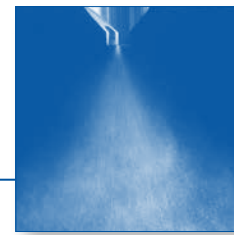




Pneumatic atomizing nozzles
ViscoMist™ flat fan, external mix
Series 176



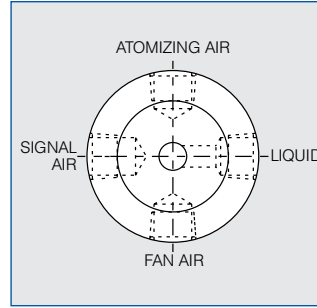
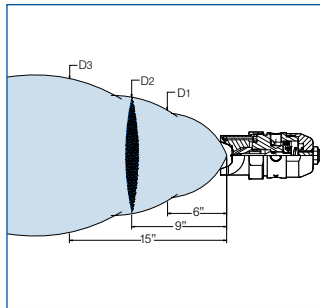
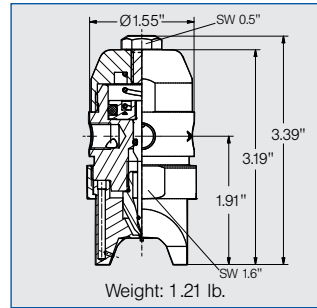
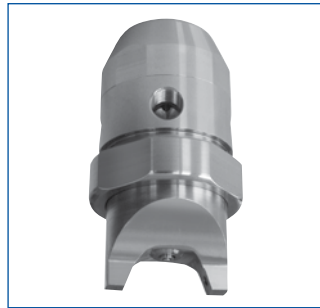
Pneumatic atomizing

Versatile design with built-in pneumatic needle valve for liquid flow control and automatic clean-out. Three nozzle body configurations offer flexible tailoring to your specific application needs. Models feature individual controls for on-off operation, atomizing air, and fan air, allowing adjustments to droplet size and spray pattern as appropriate without compromising required flow. Has been newly redesigned for greater anti-bearding.

Applications:

- Spraying viscous fluids
- Coating
- Glazing
- Sanitizing
- Humidification
- Recirculating liquids

All nozzle inlet connections:
 1/8" female NPT



* For additional body styles, contact Lechler.

Nozzle Body 4*

This configuration has four process connections: one for liquid, and three for air. One air connection controls atomizing air, one controls fan air, and the third controls signal air for on-off operations, so each aspect can be individually adjusted. Therefore, atomizing air can be set at less than 40 psi if desired without affecting the on-off operation, for instance.

The ViscoMist™ has greatly minimized the following problem, but it is still a situation to be aware of:

Bearding/Caking

- *What is it*—Build-up of material around the inside or outside of the orifice due to evaporation of the liquid being sprayed. This dried solid material blocks all or part of the nozzle orifice or internal flow passages.
- *Symptoms*
 - Reduced flow rate
 - Reduced spray angle
 - Irregular spray pattern
- *Solution*—Thoroughly clean nozzle, if necessary, using cleansers and solvents which will not affect the nozzle material.

Description of inlet ports and their symbols

The ViscoMist™ has three Nozzle Body styles available. For all styles, next to each inlet port on the nozzle is stamped one or more letters representing the spray aspect(s) that port controls. These spray aspects and the letter representing each are as follows:

Atomizing Air (A)

The Atomizing Air Port influences the atomization of the liquid into either small or large droplet sizes, simultaneously affecting spray distribution in the center of the spray pattern. To achieve finer liquid atomization, increase the atomizing air pressure.

Fan Air (F)

The Fan Air Port flattens the atomized liquid, thus giving it a flat fan spray distribution. With the appropriate nozzle body configuration, this distribution can be adjusted independently to control the liquid spray width. To achieve a wider spray distribution, increase the fan air pressure.

Liquid(M)

The liquid flow rate is directly proportional to the liquid pressure rate. Subsequently, the higher the liquid pressure rate is, the higher the liquid flow rate will be. The liquid "On" or "Off" cycle is dependent on the Piston-controlled Signal Air supply.

Signal Air (P)

Air supplied to this port actuates a piston located within the nozzle to retract or extend the Clean-Out/Liquid Shut-Off Needle. Retracting the needle allows the liquid to flow from the nozzle. A minimum of 40 psi air pressure to this port is required to operate the nozzle.



For ViscoMist replacement kits, see page 58.





Pneumatic atomizing nozzles

ViscoMist flat fan, external mix

Series 176



Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*		Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)											
										0*			5			10			20		
			D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3							
4	176. 401. 1Y. 01	.015	2.2	.50	2.2	.44	.59	5	5	2	3	5	5	5	8	5	7	9	7	8	9
			3.6	.66	3.6	.57	.76		10	2	2	4	4	7	9	7	9	13	10	12	14
			4.4	.74	4.4	.64	.85		20	-	-	6	8	12	9	13	15	11	13	16	
			5	.80	5	.67	.91	10	5	2	3	4	5	6	7	6	7	10	8	10	13
			10	1.2	10	.96	1.3		10	2	3	4	4	5	7	6	8	10	9	11	14
			15	1.5	15	1.2	1.7		20	-	-	5	7	8	7	10	14	10	13	17	
			20	1.7	20	1.4	2.0	20	5	2	3	4	3	4	6	4	5	7	6	8	10
			30	2.1	30	1.8	2.7		10	2	3	4	2	4	5	4	5	7	6	8	10
			40	2.4	40	2.3	3.3		20	-	-	3	4	6	5	7	8	7	10	13	
			50	2.7	50	2.7	4.0	40	5	2	2	4	2	2	4	2	4	5	7	6	7
			58	3.0	58	3.1	4.5		10	2	3	5	2	3	5	3	4	5	5	7	8
									20	1	2	3	2	3	5	3	4	6	5	7	9

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*		Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)											
										0*			5			10			20		
			D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3							
4	176. 402. 1Y. 01	.023	2.2	1.1	2.2	.46	.59	5	5	2	2	3	6	7	9	6	8	9	8	9	10
			3.6	1.4	3.6	.59	.76		10	-	-	-	5	7	9	8	10	15	12	14	20
			4.4	1.6	4.4	.65	.85		20	-	-	-	-	-	9	12	15	14	16	20	
			5	1.7	5	.69	.91	10	5	2	3	4	4	6	7	5	7	9	7	9	10
			10	2.5	10	.98	1.3		10	2	2	4	5	7	8	6	7	10	10	11	14
			15	3.0	15	1.2	1.7		20	-	-	-	-	-	7	9	12	11	13	16	
			20	3.5	20	1.4	2.0	20	5	2	3	4	3	4	4	5	6	8	5	7	9
			30	4.3	30	1.9	2.7		10	2	2	3	4	5	7	5	6	8	7	8	11
			40	5.1	40	2.3	3.3		20	-	-	-	4	5	8	5	7	9	8	9	13
			50	5.7	50	2.7	4.0	40	5	2	2	3	2	3	4	3	4	5	5	6	7
			58	6.2	58	3.1	4.5		10	1	2	4	2	3	4	4	4	5	5	6	8
									20	2	3	4	3	4	6	4	5	7	6	8	12

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*		Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)											
										0*			5			10			20		
			D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3							
4	176. 403. 1Y. 01	.031	2.2	2.2	2.2	.28	.59	5	5	-	-	-	7	10	12	12	15	18	13	16	20
			3.6	2.9	3.6	.38	.76		10	-	-	-	8	10	12	13	15	19	18	21	27
			4.4	3.3	4.4	.42	.85		20	-	-	-	-	-	12	15	21	17	22	27	
			5	3.5	5	.46	.91	10	5	1	2	3	6	8	11	11	14	18	12	15	19
			10	5.1	10	.68	1.3		10	-	-	-	7	9	13	11	14	18	15	18	23
			15	6.3	15	.86	1.7		20	-	-	-	-	-	11	13	18	14	18	23	
			20	7.3	20	.97	2.0	20	5	2	2	3	5	6	8	7	9	10	9	11	13
			30	9.0	30	1.3	2.7		10	-	-	-	5	7	10	7	9	12	10	12	14
			40	11.7	40	1.6	3.3		20	-	-	-	-	-	9	11	16	12	14	20	
			50	11.7	50	1.9	4.0	40	5	2	2	4	4	5	7	6	7	9	8	9	12
			58	12.7	58	2.2	4.5		10	-	-	-	5	6	8	6	8	10	9	11	15
									20	-	-	-	-	-	7	9	13	9	12	16	

*These pressures are independently controlled so any combination of liquid, atomizing air, and fan air pressures can be selected.
 Total SCFM output is the sum of the separate atomized air and fan air amounts for the individual inlet pressures used. Continued on next page.
 * A cone-shaped spray is most likely to be produced if the fan air function is not utilized.

Material: 316L SS – We reserve the right to deliver material 316 SS or 316L SS, if we show the material code 1Y.

For ViscoMist replacement kits, see page 58.
For various configurations to mount your pneumatic air nozzles, see the Lances and Nozzle Headers section beginning on page 141.



Pneumatic atomizing



Pneumatic atomizing nozzles

ViscoMist flat fan, external mix

Series 176



Pneumatic atomizing

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*			Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)												
										0*			5			10			20			
										D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	
4	176. 404. 1Y. 01	.042	2.2	4.5	2.2	1.4	1.2	5	5	-	-	-	7	10	13	12	15	18	14	16	21	
			3.6	5.8	3.6	1.8	1.6		10	10	-	-	7	10	14	12	15	20	18	21	26	
			4.4	6.4	4.4	2.0	1.7		20	-	-	-	-	-	-	-	-	-	-	-	-	-
			5	6.9	5	2.2	1.9		10	5	-	-	-	5	7	10	8	10	13	11	13	17
			10	9.9	10	3.3	2.7			10	-	-	-	5	6	9	8	10	15	13	16	20
			15	12.1	15	4.3	3.4			20	-	-	-	-	-	-	7	9	13	12	15	23
			20	14.0	20	5.2	4.1	20	5	2	3	4	4	5	7	5	7	9	8	10	13	
			30	17.2	30	6.8	5.3		10	-	-	-	4	5	7	5	7	9	9	11	15	
			40	2.0	40	8.4	6.6		20	-	-	-	4	5	7	6	8	11	8	11	16	
			50	22.4	50	1.1	7.8	40	5	2	3	4	3	4	6	4	5	7	6	7	10	
			58	24.2	58	11.5	8.9		10	2	3	4	3	4	6	4	5	7	6	8	10	
										20	-	-	-	3	4	6	4	5	7	6	8	12

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*			Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)												
										0*			5			10			20			
										D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	
4	176. 405. 1Y. 01	.052	2.2	6.5	2.2	1.3	1.2	5	5	-	-	-	9	11	17	13	17	22	18	21	28	
			3.6	8.4	3.6	1.7	1.6		10	-	-	-	-	-	-	14	18	24	19	23	22	
			4.4	9.3	4.4	1.9	1.7		20	-	-	-	-	-	-	10	14	21	15	22	32	
			5	1.0	5	2.0	1.9		10	5	-	-	-	6	9	13	9	13	18	13	16	21
			10	14.4	10	3.0	2.7			10	-	-	-	-	-	-	10	12	19	14	18	24
			15	17.7	15	4.0	3.4			20	-	-	-	-	-	-	9	13	17	13	18	27
			20	20.2	20	4.7	4.1	20	5	-	-	-	4	6	8	6	8	11	9	11	15	
			30	25	30	6.1	5.3		10	-	-	-	4	6	8	6	8	12	9	12	15	
			40	29	40	7.5	6.6		20	-	-	-	-	-	-	5	8	11	9	12	17	
			50	33	50	8.9	7.8	40	5	2	3	4	3	4	6	4	5	8	6	7	11	
			58	35	58	1.1	8.9		10	-	-	-	3	4	6	4	5	8	6	8	12	
										20	-	-	-	3	4	6	4	5	8	6	8	12

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*			Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)												
										10			15			20			30			
										D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3	
4	176. 406. 1Y. 01	.067	2.2	11.0	2.2	.90	1.2	20	5	8	11	17	10	14	20	12	15	23	12	15	20	
			3.6	14.1	3.6	1.2	1.6		10	8	11	17	10	13	20	12	15	22	-	-	-	
			4.4	15.7	4.4	1.3	1.7		20	8	11	17	10	13	20	12	16	24	-	-	-	
			5	16.8	5	1.4	1.9		30	5	6	9	13	8	11	16	9	12	18	10	13	17
			10	24	10	2.0	2.7			10	7	9	12	8	10	15	9	12	18	11	14	20
			15	30	15	2.6	3.4			20	6	9	13	7	10	14	9	11	17	11	14	20
			20	34	20	3.0	4.1	40	5	6	7	11	7	9	12	7	10	14	8	11	17	
			30	42	30	4.0	5.3		10	6	8	12	7	9	13	7	10	15	9	12	16	
			40	48	40	4.9	6.6		20	5	7	10	6	8	13	7	10	15	9	13	19	
			50	54	50	5.8	7.8	50	5	6	8	12	7	8	13	7	10	14	8	11	16	
			58	58	58	6.6	8.9		10	5	7	10	6	8	13	7	9	14	8	11	17	
										20	5	7	11	6	8	12	7	9	14	9	11	17

*These pressures are independently controlled so any combination of liquid, atomizing air, and fan air pressures can be selected.
 Total SCFM output is the sum of the separate atomized air and fan air amounts for the individual inlet pressures used. Continued on next page.
 * A cone-shaped spray is most likely to be produced if the fan air function is not utilized.

Material: 316L SS – We reserve the right to deliver material 316 SS or 316L SS, if we show the material code 1Y.

For ViscoMist replacement kits, see page 58.
For various configurations to mount your pneumatic air nozzles, see the Lances and Nozzle Headers section beginning on page 141.





Pneumatic atomizing nozzles

ViscoMist flat fan, external mix

Series 176



Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*		Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)											
										10			15			20			30		
			D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3							
4	176. 407. 1Y. 01	.081	2.2	15.6	2.2	2.1	2.0	20	5	5	8	12	8	10	14	10	12	18	13	16	21
			3.6	20	3.6	2.8	2.6		10	5	7	11	7	10	15	9	12	17	12	16	24
			4.4	22	4.4	3.1	2.9	30	5	4	6	9	6	8	11	7	9	14	10	13	19
			5	24	5	3.4	3.1		10	4	6	9	6	8	11	7	10	15	10	13	19
			10	34	10	5.0	4.6	40	20	-	-	-	-	-	-	6	9	13	9	12	17
			15	42	15	6.4	5.9		5	4	5	7	5	7	10	6	8	12	8	11	15
			20	49	20	7.6	7.2	50	10	4	5	8	5	7	10	6	8	12	8	11	16
			30	60	30	1.0	9.4		20	4	5	8	5	6	10	6	8	12	8	11	15
			40	69	40	12.3	11.6	50	5	4	5	6	5	6	9	6	8	10	7	10	16
			50	78	50	14.6	13.7		10	4	5	7	4	6	9	5	8	12	7	10	14
			58	84	58	16.4	15.5		20	3	5	8	4	6	9	5	7	10	7	10	14

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*		Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)											
										10			15			20			30		
			D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3							
4	176. 408. 1Y. 01	.093	2.2	20	2.2	1.6	2.0	20	5	7	10	14	9	12	18	10	14	21	15	19	28
			3.6	26	3.6	2.3	2.6		10	6	8	14	8	11	17	11	15	22	15	21	30
			4.4	28	4.4	2.5	2.9	30	5	5	8	12	7	10	14	8	11	16	11	18	22
			5	30	5	2.7	3.1		10	5	7	10	7	9	14	9	11	16	11	15	21
			10	43	10	4.0	4.6	40	20	-	-	-	6	8	13	8	11	15	11	15	22
			15	53	15	5.1	5.9		5	5	7	9	6	8	11	7	10	14	10	14	18
			20	61	20	6.0	7.2	50	10	4	6	9	6	8	12	7	10	14	9	13	19
			30	74	30	7.9	9.4		20	4	5	8	5	7	11	6	9	14	9	13	18
			40	86	40	9.6	11.6	50	5	4	6	7	5	7	9	6	8	11	8	12	17
			50	95	50	11.3	13.7		10	4	5	7	5	7	10	6	8	12	8	11	18
			58	103	58	12.8	15.5		20	3	5	8	5	6	9	6	8	13	8	12	18

Nozzle Body Configuration (see pg. 54)	Ordering no.	Orifice diam. (in.)	Liq. Capacity*		Air Capacity*			Spray Coverage (in.) at Indicated Distance from Nozzle													
			Inlet Press. (psi)	Liq. Flow (GPH)	Inlet Press. (psi)	Atom. Air (SCFM)	Fan Air (SCFM)	Atom. Air (psi)	Liq. Flow (psi)	Fan Air Pressure (psi)											
										15			20			30					
			D1	D2	D3	D1	D2	D3	D1	D2	D3	D1	D2	D3							
4	176. 409. 1Y. 01	.100	2.2	22	2.2	1.1	2.0	20	5	7	10	16	9	12	18	11	16	21	15	20	27
			3.6	29	3.6	1.9	2.6		10	6	9	14	9	12	18	10	14	22	16	21	31
			4.4	32	4.4	2.2	2.9	30	5	5	8	12	7	10	15	8	11	18	11	14	22
			5	34	5	2.4	3.1		10	5	7	11	7	9	14	8	11	18	11	15	24
			10	48	10	3.9	4.6	40	20	-	-	-	-	-	-	8	10	17	10	15	22
			15	58	15	5.0	5.9		5	4	6	9	6	8	13	7	9	16	10	14	20
			20	68	20	6.0	7.2	50	10	4	6	9	6	8	12	7	10	16	9	14	22
			30	83	30	7.7	9.4		20	4	6	8	6	8	12	7	10	16	9	13	20
			40	96	40	9.6	11.6	50	5	4	6	9	5	7	11	6	8	13	9	12	18
			50	107	50	11.3	13.7		10	4	6	9	6	8	12	6	8	14	9	12	17
			58	115	58	12.9	15.6		20	4	5	8	5	7	10	6	8	13	9	12	18

*These pressures are independently controlled so any combination of liquid, atomizing air, and fan air pressures can be selected.

Total SCFM output is the sum of the separate atomized air and fan air amounts for the individual inlet pressures used.

* A cone-shaped spray is most likely to be produced if the fan air function is not utilized.

Material: 316L SS – We reserve the right to deliver material 316 SS or 316L SS, if we show the material code 1Y.

For ViscoMist replacement kits, see page 58.

For various configurations to mount your pneumatic air nozzles, see the Lances and Nozzle Headers section beginning on page 141.



Replacement kits for the ViscoMist pneumatic atomizing nozzles Series 176



Replacement Kits for the ViscoMist

For replacing the basic wear parts for the ViscoMist, order from the following list:

Ordering no.	Fluid nozzle orifice size (in.)	Description Includes: ① Needle assembly ② O-ring ③ Fluid nozzle
017. 601. 1Y. 01	.015	Wear Replacement Kit, Nozzle #1, 316 SS
017. 602. 1Y. 01	.023	Wear Replacement Kit, Nozzle #2, 316 SS
017. 603. 1Y. 01	.031	Wear Replacement Kit, Nozzle #3, 316 SS
017. 604. 1Y. 01	.042	Wear Replacement Kit, Nozzle #4, 316 SS
017. 605. 1Y. 01	.052	Wear Replacement Kit, Nozzle #5, 316 SS
017. 606. 1Y. 01	.067	Wear Replacement Kit, Nozzle #6, 316 SS
017. 607. 1Y. 01	.081	Wear Replacement Kit, Nozzle #7, 316 SS
017. 608. 1Y. 01	.093	Wear Replacement Kit, Nozzle #8, 316 SS
017. 609. 1Y. 01	.100	Wear Replacement Kit, Nozzle #9, 316 SS

Nozzle fluid tips and spreaders (air caps) are interchangeable to provide various set-up combinations.

For replacing the wear parts and the spreader of the ViscoMist, order the following:

Ordering no.	Fluid nozzle orifice size (in.)	Description Includes: ① Needle assembly ② O-ring ③ Fluid nozzle ④ Spreader (air cap)
017. 601. 1Y. 00	.015	Capacity Replacement Kit, Nozzle #1
017. 602. 1Y. 00	.023	Capacity Replacement Kit, Nozzle #2
017. 603. 1Y. 00	.031	Capacity Replacement Kit, Nozzle #3
017. 604. 1Y. 00	.042	Capacity Replacement Kit, Nozzle #4
017. 605. 1Y. 00	.052	Capacity Replacement Kit, Nozzle #5
017. 606. 1Y. 00	.067	Capacity Replacement Kit, Nozzle #6
017. 607. 1Y. 00	.081	Capacity Replacement Kit, Nozzle #7
017. 608. 1Y. 00	.093	Capacity Replacement Kit, Nozzle #8
017. 609. 1Y. 00	.100	Capacity Replacement Kit, Nozzle #9

Pneumatic atomizing

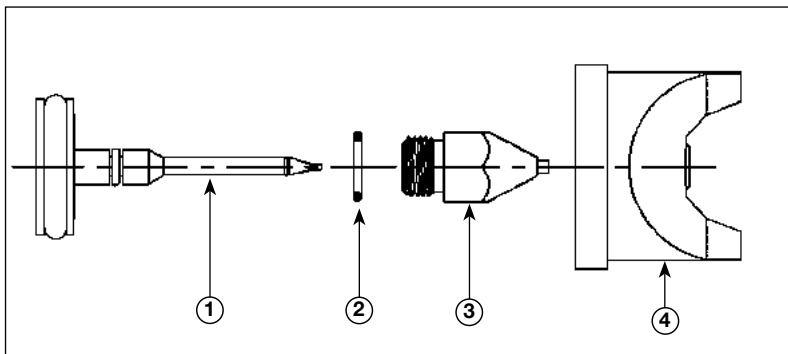
Material: 316L SS

Note: Instructions for changing out any and all ViscoMist component parts come with each Replacement Kit purchased.

To just replace the o-ring in the ViscoMist, order the following:

Ordering no.		Description	
Type	Mat. no.*		
	Viton	EPDM	
	7A	6C	
017. 600. xx. 01. 03	○	○	O-ring Replacement Kit

* 7A (Viton) is the standard material for the O-ring while 6C (EPDM) is optional.



Position #	Description
①	Needle Assembly
②	O-ring
③	Fluid Nozzle
④	Spreader

For various configurations to mount your pneumatic air nozzles, see the Lances and Nozzle Headers section beginning on page 141.