC501	AC5601
			AD 5100	FC501	AC5602
			AD 5150	FC501	AC5603
			AD 5200	FC502	AC5604
FF	DEFLECTED FLAT FAN	**1/8 OR 1/4**	**FF 050**	FC10	AC1701
ER	NARROW ANGLE ROUND	**1/8 OR 1/4**	**ER 050**	FC7	AC1801
			ER 150	FC4	
			ER 250	FC3	
			ER 350	FC6	AC1802
			ER 450	FC2	
			ER 550	FC1	
			ER 650	FC3	AC1803
			ER 750	FC9	
			ER 850	FC5	

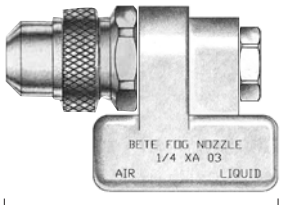
Dimensions with Hardware Options for XA00 Body, BSP or NPT

Pipe Size	Hardware Option	Dimensions in (mm) W	X	Y	Max. "Z"
1/8 OR 1/4	A	22.2	42.9	49.2	14.3
	B				42.3
	C				63.5
	D				77.0
	E				103
	F				103
1/2	A	31.8	63.5	68.3	25.4



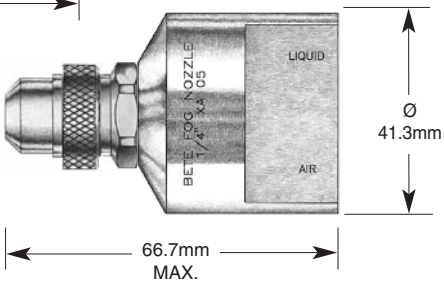
Overall Dimensions of XA Assemblies with XA00 Body (Shown with E or F Hardware)





Overall Dimensions for Assemblies with XA03 Bodies

Overall Dimensions for Assemblies with XA05 Bodies



SYSTEM SET-UPS AND ACCESSORIES

BETE carries a complete line of controls and accessories required for setting up a system using the XA Series nozzles.

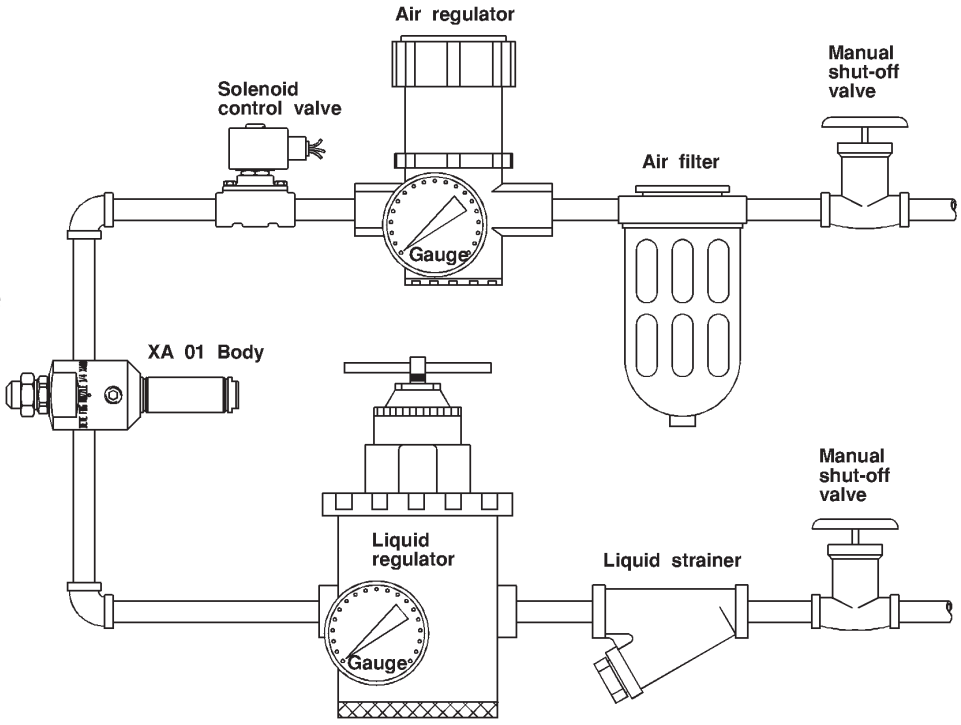
Contact your BETE representative for details.

Pressure System Set-up

In a pressure-fed system, the liquid is supplied under pressure to either internal or external mix BETE XA Series nozzles.

Air and liquid regulators control the fluid delivery pres-sure, while the air filter and liquid strainer ensure that the supplied fluids are of high quality.

Operational control is maintained by manual or solenoid valves used in conjunction with the various hardware assemblies.



PRESSURE SYSTEM

Siphon System Set-up

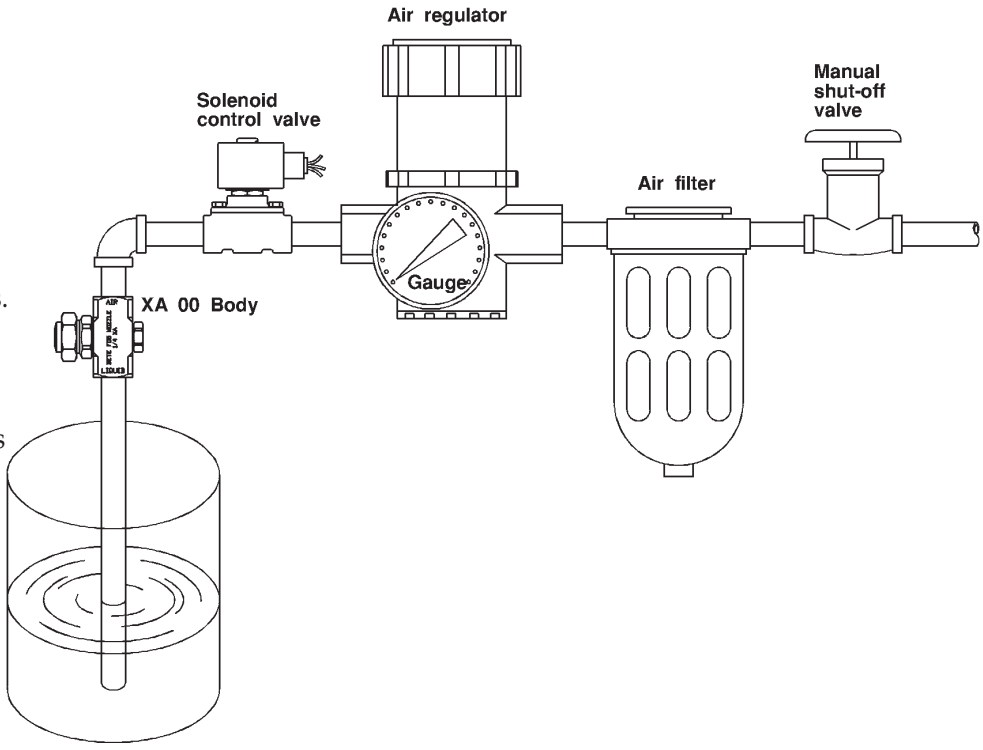
In a siphon-fed system, the liquid is supplied by either a siphon or gravity feed.

An air regulator controls the air delivery pressure, while the air filter ensures that the compressed air is of high quality.

Operational control is maintained by manual or solenoid valves used in conjunction with the various hardware assemblies.

When used as a gravity feed set-up, a positive liquid shutoff capability should be provided.

Filters, regulators, and strainers matched to your XA application are available from stock.



SIPHON SYSTEM

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

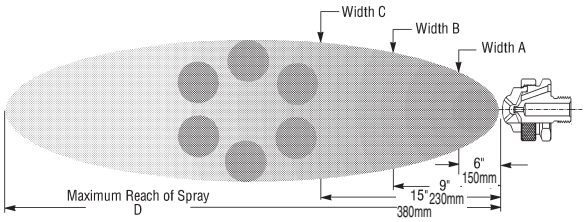
XA AD

Pressure-fed/Int. Mix/Wide Angle Round

1/4" XA AD100 C
XA 00 Body; C Hardware

DESIGN/SPRAY CHARACTERISTICS

- Internal mix
- Very fine atomization
- 70° Hollow Cone spray pattern
- Moderate forward spray projection



Dimensions are approximate. Check with BETE for critical dimension applications.

XA AD Set-up Flow Rates and Dimensions

Pressure-fed, Internal Mix, Wide Angle Round Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NP T

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Bar air	Bar liquid	A (mm)	B (mm)	C (mm)	D (m)
1/8 OR 1/4	AD 050	Fluid Cap FC4 & Air Cap AC1601	0.6 0.7 0.9 1.0	**5.3** **4.3** **3.0** **1.7**	0.60 0.72 0.84 1.02	1.1 1.3 1.4 1.5 1.7 1.8	**8.1** **7.0** **6.4** **5.5** **4.5** **3.5**	0.79 0.88 0.94 1.01 1.16 1.30	1.5 1.8 2.1 2.4	**8.1** **6.6** **4.9** **3.2**	0.92 1.09 1.32 1.68	2.4 2.7 3.0 3.2 3.4 3.5	**8.9** **8.1** **6.4** **4.9** **4.2** **3.4**	1.24 1.40 1.66 1.92 2.13 2.33	3.1 3.4 3.9 4.2 4.6 4.9	**10.5** **9.7** **7.8** **6.1** **4.4** **2.8**	1.44 1.68 2.16 2.52 2.82 3.24	0.7 1.4 1.8 3.0 3.9	0.7 1.5 2.0 3.0 4.0	140 150 160 160 190	180 190 200 200 230	230 240 250 260 300	1.5 1.8 2.1 2.7 4.0
	AD 100	Fluid Cap FC2 & Air Cap AC1603	0.9 1.0	**7.0** **2.1**	3.00 3.72	1.7 1.8	**13.2** **9.8**	4.08 4.74	2.0 2.1 2.2	**18.5** **15.1** **11.7**	4.08 4.56 5.10	2.8 3.0 3.1 3.2 3.4 3.5 3.7	**25.0** **22.0** **18.5** **15.1** **12.1** **9.1** **6.1**	5.04 5.52 6.06 6.54 7.14 7.80 8.52	3.7 3.8 3.9 4.1 4.2 4.6 4.9	**31.0** **28.0** **26.0** **23.0** **20.0** **13.6** **6.8**	5.76 6.30 6.78 7.32 7.80 9.18 11.0	0.9 1.7 2.1 3.2 4.1	0.7 1.5 2.0 3.0 4.0	180 190 190 200 210	240 250 250 260 280	310 330 330 340 370	1.8 2.4 3.2 4.1 5.9
	AD 150	Fluid Cap FC2 & Air Cap AC1602	1.1 1.3 1.4 1.5 1.7 1.8 2.0	**12.3** **9.9** **7.9** **6.1** **4.9** **3.9** **3.1**	2.40 2.70 3.00 3.24 3.48 3.72 4.02	2.2 2.5 2.8 3.0 3.1 3.2 3.4	**16.3** **12.1** **8.9** **7.6** **6.4** **5.5** **4.7**	3.72 4.26 4.74 4.98 5.22 5.46 5.70	2.7 3.0 3.2 3.4 3.5 3.9 4.2	**21.0** **16.3** **12.3** **10.7** **9.3** **6.4** **4.7**	4.14 4.68 5.16 5.46 5.64 6.30 6.90	4.2 4.6 4.9 5.3 5.6 6.0 6.3	**19.3** **14.6** **10.8** **8.1** **6.2** **4.9** **4.0**	6.00 6.78 7.44 8.10 8.76 9.42 10.0	5.6 6.0 6.3 6.7 7.0	**22.0** **17.6** **14.0** **11.4** **9.1**	7.80 8.52 9.12 9.78 10.4	1.5 3.0 3.4 5.3 6.3	0.7 1.5 2.0 3.0 4.0	150 160 160 180 190	190 200 200 220 240	230 240 240 250 280	2.7 4.6 5.5 7.3 9.4
	AD 200	Fluid Cap FC1 & Air Cap AC1603	0.7 0.9 1.0	**23.1** **8.30** **3.40**	1.70 2.89 3.40	1.4 1.5 1.7 1.8	**37.1** **30.3** **18.2** **11.7**	2.38 2.89 3.74 4.42	2.1 2.2 2.4 2.5	**26.9** **22.3** **11.4** **7.20**	3.91 4.42 5.44 5.95	2.8 3.0 3.1 3.2 3.4 3.5 3.7	**49.2** **40.1** **32.9** **28.8** **20.1** **15.5** **7.60**	3.91 4.59 5.10 5.44 6.63 7.14 8.33	3.7 3.8 4.0 4.2 4.6 4.9	**57.2** **53.0** **44.7** **34.4** **18.9** **7.90**	4.59 5.10 5.95 6.80 8.83 10.7	0.9 1.5 2.4 3.2 3.9	0.7 1.5 2.0 3.0 4.0	190 200 200 200 200	250 270 270 280 280	360 370 370 380 390	2.1 3.2 4.1 5.0 6.8
	AD 250	Fluid Cap FC1 & Air Cap AC1604	1.3 1.5 1.8 2.0 2.1 2.3 2.4	**26.1** **21.2** **13.6** **9.50** **7.60** **4.20** **2.60**	5.27 5.95 7.14 7.82 8.16 8.83 9.17	2.1 2.4 2.7 3.0 3.2 3.5 4.2	**45.0** **38.6** **30.7** **23.8** **19.3** **12.9** **1.50**	7.14 8.16 9.17 10.2 10.9 11.9 14.1	3.1 3.2 3.4 3.5 3.9 4.6 4.9	**42.4** **40.1** **35.6** **33.3** **24.6** **11.0** **6.40**	10.0 10.7 11.0 11.2 12.6 15.0 16.0	4.2 4.9 5.6 6.0 6.3 6.7 7.0	**55.6** **42.0** **28.4** **20.6** **14.8** **7.00** **1.20**	11.8 13.8 15.9 17.1 18.0 19.2 20.1	5.6 6.0 6.3 6.7 7.0	**59.8** **52.4** **46.8** **39.4** **33.9**	14.7 15.6 16.8 17.7 18.9	2.0 3.0 3.9 6.0 6.3	0.7 1.5 2.0 3.0 4.0	200 200 220 230 240	250 270 280 290 320	330 340 370 380 400	5.5 6.4 8.2 9.1 10.4
	AD 300	Fluid Cap FC5 & Air Cap AC1605	1.7 1.8 2.0 2.1 2.3	**25.0** **19.7** **15.1** **11.4** **7.6**	9.36 10.0 10.7 11.6 12.3	3.0 3.1 3.2 3.4 3.5 3.7	**39.0** **33.0** **27.0** **23.0** **18.5** **14.8**	13.8 14.4 15.3 15.9 16.8 17.4	3.4 3.5 3.7 3.9 4.1 4.2 4.4	**50.0** **43.0** **41.0** **27.0** **23.0** **18.9** **15.9**	15.0 15.6 16.5 18.0 18.6 19.2 20.1	4.6 4.9 5.3 5.6 6.0 6.3	**62.0** **47.0** **36.0** **26.0** **18.9** **13.6**	19.2 20.7 22.5 24.3 26.1 27.6	6.0 6.3 6.7 7.0	**93.0** **77.0** **62.0** **52.0**	23.7 25.5 27.6 29.7	2.0 3.2 3.9 5.3 6.3	0.7 1.5 2.0 3.0 4.0	240 250 280 290 330	330 340 370 380 420	460 470 510 530 580	5.5 6.4 7.3 7.9 9.8

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

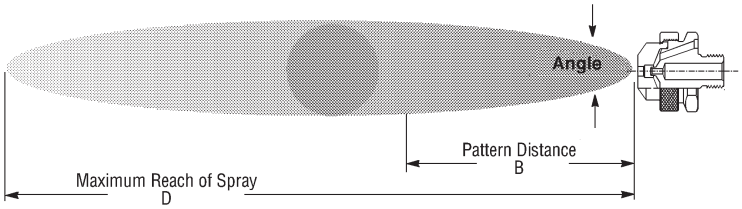
XA PR

Pressure-fed/Int. Mix/Narrow Angle Round

1/4" XA 02 PR050 E
XA 02 Body; E Hardware

DESIGN/SPRAY CHARACTERISTICS

- Internal mix
- Very fine atomization
- Narrow spray angle (12°- 22°)
- Full cone pattern
- Large forward projection (up to 8.5 m)



Dimensions are approximate. Check with BETE for critical dimension applications.

XA PR Set-up Flow Rates and Dimensions

Pressure-fed, Internal Mix, Round Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions				
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Bar air	Bar liquid	Spray Angle (deg.)	B (mm)	D (m)
1/8 OR 1/4	PR 050	Fluid Cap FC4 & Air Cap AC1501	0.7	**2.5**	0.960	1.1	**6.4**	0.720	1.4	**6.4**	0.840	2.7	**6.2**	1.38	3.5	**7.8**	1.68					
			0.9	**1.8**	1.14	1.4	**5.0**	0.900	1.7	**5.5**	1.02	2.8	**5.7**	1.50	3.7	**7.3**	1.74	0.9	0.7	13	300	3
			1.0	**1.4**	1.32	1.7	**4.1**	1.14	2.0	**4.5**	1.20	3.0	**5.2**	1.62	3.9	**6.4**	1.98	1.7	1.5	13	330	3
						1.8	**3.4**	1.20	2.2	**3.4**	1.44	3.1	**4.7**	1.74	4.2	**5.5**	2.28	2.5	2.0	13	360	3
						2.0	**3.0**	1.38	2.4	**3.0**	1.56	3.2	**4.3**	1.86	4.5	**4.5**	2.58	3.1	3.0	14	390	4
						2.1	**2.6**	1.50	2.5	**2.5**	1.68	3.4	**3.9**	1.98	4.6	**4.1**	2.70	4.5	4.0	15	440	4
						2.2	**2.0**	1.62	2.7	**2.3**	1.86	3.7	**3.0**	2.28	4.8	**3.7**	2.82					
	PR 100	Fluid Cap FC4 & Air Cap AC1502	0.7	**2.5**	1.14	1.4	**5.7**	1.62	1.7	**6.7**	1.74	2.2	**9.2**	2.04	2.8	**11.9**	2.34					
			0.9	**2.0**	1.32	1.5	**5.2**	1.74	1.8	**6.4**	1.86	2.5	**8.2**	2.34	3.1	**11.0**	2.58	0.9	0.7	12	430	4
			1.0	**1.6**	1.56	1.7	**4.8**	1.92	2.0	**5.9**	2.04	2.8	**7.2**	2.64	3.4	**10.1**	2.82	1.5	1.5	13	460	4
						1.8	**4.3**	2.10	2.1	**5.2**	2.22	3.0	**6.7**	2.82	3.7	**9.2**	3.12	2.4	2.0	13	480	4
						2.0	**3.9**	2.22	2.2	**4.8**	2.40	3.1	**6.3**	2.94	3.9	**8.4**	3.48	3.0	3.0	13	510	5
						2.1	**3.4**	2.40	2.4	**4.3**	2.58	3.2	**5.9**	3.12	4.2	**7.6**	3.72	3.9	4.0	15	560	5
									2.7	**3.6**	2.88	3.4	**5.5**	3.30	4.5	**6.8**	4.08					
	PR 150	Fluid Cap FC3 & Air Cap AC1502	0.9	**4.8**	1.26	1.7	**8.4**	1.86	2.0	**10.7**	1.98	2.7	**16.5**	2.22	3.4	**20.0**	2.58					
			1.1	**4.1**	1.62	1.8	**7.5**	2.10	2.1	**9.8**	2.22	2.8	**15.4**	2.28	3.7	**18.4**	2.82	1.5	0.7	12	480	4
			1.4	**3.4**	1.98	2.0	**7.0**	2.22	2.4	**8.2**	2.52	3.1	**13.6**	2.58	3.9	**16.8**	3.00	2.5	1.5	13	510	4
			1.5	**3.1**	2.10	2.2	**5.7**	2.64	2.7	**6.8**	2.88	3.4	**11.8**	2.94	4.2	**15.2**	3.30	3.0	2.0	13	530	5
			1.7	**3.0**	2.34	2.5	**4.8**	2.94	3.0	**5.9**	3.30	3.7	**10.4**	3.30	4.5	**13.8**	3.60	3.4	3.0	14	560	5
			1.8	**2.9**	2.46	2.8	**4.1**	3.24	3.2	**5.0**	3.54	3.9	**9.1**	3.66	4.8	**12.4**	3.90	4.2	4.0	15	600	5
			2.0	**2.8**	2.64	3.1	**3.6**	3.54	3.5	**4.1**	3.90	4.2	**7.9**	3.90	4.9	**11.8**	4.08					
	PR 200	Fluid Cap FC2 & Air Cap AC1503	1.1	**13.0**	4.56	2.2	**17.8**	6.96	2.8	**20.0**	8.16	3.4	**32.0**	8.94	4.6	**37.0**	11.6					
			1.4	**8.9**	5.46	2.5	**13.1**	7.80	3.1	**16.3**	8.94	3.9	**25.0**	10.2	5.3	**29.0**	13.2	1.7	0.7	18	660	5
			1.5	**7.2**	5.88	2.8	**9.5**	8.58	3.4	**11.9**	9.78	4.6	**15.9**	12.3	5.6	**25.0**	14.1	2.8	1.5	20	760	6
			1.7	**5.8**	6.30	3.1	**7.0**	9.42	3.9	**7.0**	11.2	5.3	**9.1**	14.4	6.0	**21.0**	15.0	3.9	2.0	20	810	7
			1.8	**4.7**	6.72	3.4	**4.9**	10.3	4.2	**4.7**	12.3	5.6	**6.8**	15.3	6.3	**17.4**	16.2	5.3	3.0	21	910	8
			2.0	**3.6**	7.14	3.5	**4.2**	10.7	4.6	**3.0**	13.2	6.0	**5.0**	16.5	6.7	**14.0**	17.4	6.0	4.0	21	970	9
			2.1	**2.7**	7.62							6.3	**3.6**	17.4	7.0	**11.0**	18.3					
	PR 250	Fluid Cap FC1 & Air Cap AC1503	0.9	**31.0**	3.42	1.4	**61.0**	4.14	2.1	**53.0**	5.76	2.7	**80.0**	6.18	3.8	**88.0**	8.10					
			1.0	**25.0**	3.96	1.5	**54.0**	4.56	2.4	**41.0**	6.72	3.0	**69.0**	7.02	4.2	**73.0**	9.36	1.0	0.7	17	610	5
			1.1	**18.5**	4.50	1.7	**48.0**	5.10	2.7	**31.0**	7.62	3.2	**59.0**	7.80	4.6	**61.0**	10.6	1.8	1.5	18	690	6
			1.3	**12.9**	5.10	1.8	**41.0**	5.58	2.8	**26.0**	8.16	3.5	**49.0**	8.76	4.9	**48.0**	11.8	2.8	2.0	20	760	7
						2.0	**35.0**	6.12	3.0	**22.0**	8.64	3.7	**44.0**	9.24	5.3	**39.0**	12.9	3.5	3.0	20	790	7
						2.1	**30.0**	6.60				3.8	**37.0**	9.66	5.6	**31.0**	14.4	4.9	4.0	21	910	9
						2.2	**25.0**	7.14				3.9	**35.0**	10.2	6.0	**23.0**	15.6					
	PR 300	Fluid Cap FC5 & Air Cap AC1504	1.0	**44.0**	5.16	1.4	**125**	4.74	2.0	123	6.48	2.2	**199**	5.28	3.0	**250**	5.94					
			1.1	**32.0**	6.12	1.5	**106**	5.46	2.1	**108**	7.14	2.5	**174**	6.60	3.2	**225**	7.20	1.0	0.7	19	890	6
						1.7	**87.0**	6.30	2.2	**95.0**	7.80	2.8	**146**	7.98	3.5	**205**	8.46	1.7	1.5	20	990	7
						1.8	**70.0**	7.08	2.4	**79.0**	8.58	3.1	**121**	9.24	3.8	**182**	9.78	2.4	2.0	21	1040	8
						2.0	**55.0**	7.80	2.5	**64.0**	9.30	3.2	**108**	9.96	4.1	**159**	11.0	3.1	3.0	21	1070	8
									2.7	**52.0**	9.96	3.4	**95.0**	10.6	4.6	**121**	13.5	3.8	4.0	22	1170	9
									2.8	**42.0**	10.7	3.5	**84.0**	11.2	4.9	**93.0**	15.3					

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

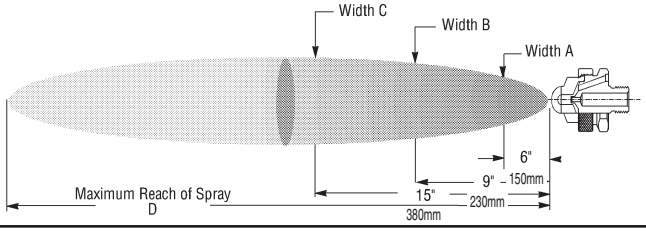
XA PF

Pressure-fed/Internal Mix/Flat Fan

1/4" XA PF300 A
XA 00 Body; A Hardware

DESIGN/SPRAY CHARACTERISTICS

- Internal mix
- Very fine atomization
- Flat fan, wide angle spray patterns (between 80° and 90°)



Dimensions are approximate. Check with BETE for critical dimension applications.

XA PF Set-up Flow Rates and Dimensions

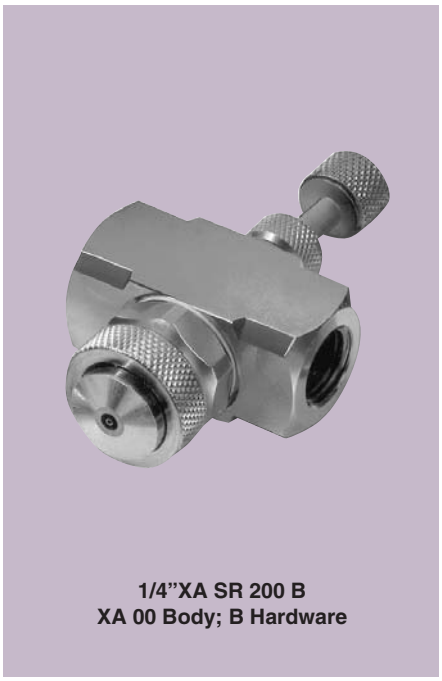
Pressure-fed, Internal Mix, Flat Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Bar air	Bar liquid	A (mm)	B (mm)	C (mm)	D (m)
1/8 OR 1/4	PF 050	Fluid Cap FC4 & Air Cap AC1301	0.7 0.9 1.0 1.1 1.3 1.4 1.5	**5.5** **4.7** **4.1** **3.5** **3.0** **2.5** **2.0**	1.44 1.62 1.86 2.04 2.22 2.40 2.64	1.3 1.5 1.8 2.1 2.4 2.7 2.8	**9.1** **7.7** **6.5** **5.4** **4.3** **3.3** **2.8**	1.86 2.16 2.52 2.82 3.12 3.42 3.60	2.0 2.2 2.5 2.8 3.1 3.2 3.4	**8.6** **7.5** **6.2** **5.2** **4.2** **3.7** **3.2**	2.52 2.82 3.12 3.42 3.78 3.90 4.08	2.7 3.0 3.2 3.5 4.2 4.6 4.9	**11.2** **10.1** **9.1** **8.1** **5.4** **4.2** **3.1**	3.12 3.36 3.72 3.96 4.74 5.10 5.46	3.9 4.6 5.3 6.0 6.3 6.7 7.0	**12.0** **9.7** **7.5** **5.3** **4.3** **3.3** **2.4**	4.14 4.86 5.58 6.24 6.60 6.96 7.32	1.1 2.1 2.8 3.5 6.0	0.7 1.5 2.0 3.0 4.0	250 360 380 470 560	360 480 530 610 740	460 660 760 860 940	2.6 3.0 3.2 3.4 4.0
	PF 100	Fluid Cap FC3 & Air Cap AC1303	1.3 1.4 1.5 1.7 1.8 2.0	**3.9** **3.0** **2.3** **1.8** **1.3** **1.0**	1.80 1.98 2.10 2.28 2.46 2.64	2.1 2.4 2.5 2.7 2.8 3.0 3.1	**7.4** **5.3** **4.4** **3.7** **3.1** **2.6** **2.1**	2.40 2.70 2.82 3.00 3.12 3.30 3.42	3.0 3.1 3.2 3.4 3.5 3.9	**6.1** **5.3** **4.5** **3.8** **3.2** **1.8**	3.12 3.24 3.42 3.54 3.72 4.08	3.9 4.2 4.6 4.9	**9.4** **7.2** **5.3** **3.8**	3.60 4.02 4.38 4.80	5.3 5.6 6.0 6.3	**10.2** **8.3** **6.6** **5.1**	4.68 5.04 5.34 5.88	1.5 2.7 3.2 4.2 5.6	0.7 1.5 2.0 3.0 4.0	250 360 480 610 640	330 510 580 740 760	460 690 740 940 970	1.8 2.0 2.0 2.1 2.3
	PF 150	Fluid Cap FC3 & Air Cap AC1301	0.9 1.0 1.1 1.3 1.4	**8.2** **6.8** **5.5** **4.1** **2.9**	1.20 1.38 1.62 1.80 2.04	1.4 1.7 2.0 2.1 2.2 2.4 2.5	**14.4** **11.9** **9.5** **8.3** **7.1** **6.1** **5.1**	1.62 1.92 2.22 2.40 2.58 2.76 2.94	2.1 2.4 2.7 3.0 3.2 3.4 3.5	**13.5** **11.4** **9.2** **7.1** **5.0** **4.0** **3.3**	2.16 2.52 2.82 3.18 3.54 3.78 3.96	2.7 3.0 3.2 3.5 4.2 4.6 4.9	**19.1** **17.1** **15.1** **13.1** **8.1** **5.9** **4.0**	2.52 2.76 3.12 3.42 4.32 4.74 5.16	4.6 4.9 5.3 5.6 6.0 6.3 6.7	**16.1** **13.8** **11.5** **9.3** **7.3** **5.6** **4.3**	4.14 4.56 4.98 5.40 5.82 6.24 6.72	1.1 2.1 3.0 3.5 5.6	0.7 1.5 2.0 3.0 4.0	360 430 510 580 580	460 610 660 760 760	710 810 890 970 970	2.1 2.4 2.6 2.7 3.2
	PF 200	Fluid Cap FC3 & Air Cap AC1302	1.0 1.1 1.3 1.4 1.7 2.0 2.2	**9.0** **7.8** **6.6** **5.2** **3.1** **2.0** **1.1**	1.50 1.80 1.92 2.16 2.64 3.00 3.36	2.0 2.1 2.2 2.5 2.8 3.1 3.4	**10.4** **9.3** **8.2** **6.1** **4.3** **3.0** **2.0**	2.46 2.70 2.88 3.30 3.72 4.14 4.50	2.4 2.5 2.7 3.0 3.2 3.5 3.8	**11.6** **10.4** **9.4** **7.3** **5.5** **4.1** **2.9**	2.88 3.06 3.24 3.66 4.08 4.50 4.86	3.1 3.2 3.4 3.8 4.2 4.9 6.0	**15.6** **14.6** **13.7** **10.8** **8.5** **5.2** **2.3**	3.36 3.54 3.72 4.26 4.92 5.88 7.20	4.2 4.6 4.9 5.3 5.6 6.3 7.0	**17.1** **15.0** **12.8** **11.0** **9.4** **7.2** **6.1**	4.38 4.80 5.22 5.64 6.18 7.14 8.04	1.4 2.5 3.2 3.8 5.3	0.7 1.5 2.0 3.0 4.0	100 130 130 150 200	130 150 170 220 250	170 200 220 280 330	3.0 3.7 4.0 4.2 4.8
	PF 250	Fluid Cap FC2 & Air Cap AC1304	1.1 1.3 1.4 1.5 1.7	**11.2** **8.5** **6.5** **5.0** **3.8**	3.24 3.60 3.90 4.26 4.62	2.1 2.2 2.4 2.5	**18.0** **15.8** **13.6** **11.6**	4.74 5.04 5.34 5.70	2.7 2.8 3.0 3.1 3.2	**19.6** **17.3** **15.2** **13.2** **11.4**	5.58 5.88 6.18 6.54 6.84	3.5 3.7 3.8 3.9 4.1 4.2	**27.0** **25.0** **23.0** **21.0** **18.9** **17.0**	6.72 6.96 7.26 7.56 7.92 8.22	4.6 4.9 5.3 5.6 6.0 6.3	**33.0** **28.0** **24.0** **19.7** **15.7** **12.4**	8.22 8.94 9.66 10.4 11.2 12.0	1.4 2.4 3.0 3.7 5.3	0.7 1.5 2.0 3.0 4.0	150 230 250 300 330	180 280 330 380 410	200 330 400 460 480	3.0 3.2 3.4 3.5 4.0
	PF 300	Fluid Cap FC1 & Air Cap AC1304	0.9 1.0 1.1 1.3 1.4 1.5	**27.0** **20.0** **15.9** **12.5** **10.2** **7.6**	1.98 2.28 2.70 2.88 3.36 3.72	1.8 2.1 2.2 2.4 2.5 2.7	**38.0** **28.0** **24.0** **21.0** **17.8** **15.1**	3.30 3.96 4.26 4.56 4.92 5.22	2.4 2.7 3.0 3.2 3.4 3.5 3.7	**39.0** **30.0** **24.0** **17.8** **15.1** **12.9** **10.6**	4.02 4.62 5.22 5.88 6.18 6.54 6.84	3.2 3.5 3.8 3.9 4.2 4.6 4.9	**58.0** **47.0** **38.0** **34.0** **27.0** **20.0** **14.8**	4.56 5.22 5.82 6.18 6.78 7.56 8.40	4.6 5.3 5.6 6.0 6.3 6.7 7.0	**59.0** **40.0** **32.0** **26.0** **20.0** **15.9** **12.7**	6.36 7.92 8.70 9.48 10.3 11.1 11.9	1.1 2.4 3.2 3.9 6.0	0.7 1.5 2.0 3.0 4.0	180 230 250 300 330	230 300 330 380 410	300 410 430 480 510	3.4 3.5 3.7 3.8 4.4
	PF 350	Fluid Cap FC1 & Air Cap AC1305	1.0 1.1 1.3 1.4	**17.0** **11.0** **7.6** **3.2**	1.38 1.62 1.98 2.40	2.0 2.1 2.2 2.4 2.5	**24.0** **18.9** **14.4** **10.6** **7.2**	2.64 3.00 3.36 3.78 4.26	2.4 2.5 2.7 2.8 3.0	**28.0** **23.0** **18.9** **15.1** **11.7**	3.06 3.54 3.96 4.44 4.74	3.4 3.5 3.7 3.8 3.9 4.2 4.6	**38.0** **33.0** **28.0** **23.0** **19.7** **13.1** **7.2**	4.32 4.80 5.34 5.82 6.30 7.20 8.28	3.9 4.2 4.6 4.9 5.3 5.6 6.3	**65.0** **53.0** **40.0** **30.0** **21.0** **13.8** **3.2**	4.50 5.34 6.48 7.62 8.94 10.4 13.5	1.1 2.1 2.8 3.7 4.9	0.7 1.5 2.0 3.0 4.0	100 100 130 150 200	130 130 170 200 250	150 170 220 280 350	2.4 3.0 3.4 3.6 4.0
	PF 400	Fluid Cap FC5 & Air Cap AC1306	1.0 1.1	**29.0** **18.9**	5.40 6.48	1.8 2.0	**56.0** **40.0**	7.02 7.98	2.1 2.2 2.4 2.5 2.7	**100** **79.0** **62.0** **48.0** **36.0**	7.14 7.98 8.82 9.72 10.6	3.0 3.1 3.2 3.4 3.5 3.7 3.8	126 **110** **95.0** **78.0** **62.0** **48.0** **37.0**	8.40 9.06 9.78 11.0 11.6 12.6 13.5	4.1 4.2 4.6 4.9 5.3 5.6	**140** **125** **89.0** **58.0** **34.0** **16.7**	10.9 11.6 13.5 15.9 18.3 20.4	1.0 1.8 2.4 3.4 4.9	0.7 1.5 2.0 3.0 4.0	180 250 250 330 360	200 300 300 410 430	250 430 460 530 580	3.4 3.8 4.3 4.6 5.2

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

XA SR

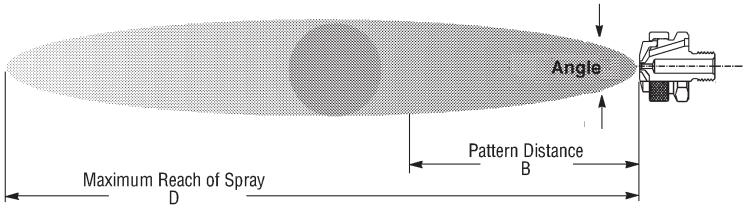
Siphon-fed Round



1/4"XA SR 200 B
XA 00 Body; B Hardware

DESIGN FEATURES

- Lowest flow available
- Very fine atomization
- Narrow spray angle (12°- 22°)
- Full cone pattern
- Short to moderate forward spray projection



Dimensions are approximate. Check with BETE for critical dimension applications.

XA SR Set-up Flow Rates and Dimensions

Siphon-fed, External Mix, Round Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	ATOMIZING AIR		Liquid Capacity in l/h (Liters Per Hour)								Spray Dimensions at 200 mm. Siphon Height			
					Gravity Head			Siphon Height								
			Air (bar)	Air Capacity (Nm^3/h)	450 mm	**300 mm**	150 mm	100 mm	200 mm	**300 mm**	600 mm	900 mm	Air (bar)	Spray Angle (deg.)	B (mm)	D (m)
1/8 or 1/4	SR 050	Fluid Cap FC7 & Air Cap AC 1201	0.7	0.66	1.5	**1.3**	1.1	0.9	0.7	**0.5**			0.7	18	280	1.8
			1.5	1.02	1.8	**1.7**	1.5	1.3	1.2	**1.1**	0.6		1.5	18	280	1.9
			3.0	1.68	2.1	**1.9**	1.7	1.5	1.4	**1.3**	1.1	0.8	3.0	18	300	2.3
			4.0	2.16	2.2	**2.0**	1.8	1.6	1.5	**1.4**	1.2	0.9	4.0	18	360	2.6
	SR 150	Fluid Cap FC4 & Air Cap AC1201	0.7	0.78	24	**2.1**	1.7	1.5	1.2	**0.8**			0.7	18	300	2.1
			1.5	1.20	2.8	**2.6**	2.4	2.1	1.9	**1.6**	0.9		1.5	18	330	2.3
			3.0	1.92	3.4	**3.1**	2.9	2.8	2.6	**2.4**	1.7	1.1	3.0	18	380	2.6
			4.0	2.46	3.7	**3.4**	3.3	3.1	2.9	**2.7**	2.1	1.5	4.0	19	430	3.0
	SR 200	Fluid Cap FC4 & Air Cap AC1202	0.7	1.38	2.5	**2.3**	2.0	1.6	1.4	**1.1**			0.7	18	300	2.4
			1.5	2.16	2.9	**2.8**	2.5	2.2	2.0	**1.7**	0.9		1.5	18	330	2.7
			3.0	3.48	3.4	**3.3**	3.2	2.9	2.8	**2.5**	1.9	1.2	3.0	19	380	3.4
			4.0	4.44	3.7	**3.6**	3.5	3.4	3.3	**3.0**	2.5	2.0	4.0	20	430	4.0
	SR 250	Fluid Cap FC3 & Air Cap AC1202	0.7	1.14	4.5	**4.0**	3.4	21	1.8	**1.4**			0.7	21	380	3.0
			1.5	1.86	5.3	**4.9**	4.4	3.5	2.9	**2.7**	1.8		1.5	21	410	3.4
			3.0	3.00	6.0	**5.6**	5.0	4.4	4.0	**3.4**	2.4	1.2	3.0	21	460	4.0
			4.0	3.90	5.7	**5.4**	5.0	4.2	3.9	**3.5**	2.8	1.9	4.0	22	510	4.6
	SR 400	Fluid Cap FC1 & Air Cap AC 1204	1.5	3.48	22	**19.9**	16.3	12.3	10.5	**8.3**	2.8		1.5	17	460	3.7
			3.0	5.28	25	**23**	19.5	16.7	14.2	**11.5**	6.4	2.8	3.0	18	510	4.3
			4.0	6.66	26	**24**	21	18.4	15.7	**12.9**	7.9	4.5	4.0	18	530	4.9
			5.6	8.82	26	**24**	22	19.7	17	**14.6**	9.8	6.1	5.6	19	580	5.5
	SR 450	Fluid Cap FC5 & Air Cap AC 1205	2.0	8.64				27	22	**16.8**			2.0	20	510	6.7
			3.0	11.4				30	26	**21**			3.0	20	530	7.0
			4.0	14.4		**43**	40	31	28	**23**	11.0		4.0	21	580	7.6
			5.6	18.9	44	**42**	39	31	28	**24**	16.7	8.3	5.6	22	630	8.2

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

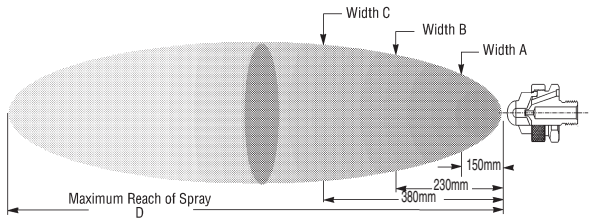
TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

XA SF

Siphon-fed Flat Fan

DESIGN/SPRAY CHARACTERISTICS

- Lowest flow available
- Very fine atomization
- Flat fan spray pattern
- Moderate spray angle (60° - 85°)
- Small forward projection
- Siphon-fed



1/4"XA02 SF 050 F
XA 02 Body; F Hardware

Dimensions are approximate. Check with BETE for critical dimension applications.

XA SF Set-up Flow Rates and Dimensions

Siphon-fed, Internal Mix, Flat Fan Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid Cap and Air Cap Numbers	ATOMIZING AIR Air (bar)	ATOMIZING AIR Air Capacity (Nm^3/h)	Liquid Capacity in l/h (Liters Per Hour) Gravity Head 450 mm	Gravity Head **300 mm**	Gravity Head 150 mm	Siphon Height 100 mm	Siphon Height 200 mm	Siphon Height **300 mm**	Siphon Height 600 mm	Siphon Height 900 mm	Spray Dimensions at 200 mm Siphon Height Air (bar)	A (mm)	B (mm)	C (mm)	D (m)
1/8 or 1/4	SF 050	Fluid Cap FC3 & Air Cap AC1101	0.7 1.5 2.0	1.68 2.58 3.00	1.3 1.2 0.8	**1.2** **1.1** **0.8**	1.1 1.0 0.7	1.0 0.9 0.6	1.0 0.9 0.5	**0.8** **0.8**	0.6 0.7	0.5 0.5	0.7 1.5 2.0	200 210 230	260 290 300	380 380 380	2.1 2.1 1.8
	SF 100	Fluid Cap FC6 & Air Cap AC1102	1.5 2.0 3.0 4.0	3.36 3.90 5.22 6.60	3.7 3.4 2.8 1.9	**3.5** **3.3** **2.7** **1.8**	3.3 3.1 2.5 1.6	2.9 2.8 2.4 1.5	2.8 2.7 2.2 1.3	**2.5** **2.6** **2.1** **1.2**	2.3 2.4 1.9	2.1 2.2 1.7	1.5 2.0 3.0 4.0	230 240 270 280	320 340 370 390	380 420 460 480	2.7 2.7 3.0 2.7
	SF 150	Fluid Cap FC2 & Air Cap AC1103	1.5 2.0 3.0 3.5	4.08 4.68 6.18 7.02	5.1 4.9 3.4 2.2	**4.8** **4.7** **3.2** **2.0**	4.5 4.4 3.0 1.7	3.8 3.6 2.2	3.7 3.4 2.0	**3.5** **3.2** **1.7**	3.0 2.9	2.4 2.3	1.5 2.0 3.0	190 200 220	230 250 270	270 280 300	3.4 3.4 3.0
	SF 200	Fluid Cap FC2 & Air Cap AC1104	1.5 2.0 3.0 3.5	3.78 4.38 5.76 6.60	7.6 7.6 6.4 4.2	**7.2** **7.3** **6.1** **3.7**	6.6 6.8 5.7 3.2	5.7 5.9 5.0 2.6	5.4 5.7 4.5	**5.1** **5.5** **4.1**	4.6 5.0 3.3	3.7 4.2	1.5 2.0 3.0	170 180 200	220 230 270	270 290 330	3.4 3.4 3.4

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

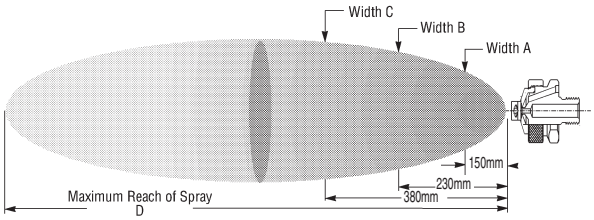
XAEF

Pressure-fed/External Mix/Flat Fan

1/4"XA EF 150 E
XA 00 Body; E Hardware

DESIGN FEATURES

- External mix: allows spraying of viscous materials
- Variable atomization
- Moderate spray angle (60°- 90°)
- Precise metering of the liquid flow rate



Dimensions are approximate. Check with BETE for critical dimension applications.

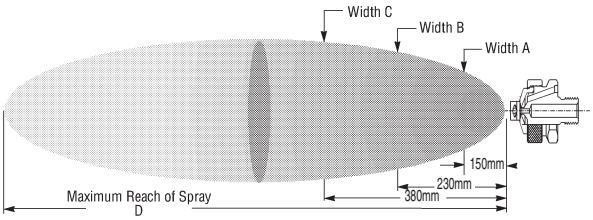
XA EF Set-up Flow Rates and Dimensions

Pressure-fed, External Mix, Flat Fan Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.2 Bar Liquid			0.3 Bar Liquid			0.7 Bar Liquid			1.5 Bar Liquid			3.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Bar air	Bar liquid	A (mm)	B (mm)	C (mm)	D (m)
1/8 or 1/4	EF 050	Fluid Cap FC7 & & Air Cap AC1001	0.4 0.4 0.5 0.6	3	1.32 1.50 1.62 1.68	0.4 0.4 0.6 0.7	4	1.32 1.50 1.68 2.04	0.4 0.6 0.7 0.9	5	1.50 1.68 2.04 2.40	0.6 0.7 1.1 1.4	8	1.68 2.04 2.70 3.24	0.7 1.1 1.8 2.5	11	2.04 2.70 3.72 4.74	0.4 0.6 0.6 1.1 1.4 1.1 1.4	0.3 0.7 1.5 1.5 1.5 2.0 3.0	200 230 280 280 250 280 300	280 300 350 330 300 350 380	330 400 460 430 410 480 510	1.2 1.8 1.8 2.4 2.7 2.6 2.7
	EF 100	Fluid Cap FC7 & & Air Cap AC1003	0.2 0.4 0.7 1.1 1.4 1.8 2.1	3	1.51 1.58 1.87 2.38 2.72 3.23 3.56	0.4 0.7 1.1 1.4 1.8 2.1 2.8	4	1.58 1.87 2.38 2.72 3.23 3.56 4.42	0.7 1.1 1.4 1.8 2.1 2.8 3.5	5	1.87 2.38 2.72 3.23 3.56 4.42 5.10	1.4 1.8 2.1 2.8 3.5 4.2 5.6	8	2.72 3.23 3.57 4.42 5.10 6.12 8.34	2.8 3.5 4.2 4.9 5.3 5.6 6.3	11	4.38 5.10 6.12 7.14 7.65 8.34 9.54	0.2 1.1 1.4 1.4 1.8 2.8 4.9	0.2 0.2 0.4 1.4 0.7 1.4 2.8	90 90 100 120 120 130 150	150 150 150 180 150 180 180	230 230 230 250 240 280 240	0.9 1.2 1.2 1.5 1.5 1.8 2.4
	EF 150	Fluid Cap FC4 & & Air Cap AC1001	0.4 0.6 0.7 1.1	5	1.32 1.68 2.04 2.70	0.4 0.7 1.1 1.4	6	1.32 2.04 2.70 3.24	0.6 0.7 1.4 2.1	8	1.68 2.04 3.24 4.26	0.7 1.4 2.1 2.5	12	2.04 3.24 4.26 4.74	1.1 1.4 2.1 2.5	17	2.70 3.24 4.26 4.74	0.7 1.1 0.7 1.4 2.5 1.8 1.8	0.3 0.7 1.5 1.5 1.5 2.0 3.0	280 300 380 350 330 380 410	330 380 460 430 400 460 480	400 480 580 560 510 580 660	1.5 2.1 1.8 2.4 3.0 2.7 2.9
	EF 200	Fluid Cap FC4 & & Air Cap AC1003	0.4 0.7 1.1 1.4 1.8 2.1 2.8	5	1.58 1.87 2.38 2.72 3.23 3.56 4.42	0.7 1.1 1.4 1.8 2.1 2.8 3.5	6	1.87 2.38 2.72 3.23 3.56 4.42 5.10	1.1 1.4 1.8 2.1 2.8 3.5 4.2	8	2.38 2.72 3.23 3.56 4.42 5.10 6.12	1.8 2.1 2.8 3.5 4.2 4.9 6.3	12	3.23 3.56 4.42 5.10 6.12 7.14 9.54	3.2 3.5 4.2 4.9 5.3 6.3 6.7	17	4.92 5.10 6.12 7.14 7.62 9.54 9.84	0.4 1.4 1.8 1.8 2.1 3.5 5.3	0.2 0.2 0.4 1.4 0.7 1.4 2.8	80 90 100 130 130 130 150	140 150 170 190 180 220 190	220 220 230 290 250 300 250	1.0 1.7 1.8 2.1 1.8 2.4 3.0
	EF 250	Fluid Cap FC3 & & Air Cap AC1001	0.4 0.5 0.6 0.7	9	1.50 1.65 1.68 2.04	0.4 0.6 0.7 0.7	10	1.50 1.68 1.86 2.04	0.4 0.6 0.7 0.9	16	1.50 1.68 2.04 2.40	0.7 0.9 1.1 1.4	23	2.04 2.40 2.70 3.24	1.4 1.8 2.1 2.5	33	3.24 3.72 4.26 4.74	0.6 0.6 0.7 1.1 1.4 1.8 2.1	0.3 0.7 1.5 1.5 1.5 2.0 3.0	350 350 380 410 430 410 410	480 480 480 510 530 510 510	610 630 630 660 660 690 690	1.8 1.5 1.8 2.1 2.4 2.7 2.9
	EF 300	Fluid Cap FC3 & & Air Cap AC1003	0.7 1.1 1.4 1.8 2.1 2.8 3.5	9	1.87 2.38 2.72 3.23 3.56 4.42 5.10	1.1 1.4 1.8 2.1 2.8 3.5 4.2	10	2.38 2.72 3.23 3.56 4.42 5.10 6.12	1.4 1.8 2.1 2.8 3.5 4.2 4.9	16	2.72 3.23 3.56 4.42 5.10 6.12 7.14	2.5 2.8 3.5 4.2 4.9 5.6 6.3	23	4.08 4.42 5.10 6.12 7.14 8.34 9.54	3.5 4.2 4.9 5.3 5.6 6.3 7.0	33	5.10 6.12 7.14 7.62 8.34 9.54 10.56	0.7 1.8 2.1 2.5 2.8 4.2 5.3	0.2 0.2 0.4 1.4 0.7 1.4 2.8	130 130 130 140 140 140 170	170 170 180 200 190 200 200	250 250 240 320 300 360 300	1.2 1.8 1.8 1.8 2.3 3.0 4.0

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*



Dimensions are approximate. Check with BETE for critical dimension applications.

XA EF Set-up Flow Rates and Dimensions

Pressure-fed, External Mix, Flat Fan Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.2 Bar Liquid			0.3 Bar Liquid			0.7 Bar Liquid			1.5 Bar Liquid			3.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Bar air	Bar liquid	A (mm)	B (mm)	C (mm)	D (m)
1/8 OR 1/4	EF 350	Fluid Cap FC6 & Air Cap AC1002	0.6 0.7 1.1 1.4	13	5.46 6.12 7.80 9.36	0.7 1.1 1.8 2.1	16	6.12 7.80 11.0 12.6	1.4 2.1 2.5 2.8	25	9.36 12.6 14.1 15.6	2.1 2.8 3.5 4.2	37	12.6 15.6 18.6 21.6	3.2 4.2 5.3 5.6	52	17.1 21.6 25.8 27.3	1.4 2.1 2.1 3.2 4.2 3.9	0.3 0.7 1.5 1.5 1.5 2.0	330 330 350 380 380 410	380 400 460 480 480 510	480 560 580 660 640 690	3.8 4.3 4.0 4.6 5.2 4.6
	EF 400	Fluid Cap FC6 & Air Cap AC1004	0.7 1.0 1.4 1.8 2.1 2.8 3.5	13	5.10 6.12 6.96 8.34 9.36 11.7 13.6	1.0 1.4 1.8 2.1 2.8 3.5 4.2	16	6.12 6.96 8.34 9.36 11.7 13.6 16.0	1.4 1.8 2.1 2.5 2.8 3.5 4.2	25	6.96 8.34 9.36 10.7 11.7 13.6 16.0	2.5 2.8 3.5 4.2 4.9 5.6 6.3	37	10.7 11.7 13.6 16.0 18.7 21.6 24.7	3.2 3.5 3.9 4.2 4.9 5.6 6.3	52	12.7 13.9 15.3 16.5 18.8 21.6 24.7	0.7 1.8 2.1 2.5 2.5 4.2 4.9	0.2 0.2 0.4 0.7 1.4 1.4 2.8	130 130 150 150 170 170 170	190 190 190 220 230 230 220	250 250 280 280 360 370 320	1.7 2.7 3.0 3.5 3.7 4.3 4.9
	EF 450	Fluid Cap FC2 & Air Cap AC1002	0.6 1.1 1.4 1.8	18	5.46 7.80 9.36 11.0	0.7 1.4 1.8 2.1	22	6.12 9.36 11.0 12.6	1.1 1.8 2.5 2.8	33	7.80 11.0 14.1 15.6	2.5 3.2 3.9 4.2	48	14.1 17.1 19.8 21.6	3.5 4.6 6.0 6.7	68	18.6 22.8 28.5 31.5	1.1 1.8 2.5 3.2 4.2 4.2 4.9	0.2 0.7 1.5 1.5 1.5 2.0 3.0	330 350 380 330 300 330 330	380 480 460 430 430 430 430	510 640 640 610 580 610 600	3.5 3.0 3.8 4.3 4.9 5.2 4.0
	EF 500	Fluid Cap FC2 & Air Cap AC1004	0.7 1.0 1.4 1.8 2.1 2.8 3.5	18	5.10 6.12 6.96 8.34 9.36 11.7 13.6	1.4 1.8 2.1 2.5 2.8 3.5 4.2	22	6.96 8.34 9.36 10.7 11.7 13.6 16.0	1.8 2.1 2.5 2.8 3.5 4.2 4.9	33	8.34 9.36 10.7 11.7 13.6 16.0 18.7	2.8 3.2 3.5 4.2 4.9 5.6 6.3	48	11.7 12.7 13.6 16.0 18.7 21.6 24.7	3.5 4.2 4.9 5.3 5.6 6.3 6.6	68	13.9 16.5 18.8 20.4 21.6 24.7 25.7	0.7 1.8 2.5 2.8 2.8 4.2 5.3	0.4 0.7 1.4 1.4 1.4 2.1 2.8	150 150 150 150 170 170 180	190 190 220 220 250 250 230	270 270 330 360 370 370 360	2.1 3.0 3.4 3.8 4.0 4.9 5.8
	EF 550	Fluid Cap FC1 & Air Cap AC1002	0.7 1.1 1.4 1.8	36	6.12 7.80 9.36 11.0	1.1 1.4 2.1 2.5	45	7.80 9.36 12.6 14.1	1.8 2.1 2.8 3.2	68	11.0 12.6 15.6 17.1	3.2 3.5 4.9 5.9	100	17.1 18.6 24.3 27.3	5.3 6.0 6.7 7.0	141	25.8 28.5 31.5 33.0	2.1 2.8 3.2 4.6 5.6 3.9 6.3	0.3 0.7 1.5 1.5 1.5 2.0 3.0	400 460 480 430 380 480 410	560 580 580 530 510 640 560	760 810 790 760 660 840 790	3.0 4.0 4.3 4.9 5.8 4.3 5.8
	EF 600	Fluid Cap FC1 & Air Cap AC1004	1.0 1.4 1.8 2.1 2.5 2.8 3.5	36	6.12 6.96 8.34 9.36 10.7 11.7 13.6	1.8 2.1 2.5 2.8 3.2 3.5 4.2	45	8.34 9.36 10.7 11.7 12.7 13.6 16.0	2.5 2.8 3.2 3.5 4.2 4.9 5.6	68	10.7 11.7 12.7 13.6 16.0 18.7 21.6	3.2 3.5 3.9 4.2 4.9 5.6 6.3	100	12.7 13.6 14.8 16.0 18.7 21.6 24.7	3.9 4.2 4.6 4.9 5.6 6.3 7.0	141	15.3 16.5 17.8 18.8 21.6 24.7 27.2	1.0 2.1 2.8 3.2 3.5 4.2 5.6	0.2 0.2 0.4 1.4 0.7 1.4 2.8	150 150 180 200 190 200 180	200 220 240 280 270 280 240	250 290 360 390 380 390 380	2.7 3.0 3.5 3.7 4.0 4.3 5.9
	EF 650	Fluid Cap FC8 & Air Cap AC1005	1.8 2.1 2.5 2.8 3.2 3.5 4.2	36	14.1 15.6 18.0 19.8 21.3 22.8 26.7	1.8 2.1 2.5 2.8 3.2 3.5 4.2	45	14.1 15.6 18.0 19.8 21.3 22.8 26.7	2.5 2.8 3.2 3.5 3.9 4.2 4.9	68	18.0 19.8 21.3 22.8 24.6 26.7 31.2	3.9 4.2 4.6 4.9 5.3 5.6 6.3	100	24.6 26.7 28.8 31.2 33.9 36.0 41.1				1.8 2.8 2.8 3.5 3.9 4.2 4.9	0.2 0.2 0.3 0.7 1.5 1.0 1.5	150 150 150 170 170 170 170	200 200 200 220 220 230 230	290 300 300 320 340 330 340	3.0 3.4 4.0 4.3 4.6 4.7 5.5
	EF 700	Fluid Cap FC9 & Air Cap AC1005	2.1 2.5 2.8 3.2 3.5 4.2 4.9	64	15.6 18.0 19.8 21.3 22.8 26.7 31.2	2.8 3.2 3.5 3.9 4.2 4.9 5.6	78	19.8 21.3 22.8 24.6 26.7 31.2 36.0	3.9 4.2 4.6 4.9 5.3 5.6 6.3	119	24.6 26.7 28.8 31.2 33.9 36.0 41.1	4.9 5.3 5.6 6.0 6.3	175	31.2 33.9 36.0 38.4 41.1				2.1 3.2 3.9 4.9 4.9 5.3 5.6	0.2 0.2 0.3 0.7 1.5 1.0 1.5	170 180 180 180 200 180 200	240 240 250 250 250 250 250	340 360 360 360 380 380 380	3.5 4.3 4.9 5.5 5.5 5.8 6.1
	EF 750	Fluid Cap FC5 & Air Cap AC1005	2.8 3.2 3.5 3.9 4.2 4.6 4.9	102	19.8 21.3 22.8 24.6 26.7 28.8 31.2	3.5 3.9 4.2 4.6 4.9 5.3 5.6	125	22.8 24.6 26.7 28.8 31.2 33.9 36.0	4.6 4.9 5.3 5.6 6.0 6.3	192	28.8 31.2 33.9 36.0 38.4 41.1	5.6 6.0 6.3	280	36.0 38.4 41.1				2.8 3.9 4.6 5.3 5.6 5.6 6.0	0.2 0.2 0.3 0.7 1.0 1.5 1.5	190 200 200 220 220 220 220	250 250 250 270 270 270 270	360 370 370 380 410 410 410	4.6 4.9 5.2 5.5 5.5 5.8 6.1

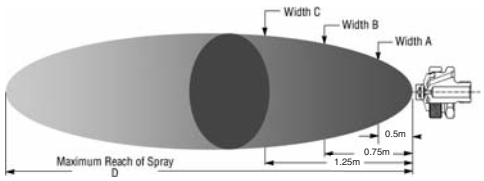
Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

XAER

Pressure-fed/Ext. Mix/Narrow Angle Round

DESIGN/SPRAY CHARACTERISTICS

- External mix: allows spraying of viscous liquids
- Variable atomization
- Narrow spray angle (10°- 30°)
- Precise metering of liquid flow rate



Dimensions are approximate. Check with BETE for critical dimension applications.

1/4" XAER850A
XA 00 Body; A Hardware

XA ER Set-up Flow Rates and Spray Dimensions

Pressure-fed, External Mix, Narrow Round Spray Pattern, 1/8" and 1/4" Pipe Sizes

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.2 BAR Liquid			0.3 BAR Liquid			0.7 BAR Liquid			1.5 BAR Liquid			3 BAR Liquid			Spray Dimensions					
			BAR air	L/h	Nm^3/h	BAR air	L/h	Nm^3/h	BAR air	L/h	Nm^3/h	BAR air	L/h	Nm^3/h	BAR air	L/h	Nm^3/h	BAR Liquid	BAR Air	A mm	B mm	C mm	D m
1/8" or 1/4"	ER 050	Fluid Cap FC7 & Air Cap AC1801	0.3 0.7 1.4 2.1	2.7	1.3 1.9 2.9 3.7	0.3 0.7 1.4 2.1 2.8	3	1.3 1.9 2.9 3.7 4.6	0.3 0.7 1.4 2.1 2.8 3.4	4.4	1.3 1.9 2.9 3.7 4.6 5.6	0.7 1.4 2.1 2.8 3.4 4.1 5.5	6.6	1.9 2.9 3.7 4.6 5.6 6.5 8.5	1.4 2.1 2.8 3.4 4.1 4.8 6.2	9.5	2.9 3.7 4.6 5.6 6.5 7.6 9.4	0.2 0.3 0.3 0.7 1.5 1.5 3.0	0.7 1.4 2.8 2.8 1.4 2.8 4.1	50 60 40 60 60 60 70	90 90 90 80 60 60 70	130 110 130 130 80 90 100	2.3 3 3.7 4.9 4.3 5.5 6.1
	ER 150	Fluid Cap FC4 & Air Cap AC1801	0.3 0.7 1.4 2.1 2.8	3.7	1.3 1.9 2.9 3.7 4.6	0.3 0.7 1.4 2.1 2.8 3.4	4.5	1.3 1.9 2.9 3.7 4.6 5.6	0.7 1.4 2.1 2.8 3.4 4.1	7.4	1.9 2.9 3.7 4.6 5.6 6.5	1.4 2.1 2.8 3.4 4.1 4.8 6.2	11	2.9 3.7 4.6 5.6 6.5 7.6 9.4	1.4 2.1 2.8 3.4 4.1 4.8 6.2	15	2.9 3.7 4.6 5.6 6.5 7.6 9.4	0.2 0.3 0.3 0.7 1.5 1.5 3.0	0.7 1.4 2.8 2.8 1.4 2.8 4.1	50 60 60 60 80 70 80	60 80 60 80 80 90 100	80 80 110 100 130 100 140	3 4.3 4.9 5.5 4 5.5 6.1
	ER 250	Fluid Cap FC3 & Air Cap AC1801	0.4 0.7 1.4 2.1 2.8 3.4	7.7	1.4 1.9 2.9 3.7 4.6 5.6	0.7 1.4 2.1 2.8 3.4 4.1	9.5	1.9 2.9 3.7 4.6 5.6 6.5	0.7 1.4 2.1 2.8 3.4 4.1	15	1.9 2.9 3.7 4.6 5.6 6.5	1.4 2.1 2.8 3.4 4.1 4.8 6.2	18	2.9 3.7 4.6 5.6 6.5 7.6 9.4	2.8 3.4 4.1 4.8 5.5 6.2	23	4.6 5.6 6.5 7.6 8.5 9.4	0.2 0.3 0.3 0.7 1.5 1.5 3.0	0.7 1.4 2.8 2.8 1.4 2.8 4.1	80 80 70 80 80 80 90	90 80 80 90 110 100 100	100 130 120 130 110 130 130	3 4.3 4.3 5.2 5.5 4.9 5.2
	ER 350	Fluid Cap FC6 & Air Cap AC1802	0.7 1.0 1.4 2.1 2.8 3.4	12	5.5 7.2 8.8 11.6 14.3 17	0.7 1.4 2.1 2.8 3.4 4.1	15	5.5 8.8 11.6 14.3 17.0 19.6	1.4 2.1 2.8 3.4 4.1	22	8.8 11.6 14.3 17 19.6	2.1 2.8 3.4 4.1 4.8 5.5 6.2	32	11.6 14.3 17 19.6 22.3 25.1 26.9	2.8 3.4 4.1 4.8 5.5 6.2	47	14.3 17 19.6 22.3 25.1 26.9	0.2 0.3 0.3 0.7 1.5 1.5 3.0	0.7 1.4 2.8 2.8 2.1 4.1 4.1	80 80 80 80 80 80 80	130 100 100 100 100 130 130	150 150 150 150 150 180 150	2.7 3.4 4.9 4.9 4.6 5.2 5.5
	ER 450	Fluid Cap FC2 & Air Cap AC1802	0.7 1 1.4 2.1 2.8 3.4	19	5.5 7.2 8.8 11.6 14.3 17	0.7 1 1.4 2.1 2.8 3.4 4.1	23	5.5 7.2 8.8 11.6 14.3 17 19.6	1 1.4 2.1 2.8 3.4 4.1 4.8	33	7.2 8.8 11.6 14.3 17 19.6 22.2	2.1 2.8 3.4 4.1 4.8 5.5	49	11.6 14.3 17 19.6 22.3 25.1	2.8 3.4 4.1 4.8 5.5	72	14.3 17 19.6 22.3 25.1	0.2 0.3 0.3 0.7 1.5 1.5 3.0	0.7 1.4 2.8 2.8 2.1 4.1 4.1	100 110 100 130 120 100 110	140 130 110 120 110 130 100	210 150 140 180 160 180 180	4.3 5.5 6.4 6.7 6.1 6.7 6.7
	ER 550	Fluid Cap FC1 & Air Cap AC1802	1 1.4 2.1 2.8 3.4	39	7.2 8.8 11.6 14.3 17	1.4 2.1 2.8 3.4 4.1	46	8.8 11.6 14.3 17 19.6	2.1 2.8 3.4 4.1 4.8 5.5	68	11.6 14.3 17 19.6 22.3 25.1	2.8 3.4 4.1 4.8 5.5	97	14.3 17 19.6 22.3 25.1	3.4 4.1 4.8 5.5	119	17 19.6 22.3 25.1	0.2 0.3 0.3 0.7 1.5 1.5 3.0	1.4 1.4 2.8 4.1 2.8 4.1 5.5	140 130 130 140 110 110 100	150 150 170 150 150 130 130	220 230 180 240 180 180 140	4.9 4.6 6.4 6.7 6.7 6.7 6.7
	ER650	Fluid Cap FC8 & Air Cap AC1803	1.0 1.4 1.7 2.1 2.8 3.4 4.1	39	11.6 14.1 16.6 18.8 23.2 27.7 31.9	1.4 1.7 2.1 2.8 3.4 3.8 4.1	46	14.1 16.6 18.8 23.2 27.7 29.8 31.9	2.1 2.8 3.4 3.8 4.1 4.5 4.8	68	18.8 23.2 27.7 29.8 31.9 34.0 36.1	3.4 3.8 4.1 4.5 4.8 5.5 6.2	97	27.7 29.8 31.9 34 36.1 40.5 44.8				0.2 0.3 0.3 0.7 1.5 1.5 1.5	1.4 2.1 3.4 4.1 3.4 4.8 6.2	130 150 120 130 130 100 100	150 140 130 140 150 130 130	200 150 160 170 150 180 180	5.2 6.7 6.7 6.7 6.7 5.5 5.5
	ER750	Fluid Cap FC9 & Air Cap AC1803	1.4 2.1 2.8 3.4 3.8 4.1 4.8	65	14.1 18.8 23.2 27.7 29.8 31.9 36.1	2.1 2.8 3.4 4.1 4.5 4.8 5.5	76	18.8 23.2 27.7 31.9 34 36.1 40.5	2.8 3.4 4.1 4.5 4.8 5.5 6.2	110	23.2 27.7 31.9 34 36.1 40.5 44.8	3.4 3.8 4.1 4.5 4.8 5.5 6.2	165	27.7 29.8 31.9 34 36.1 40.5 44.8				0.2 0.3 0.3 0.7 1.5 1.5 1.5	1.4 2.1 4.1 4.1 3.4 4.8 6.2	150 140 150 130 130 100 100	150 160 170 130 150 130 150	220 200 180 180 200 200 200	5.8 6.4 6.7 6.7 6.1 5.8 5.8
	ER850	Fluid Cap FC5 & Air Cap AC1803	2.8 3.4 3.8 4.1 4.5	95	23.2 27.7 29.8 31.9 34	3.8 4.1 4.5 4.8 5.5	109	29.8 31.9 34 36.1 40.5	4.5 4.8 5.5 6.2	158	34 36.1 40.5 44.8	5.5 6.2	234	40.5 44.8				0.2 0.3 0.7 0.7 1.5 1.5	2.8 4.8 4.8 6.2 5.5 6.2	150 90 90 80 90 80	160 110 110 100 100 100	180 180 150 150 150 140	6.7 6.1 5.8 5.5 5.5 5.8

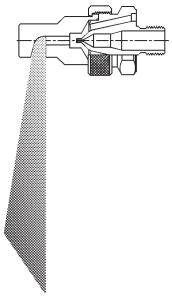
Standard Materials: Nickel Plated Brass, 303 Stainless Steel, and 316 Stainless Steel.

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

XAFF

Pressure-fed/Int. Mix/Deflected Flat Fan

DESIGN/SPRAY CHARACTERISTICS
- Internal mix
- Very fine atomization
- Deflected flat fan spray pattern



1/4"XA 01 FF050 F
XA01 Body; F Hardware

XA FF Set-up Flow Rates

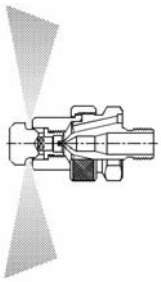
Pressure-fed, Internal Mix, Deflected Flat Fan Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid		
			Air (bar)	l/hr	$\frac{Nm^3}{hr}$	Air (bar)	l/hr	$\frac{Nm^3}{hr}$	Air (bar)	l/hr	$\frac{Nm^3}{hr}$	Air (bar)	l/hr	$\frac{Nm^3}{hr}$	Air (bar)	l/hr	$\frac{Nm^3}{hr}$
1/8 or 1/4	FF 050	Fluid Cap FC10 & Air Cap AC1701	0.4	**11.0**	2.70	1.1	**14.5**	4.74	1.5	**15.7**	5.76	2.1	**20.0**	6.84	2.7	**26.0**	7.98
			0.6	**9.5**	3.24	1.3	**13.2**	5.16	1.7	**14.3**	6.24	2.2	**19.2**	7.26	3.2	**22.0**	9.60
			0.7	**7.6**	3.90	1.4	**11.8**	5.70	1.8	**12.9**	6.72	2.7	**15.8**	8.76	3.8	**17.7**	11.2
			0.8	**5.7**	4.62	1.5	**10.0**	6.18	2.1	**9.8**	7.80	3.1	**11.8**	10.4	4.4	**13.1**	13.8
						1.7	**8.7**	6.78	2.2	**8.3**	8.52	3.2	**10.3**	11.0	4.6	**10.2**	15.0

XAXW

Pressure-fed/Int. Mix/Extra-wide Angle

DESIGN/SPRAY CHARACTERISTICS
- Internal mix
- Very fine atomization
- 180° Extra-wide Hollow Cone



1/4"XA 03 XW050 A
XA 03 Body; A Hardware

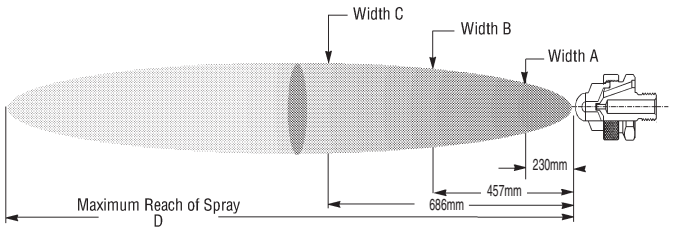
XA XW Set-up Flow Rates

Pressure-fed, Internal Mix, Extra-wide Spray Pattern, 1/8" and 1/4" Pipe Sizes, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.7 Bar Liquid			1.5 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid		
			Air (bar)	l/h	$\frac{Nm^3}{h}$	Air (bar)	l/h	$\frac{Nm^3}{h}$	Air (bar)	l/h	$\frac{Nm^3}{h}$	Air (bar)	l/h	$\frac{Nm^3}{h}$	Air (bar)	l/h	$\frac{Nm^3}{h}$
1/8 or 1/4	XW 050	Fluid Cap FC8 & Air Cap AC1401	1.4	**15.1**	4.14	2.8	**19.5**	8.52	3.5	**21.0**	11.1	4.2	**48.0**	12.6	6.0	**45.0**	20.4
			1.5	**10.6**	4.62	3.0	**16.1**	9.18	3.7	**17.6**	11.8	4.6	**37.0**	14.4	6.3	**37.0**	22.5
			1.7	**7.6**	5.04	3.1	**13.2**	9.90	3.8	**14.8**	12.6	4.9	**28.0**	16.5	6.7	**30.0**	24.3
			1.8	**5.7**	5.58	3.2	**10.6**	10.6	3.9	**12.5**	13.2	5.6	**15.5**	20.4	7.0	**24.0**	26.4
			2.0	**4.2**	6.18	3.4	**8.3**	11.3	4.2	**8.1**	14.7	6.3	**7.8**	25.5			

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

1/2XA



Air Atomizing

Dimensions are approximate. Check with BETE for critical dimension applications.

AD — 1/2" XA AD Set-up Flow Rates and Dimensions

Pressure-fed, Internal Mix, Wide Angle Round Spray Pattern, 1/2" Pipe Size, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.35 Bar Liquid			1.0 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	bar air	bar liquid	A (mm)	B (mm)	C (mm)	D (m)
1/2	AD 5050	Fluid Cap FC501 & Air Cap AC5601							2.1	213	10.6	3.1	316	12.8	4.2	238	21.1	2.1	2.0	360	480	690	6.7
									2.3	127	14.9	3.2	195	17.5	4.3	154	26.3	3.2	3.0	360	480	690	7.3
												3.4	107	22.3	4.5	100	31.3	4.3	4.0	360	480	690	8.5
	AD 5100	Fluid Cap FC501 & Air Cap AC5602	0.6	102	11.0	1.1	215	9.18	2.5	185	21.3	3.7	192	33.6	5.0	230	49.8	0.7	0.35	330	470	650	6.1
			0.7	57	13.8	1.3	124	13.8	2.7	146	24.6	3.9	150	37.2	5.3	158	56.4	1.3	1.0	340	480	670	7.9
			0.85	32	16.8	1.4	84	16.8	2.8	112	27.9	4.0	119	40.8	5.6	108	64.8	2.8	2.0	330	470	650	6.4
									3.0	86	31.2	4.2	86	46.2				4.0	3.0	340	480	670	7.3
									3.1	65	34.8	4.6	51					5.3	4.0	360	480	690	8.2
	AD 5150	Fluid Cap FC501 & Air Cap AC5603	0.7	129	19.5	1.7	182	32.4	3.1	265	48.6	4.3	350	60.0				0.85	0.35	360	500	690	7.9
			0.85	82	22.2	1.8	143	35.4	3.2	215	51.6	4.6	260	64.8				1.7	1.0	330	480	660	7.3
			1.0	45	24.9				3.4	173	54.6	5.0	186	72.0				3.4	2.0	330	470	660	7.0
									3.5	136	57.0							4.6	3.0	360	500	690	8.5
									3.6	120	58.8												
	AD 5200	Fluid Cap FC502 & Air Cap AC5604	0.7	134	18.9	1.3	320	26.4	2.1	575	34.2	3.0	740	42.6	3.9	840	51.6	0.7	0.35	330	640	910	3.4
			0.85	100	22.8	1.4	255	31.2	2.2	505	38.4	3.1	690	46.2	4.1	790	55.8	1.4	1.0	330	660	910	4.9
						1.5	200	35.4	2.4	440	43.2	3.2	630	50.4	4.2	740	59.4	2.5	2.0	280	560	810	6.1
						1.7	154	40.2	2.5	380	47.4	3.4	570	54.6	4.4	690	64.2	3.4	3.0	280	530	740	6.7
									2.7	330	51.6	3.5	520	58.8	4.5	650	68.4	4.5	4.0	280	560	790	7.6
									2.8	275	55.8	3.7	470	63.0	4.6	600	72.6						
									3.0	235	60.6	3.8	420	67.2	4.8	550	76.8						
									3.1	195	64.8	3.9	345	71.4	4.9	510	81.0						
												4.1	325	75.6	5.1	465	85.8						
															5.2	425	89.4						
															5.3	390	93.6						
															5.5	350	98.4						

PR — 1/2" XA PR Set-up Flow Rates and Dimensions

Pressure-fed, Internal Mix, Round Spray Pattern, 1/2" Pipe Size, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.35 Bar Liquid			1.0 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	Air (bar)	l/h	Nm^3/h	bar air	bar liquid	A (mm)	B (mm)	C (mm)	D (m)
	PR 5050	Fluid Cap FC501 & Air Cap AC5501	1.3	34	21.0	1.7	146	21.9	3.0	230	30.6							1.4	0.35	90	160	250	6.7
			1.4	25	23.4	1.8	121	23.7	3.1	200	33.0							2.0	1.0				7.3
			1.5	20	24.9	2.0	102	25.8	3.2	176	35.4							3.2	2.0				8.2
			1.7	15.5	26.7	2.1	86	27.6	3.4	154	37.2												
						2.3	72	29.4	3.5	135	39.6												
						2.4	60	31.2	3.6	118	42.0												
1/2	PR 5100	Fluid Cap FC502 & Air Cap AC5502	0.7	134	18.9	1.3	320	26.4	2.1	575	34.2	3.0	740	42.6	3.9	840	51.6	0.7	0.35	100	180	230	7.0
			0.85	100	22.8	1.4	255	31.2	2.2	505	38.4	3.1	690	46.2	4.1	790	55.8	1.4	1.0	150	250	330	6.4
						1.5	200	35.4	2.4	440	43.2	3.2	630	50.4	4.2	740	59.4	2.5	2.0	130	200	250	11.3
						1.7	154	40.2	2.5	380	47.4	3.4	570	54.6	4.4	690	64.2	3.4	3.0	100	180	250	12.5
									2.7	330	51.6	3.5	520	58.8	4.5	650	68.4	4.5	4.0	100	180	250	14.3
									2.8	275	55.8	3.7	470	63.0	4.6	600	72.6						
									3.0	235	60.6	3.8	420	67.2	4.8	550	76.8						
									3.1	195	64.8	3.9	345	71.4	4.9	510	81.0						
												4.1	325	75.6	5.1	465	85.8						
															5.2	425	89.4						
															5.3	390	93.6						
															5.5	350	98.4						

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel

TO ORDER: *specify pipe size, body style, spray set-up #, hardware and mounting assemblies, and material. See page 78.*

Dimensions are approximate. Check with BETE for critical dimension applications.

EF

1/2" XA EF Set-up Flow Rates and Dimensions

Pressure-fed, External Mix, Flat Fan Spray Pattern, 1/2" Pipe Size, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.2 Bar Liquid			0.35 Bar Liquid			0.5 Bar Liquid			0.7 Bar Liquid			1.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	bar air	bar liquid	A (mm)	B (mm)	C (mm)	D (m)
1/2	EF 5050	Fluid Cap FC501 & Air Cap AC5001	2.1 2.5 2.8 3.2	**522**	52.6 57.7 64.5 70.4	2.8 3.2 3.5 3.9 4.2	**681**	64.5 70.4 76.4 81.5 87.4	3.2 3.5 3.9 4.2 4.6 4.9	**795**	70.4 76.4 81.5 87.4 93.3 98.4	3.9 4.2 4.9 5.3 5.6 6.0	**953**	81.5 87.4 98.4 105 110 117	5.6 6.0 6.3 6.6 7.0	**1158**	110 117 122 127 132	2.5 3.5 3.9 4.9 6.3	0.2 0.4 0.5 0.7 1.0	216 229 241 241 254	368 420 445 460 480	520 550 580 610 660	5.80 6.71 7.02 7.63 8.85

PF

1/2" XA PF Set-up Flow Rates and Dimensions

Pressure-fed, Internal Mix, Flat Fan Spray Pattern, 1/2" Pipe Size, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.35 Bar Liquid			1.0 Bar Liquid			2.0 Bar Liquid			3.0 Bar Liquid			4.0 Bar Liquid			Spray Dimensions					
			Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	bar air	bar liquid	A (mm)	B (mm)	C (mm)	D (m)
	PF 5050	Fluid Cap FC501 & Air Cap AC5301				1.8 2.0 2.1	**154** **119** **93**	35.4 38.4 41.4	3.4 3.5 3.7 3.8	**184** **157** **133** **112**	57.0 60.6 63.6 66.6							2.0 3.5	1.0 2.0	460 510	740 790	910 970	5.8 7.0
1/2	PF 5100	Fluid Cap FC502 & Air Cap AC5302	0.7 0.85	**134** **100**	18.9 22.8	1.3 1.4 1.5 1.7	**320** **255** **200** **154**	26.4 31.2 35.4 40.2	2.1 2.2 2.4 2.5 2.7 2.8 3.0 3.1	**575** **505** **440** **380** **330** **275** **235** **195**	34.2 38.4 43.2 47.4 51.6 55.8 60.6 64.8	3.0 3.1 3.2 3.4 3.5 3.7 3.8 3.9 4.1	**740** **690** **630** **570** **520** **470** **420** **345** **325**	40.8 43.2 46.1 50.8 54.1 59.3 63.3 69.2 74.1	3.9 4.1 4.2 4.4 4.5 4.6 4.8 4.9 5.1 5.2 5.3 5.5	**840** **790** **740** **690** **650** **600** **550** **510** **465** **425** **390** **350**	51.6 55.8 59.4 64.2 68.4 72.6 76.8 81.0 85.8 89.4 93.6 98.4	0.7 1.4 2.5 3.4 4.5	0.35 1.0 2.0 3.0 4.0	510 860 860 910 910	860 1570 1570 1680 1700	1190 2110 2080 2160 2260	4.0 4.6 5.2 5.8 6.4

SR

1/2" XA SR Set-up Flow Rates and Dimensions

Siphon-fed, External Mix, Round Spray Pattern, 1/2" Pipe Size, BSP or NPT

Pipe Size	Set-up Number	Fluid and Air Cap Numbers	ATOMIZING AIR		Liquid Capacity in l/h (Liters Per Hour)							Spray Dimensions at 200 mm Siphon Ht.		
					Gravity Head			Siphon Height						
			Air (bar)	Air Capacity (Nm^3/h)	450 mm	**300 mm**	150 mm	100 mm	200 mm	**300 mm**	600 mm	Air (bar)	B (mm)	D (m)
1/2	SR 5050	Fluid Cap FC501 & Air Cap AC5201	0.7 1.5 2.0 3.0 3.5 4.0 5.0 5.6	21.6 34.2 39.6 52.2 59.4 66.0 78.0 87.0	 300 305 315 320	 **260** **265** **270** **280** **290**	 225 235 240 250 255	40 97 117 150 163 170 183 188	 64 90 123 133 143 157 164	 **90** **104** **115** **129** **136**	 53 62	1.5 2.0 3.0 3.5 4.0 5.0 5.6	 150	6.1 6.7 7.3 7.9 8.8 9.8 10.7

XW

1/2" XA XW Set-up Flow Rates and Dimensions

Pressure-fed, Internal Mix, Extra-wide Angle, Hollow Cone Spray Pattern, 1/2" Pipe Size, BSP or NPT

Pipe Size	Spray Set-up Number	Fluid and Air Cap Numbers	0.7 Bar Liquid			1.4 Bar Liquid			2.1 Bar Liquid			2.8 Bar Liquid			4.2 Bar Liquid		
			Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h	Air (bar)	l/h	Nm^3 h
1/2	XW 5050	Fluid Cap FC502 & Air Cap AC5401	1.0 1.1 1.3 1.4	**213** **145** **98** **59**	20.7 25.1 34.5 32.3	1.7 1.8 2.0 2.1 2.3 2.4 2.5 2.7	**394** **324** **275** **207** **159** **116** **93** **27**	27.2 31.6 34.4 38.5 42.1 45.5 49.7 54.0	2.5 2.7 2.8 3.0 3.1 3.2 3.4 3.5	**439** **372** **322** **277** **272** **188** **145** **114**	38.0 42.1 45.0 49.1 52.4 55.8 59.4 63.0	3.4 3.5 3.7 3.8 3.9 4.1 4.2 4.4 4.5 4.6	**462** **416** **372** **325** **282** **250** **209** **168** **141** **77**	47.2 50.6 53.4 57.3 61.1 65.0 68.1 71.3 75.5 77.7	5.0 5.2 5.3 5.5 5.6 5.8 5.9 6.0 6.3	**484** **439** **409** **366** **325** **297** **257** **232** **182**	68.3 71.8 75.2 78.6 82.0 85.7 89.1 93.0 100

Standard Materials: Nickel-plated Brass, 303 Stainless Steel, and 316 Stainless Steel