

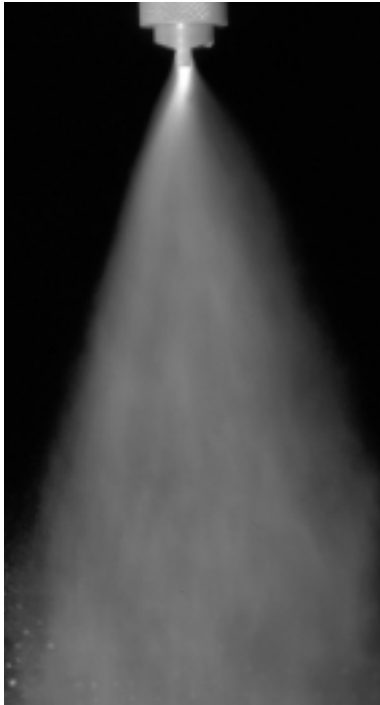


SPRAY CHARACTERISTICS

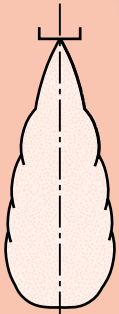
- The Delavan AL air atomising series spray nozzles offer the user a wide variety of spray patterns, flow rates and atomisation. Unlike hydraulic or pressurised nozzles where the energy from the pressure of the liquid is used to atomise, the AL series of nozzles use the energy of a pressurised gas (typically air) to atomise the liquid. This allows the liquid to be fed under lower pressure and still achieve fine atomisation. This is also advantageous for abrasive or high viscosity liquids.
- The nozzles are so designed that flow rates from almost no flow, as in the siphon-fed, to over four litres per minute can be achieved. (For higher flow rates in an air atomised spray, refer to Delavan's Swirl-Air series.)
- The low flow rates and air atomisation combine to give the AL series extremely fine atomisation. Droplet sizes below 50 microns Sauter Mean Diameter can be expected. In the lower flow rates, droplet sizes below 20 micron SMD are not uncommon.
- The mechanics of the atomisation in the AL series are of two types. The internal mix nozzle design provides for the gas and liquid to mix internally in the nozzle. For a given liquid pressure an increase in gas pressure will result in a decrease in liquid flow and a decrease in droplet size. A decrease in gas pressure will do the reverse to the liquid.
- The external mix nozzle has the gas flow intersect the liquid flow at the face of the nozzle. The liquid flow can remain constant while the atomisation and spray pattern can be modified with adjustments in gas pressure. The liquid supply can be siphoned, gravity or pressure fed.
- The Delavan internal and external air atomising series provide excellent atomisation with a simpler and less expensive nozzle.

CONSTRUCTION AND MATERIALS

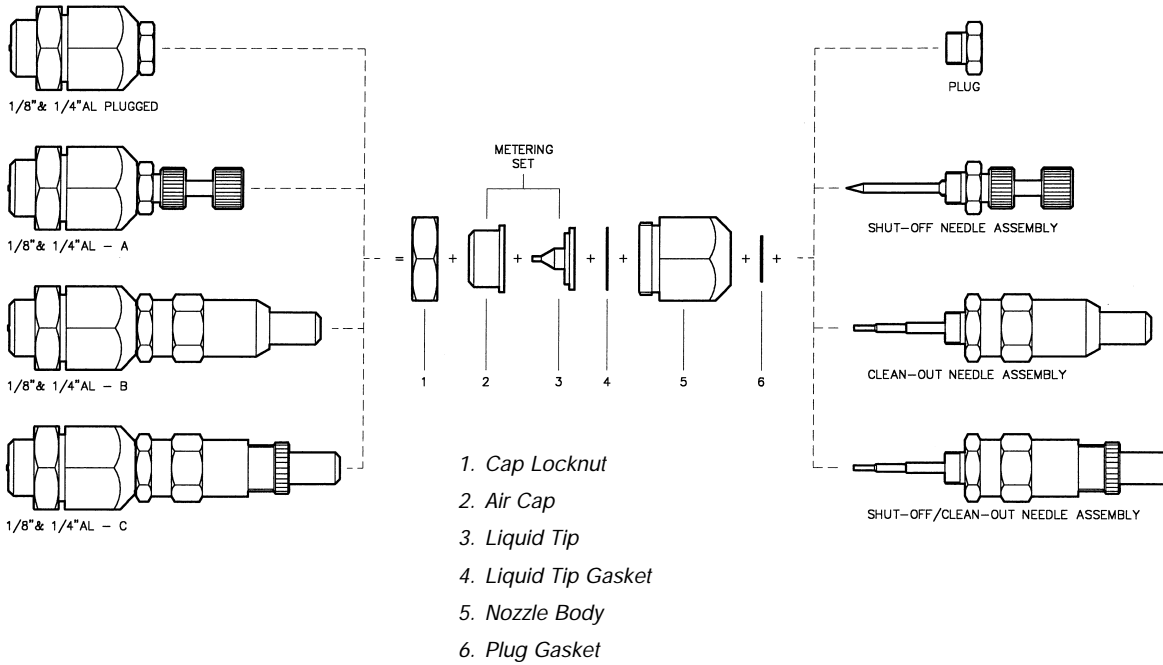
- Standard materials of construction are 316 Stainless Steel and ENP Brass.
- The seals between mating surfaces are in PTFE and the O-Ring seals are in Viton although other materials can be supplied on request.
- Standard inlet connections are 1/8" BSPP and 1/4" BSPP with other sizes available to special order.



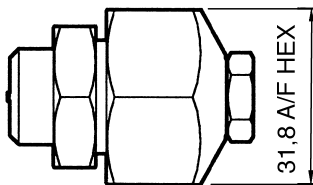
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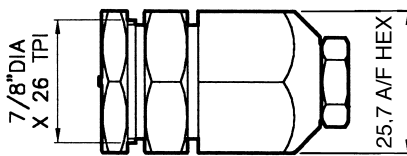
1/8" - 1/4" AL BASIC NOZZLE



MOUNTING OPTIONS

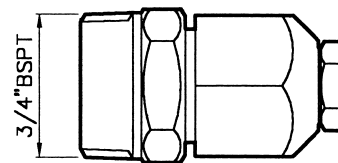


**1/4" AL NOZZLES
(BODY SIZE INCREASES)**



P = PANEL MOUNTING

This option has an alternative cap nut that allows the nozzle to be panel mounted and includes a locknut for tightening purposes.



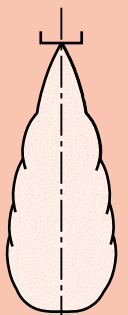
S = WALL MOUNTING

This option has an alternative cap nut that allows the nozzle to be plate or socket mounted by the 3/4" Male BSPT thread.

AIR ATOMISING

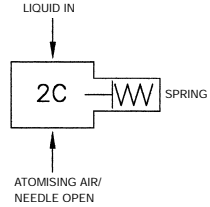
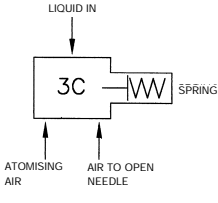
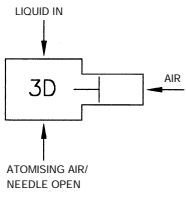
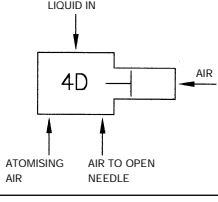
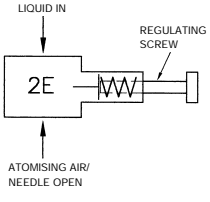
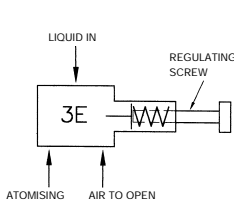
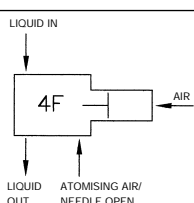
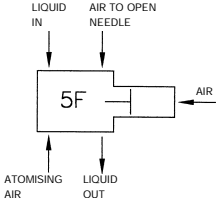
TYPE AL

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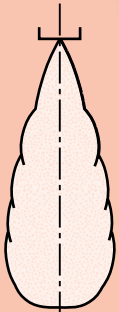


Automatic Body Options

TYPE AL
AIR ATOMISING

Type	Description	Schematic
2C	This body option has two inlets, one for the liquid and the other for the atomising air which also opens the shut off needle. The needle has a spring return for shut off.	
3C	This body option has three inlets for the liquid, atomising air and needle operation. The needle has a spring return for shut off.	
3D	This body option is identical to 2C but the needle is returned to the shut off position with a separate air inlet at the rear of the cylinder.	
4D	This body option is identical to 3C but the needle is returned to the shut off position with a separate air inlet at the rear of the nozzle.	
2E	This body option is identical to 2C but is provided with a regulating screw at the rear of the nozzle to control the movement of the shut off needle.	
3E	This body option is identical to 3C but is provided with a regulating screw at the rear of the nozzle to control the movement of the shut off needle.	
4F	This body option is identical to 3D but is provided with a separate body port to allow re-circulation of the liquid through the nozzle.	
5F	This body option is identical to 4D but is provided with a separate body port to allow re-circulation of the liquid through the nozzle.	

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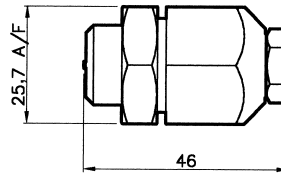


NOTE: Add 'x' to the above types to signify that a clean out needle is required in addition to shut off. This is not available with types 2E and 3E.

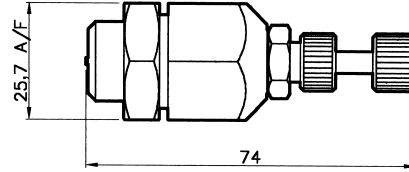
NOZZLE BODY OPTIONS WITH DIMENSIONS



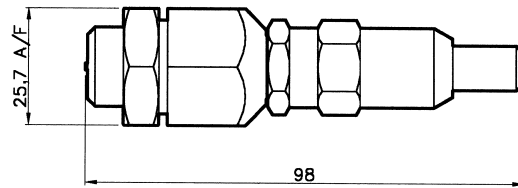
1/8" AL plugged



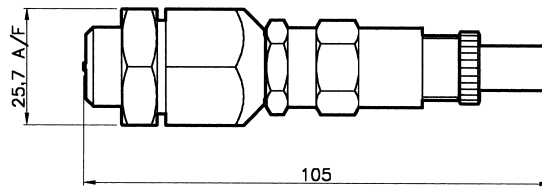
*1/8" AL - A
(Manual metering needle)*



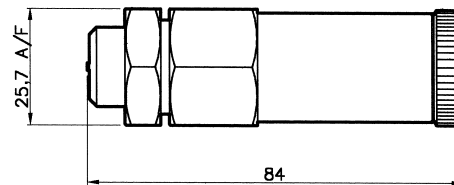
*1/8" AL - B
(Manual clean out needle)*



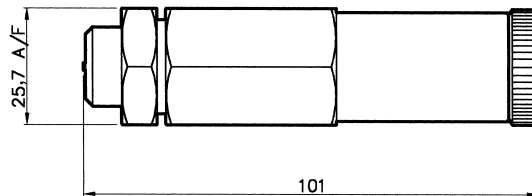
*1/8" AL - C
(Manual clean out/shut off
needle)*



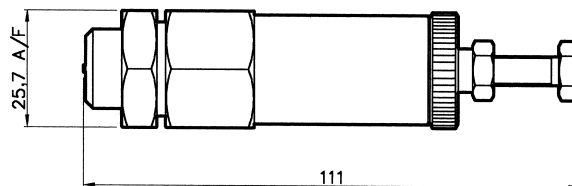
*1/8" AL body options
2C, 3C, 3D, 4D and 4F*



1/8" AL body option 5F



*1/8" AL body options
2E and 3E*

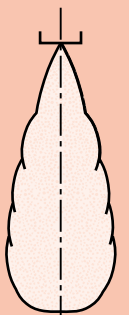


NOTE: All dimensions shown are in mm

AIR ATOMISING

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ORDERING INFORMATION

Nozzle Number System	1/8"	AL	15-04	2C	P	316 S.S.
Nozzle Size - 1/8" - 1/4"						
Nozzle Series						
Metering Set - see pages D.25 to D.31						
Basic Nozzle / Body Options - see pages D.21 and D.22						
Optional Mounting - see page D.21						
Material	316 S.S. = 316 Stainless Steel ENPB = Electroless Nickel Plated Brass					

TYPE AL

AIR ATOMISING

ORDERING EXAMPLES

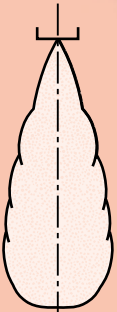
- 1) 1/8" AL 45 - 03 ENPB.
- 2) 1/8" AL - 01 - A 316 S.S.
- 3) 1/8" AL 60 - 04 - 2CX ENPB.
- 4) 30 - 03 Metering Set 316 S.S. = Metering Set
- 5) Liquid Tip W13154 - 316 S.S. = Liquid Tip only.
- 6) Air Cap W01234 - 4 ENPB = Air Cap only.

Metering Sets - Each metering set provides a specific spray pattern with a specific flow capacity and spray coverage range performance. All of the metering sets are interchangeable, thereby providing flexibility for different spray performances. Each metering set consists of a liquid tip and air cap.

WE ARE HERE TO HELP

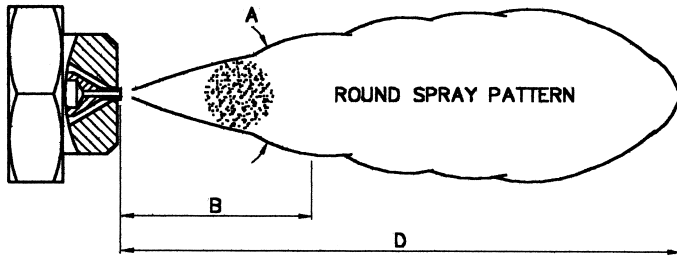
If you need more detailed information or advice then Delavan sales engineers and technical staff are always available to answer your questions.

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AL
ROUND SPRAY - EXTERNAL MIX

In the AL external mix nozzle the liquid can be provided by suction, gravity feed, or pressurised. Flow rates can be extremely low by increasing suction height. For pressurised liquid, a flow regulator should be used. Nominal spray angle of 20-25°.



CAPACITY CHARTS

METERING SET NO.	LIQUID TIP & AIR CAP NUMBERS	CAPACITIES AT SIPHON HEIGHT OF 15CM	AIR PRESSURE IN Bar.G.									SPRAY ANGLE(°) @ 1.5 Bar	
			0,35	0,7	1,0	1,5	1,75	2,0	3,0	4,0	6,0		7,0
01	Liquid Tip W05736-1 Air Cap W00003	Air Capacity Litres/Min	15	20	23	29	32	35	44	58	78	91	20
		Liquid Capacity Litres/Hour	1,36	2,27	3,12	3,41	3,72	4,08	4,64	5,9	7,1	8,3	
		Distance 'D' Metres	0,9	1,4	1,8	2,1	2,4	2,7	3,0	3,4	3,7	3,8	
02	Liquid Tip W05736-2 Air Cap W00009	Air Capacity Litres/Min	26	32	38	47	52	58	73	96	126	151	20
		Liquid Capacity Litres/Hour	2,50	4,54	5,9	7,0	7,9	9,1	10,7	13,6	16,6	19,5	
		Distance 'D' Metres	1,5	1,8	2,4	2,9	3,0	3,2	3,7	4,3	4,9	5,2	
03	Liquid Tip W05736-3 Air Cap W00011	Air Capacity Litres/Min	33	42	49	60	67	75	94	125	164	195	20
		Liquid Capacity Litres/Hour	3,18	5,4	7,3	8,9	10,2	11,8	14,8	20,9	26,8	32,7	
		Distance 'D' Metres	1,5	1,8	2,4	2,9	3,0	3,2	3,7	4,3	4,9	5,2	
04	Liquid Tip W05736-4 Air Cap W00013	Air Capacity Litres/Min	43	54	63	77	86	96	120	162	210	250	20
		Liquid Capacity Litres/Hour	3,63	6,4	8,6	10,7	12,5	14,1	17,5	24,1	30,9	37,7	
		Distance 'D' Metres	1,5	1,8	2,4	2,9	3,0	3,2	3,7	4,3	4,9	5,2	
05	Liquid Tip W05736-5 Air Cap W13155-5	Air Capacity Litres/Min	49	61	71	86	97	108	135	182	236	281	20
		Liquid Capacity Litres/Hour	4,22	7,4	10,0	12,4	14,5	16,4	20,3	28,0	35,9	43,8	
		Distance 'D' Metres	1,5	1,8	2,4	2,9	3,0	3,2	3,7	4,3	4,9	5,2	

METERING SET NO.	LIQUID TIP & AIR CAP NUMBERS	ATOMISING AIR		LIQUID CAPACITY LITRES/HOUR								SPRAY DIMENSIONS AT 20 CM SIPHON HEIGHT			
		Air Press. Bar.G.	Air Flow L/MIN	Gravity Head				Siphon Height				Air Press. Bar.G.	Spray Angle A (°)	B cm	D M
				45 cm	30 cm	15 cm	10 cm	20 cm	30 cm	60 cm	90 cm				
06	Liquid Tip W13154 - 1 Air Cap W13155 - 1	0,7	11,3	1,5	1,3	1,1	0,87	0,68	0,53	-	-	0,7	18	28	1,8
		1,5	17,0	1,8	1,7	1,5	1,3	1,2	1,1	0,62	-	1,5	18	28	1,9
		3,0	28	2,1	1,9	1,7	1,5	1,4	1,3	1,1	0,76	3,0	18	30	2,3
		4,0	36	2,2	2,0	1,8	1,6	1,5	1,4	1,2	0,87	4,0	18	36	2,6
07	Liquid Tip W13154 - 2 Air Cap W13155 - 1	0,7	13,3	2,4	2,1	1,7	1,5	1,2	0,79	-	-	0,7	18	30	2,1
		1,5	20	2,8	2,6	2,4	2,1	1,9	1,6	0,91	-	1,5	18	33	2,3
		3,0	32	3,4	3,1	2,9	2,8	2,6	2,4	1,7	1,1	3,0	18	38	2,6
		4,0	41	3,7	3,4	3,3	3,1	2,9	2,7	2,1	1,5	4,0	19	43	3,0
08	Liquid Tip W13154 - 2 Air Cap W13155 - 2	0,7	23	2,5	2,3	2,0	1,6	1,4	1,1	-	-	0,7	18	30	2,4
		1,5	36	2,9	2,8	2,5	2,2	2,0	1,7	0,89	-	1,5	18	33	2,7
		3,0	58	3,4	3,3	3,2	2,9	2,8	2,5	1,9	1,2	3,0	19	38	3,4
		4,0	74	3,7	3,6	3,5	3,4	3,3	3,0	2,5	2,0	4,0	20	43	4,0
09	Liquid Tip W13154 - 3 Air Cap W13155 - 2	0,7	19,3	4,5	4,0	3,4	2,1	1,8	1,4	-	-	0,7	21	38	3,0
		1,5	31	5,3	4,9	4,4	3,5	2,9	2,7	1,8	-	1,5	21	41	3,4
		3,0	50	6,0	5,6	5,0	4,4	4,0	3,4	2,4	1,2	3,0	21	46	4,0
		4,0	65	5,7	5,4	5,0	4,2	3,9	3,5	2,8	1,9	4,0	22	51	4,6
10	Liquid Tip W13154 - 6 Air Cap W13155 - 3	1,5	58	22	19,9	16,3	12,3	10,5	8,3	2,8	-	1,5	17	46	3,7
		3,0	88	25	23	19,5	16,7	14,2	11,5	6,4	2,8	3,0	18	51	4,3
		4,0	111	26	24	21	18,4	15,7	12,9	7,9	4,5	4,0	18	53	4,9
		5,6	147	26	24	22	19,7	17,0	14,6	9,8	6,1	5,6	19	58	5,5
11	Liquid Tip W13154 - 10 Air Cap W13155 - 4	2,0	144	-	-	-	27	22	16,8	-	-	2,0	20	51	6,7
		3,0	190	-	-	-	30	26	21	-	-	3,0	20	53	7,0
		4,0	240	-	43	40	31	28	23	11,0	-	4,0	21	58	7,6
		5,6	315	44	42	39	31	28	24	16,7	8,3	5,6	22	63	8,2

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