

OPERATION & SAFETY INSTRUCTIONS

AIR/LIQUID SPRAY NOZZLES

Models 1703, 1707, 1713, 1723, 1727, 1733, including BSP versions



IMPORTANT

Please read all instructions **BEFORE** attempting to use this product



ITW Air Management

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GENERAL SAFETY CONSIDERATIONS

WARNING: COMPRESSED AIR COULD CAUSE DEATH, BLINDNESS OR INJURY

1. Do not operate at air pressures above 150 psig (10.3 Bar).
2. Do not operate a Spray Nozzle at line temperatures above 110°F (43°C)
3. Avoid direct contact with compressed air.
4. Do not direct compressed air at any person.
5. When using compressed air, wear safety glasses with side shields.

NOTE: There is no need to limit compressed air pressure to a maximum of 30 psig (2 bar). It is not possible to block the flow of air from the Sprayvector to register 30 psig (2 bar) on a test gauge.

Introduction

Spray Nozzles are two fluid nozzles that use up to 12 SCFM of 100 psig compressed air to atomize up to 0.5 GPM (1.9 LPM) of liquid (liquid pressure up to 20 psig maximum) for evaporative cooling, moisturization, coating and area humidification. Atomizing and fogging Spray Nozzles can spray liquids with viscosities up to 1100 cPs. Humidifying Spray Nozzles can spray liquids with viscosities up to 100 cPs. Maximum liquid flow rate for the Humidifying Spray Nozzles (models 1707 and 1727) is 0.25 GPM (0.95 LPM).

Compressed Air Supply

A Spray Nozzle must be connected to a compressed air source that is filtered (5 micron maximum) to remove water, particulate and oil. The compressed air supply must be filtered to remove water and dirt using a 5 micron or smaller filter. Failure to use a filter may cause clogging of the compressed air paths inside the Vortec product. Filter recommendations are given in Table 1.

Filter elements must be changed on a regular basis. Frequency of change is determined by the condition of the compressed air supply. Filters should be installed in the compressed air supply line as close as possible to the Vortec product.

The appropriate size of compressed air supply line should be selected to ensure optimal performance of the Vortec product. Please refer to Table 2 to determine what supply line size is recommended for your application.

Contact Vortec at 1-800-441-7475 for further assistance.

Liquid Supply

A Spray Nozzle must be connected to a filtered liquid source (40 mesh Y-Type strainer minimum recommended) to remove particulate. Liquid supply must be pressurized, but not to exceed 20 psig. Y-strainer is included with models 1723, 1727 and 1733.

Installation

A Spray Nozzle can be installed by directly plumbing to the appropriately-sized hard piped compressed air source that does not exceed 150 psig (10.3 Bar).

Operation

Spray Nozzles use compressed air (up to 12 SCFM) to atomize pressurized liquids (up to 20 psig). Dripless operation requires use of a 3-way solenoid in the liquid supply line (the compressed air supply remains on while the third port of the solenoid in the liquid supply line is either vented to atmosphere or pressurized with compressed air to forcibly evacuate the liquid line).

Liquid droplet size is controlled by liquid pressure, compressed air pressure, and the (black) liquid flow control knob.

Maintenance

Spray Nozzles have no moving parts, and require only filtered compressed air and pressurized liquid for proper operation. Spray Nozzles can be disassembled for cleaning, if necessary. Ensure that all eight internal air passages are not clogged. The external snap ring on the Humidifying Spray Nozzles must be removed prior to cleaning.

Troubleshooting

Insufficient performance may be caused by the following:

1. Undersized compressed air or liquid supply line.
2. Compressed air pressure or liquid pressure too low or too high.
3. Partial or complete blockage of internal compressed air path, due to dirt. See Maintenance section for cleaning instructions; and Compressed Air Supply section for filter recommendations.
4. Insufficient compressed air volume.
5. Loose nozzle tip. This may occur if not tightened properly after disassembled for cleaning.
6. Improper adjustment of black (liquid flow control) knob.

If trouble persists, please contact Vortec at 1-800-441-7475.

Limited Warranty

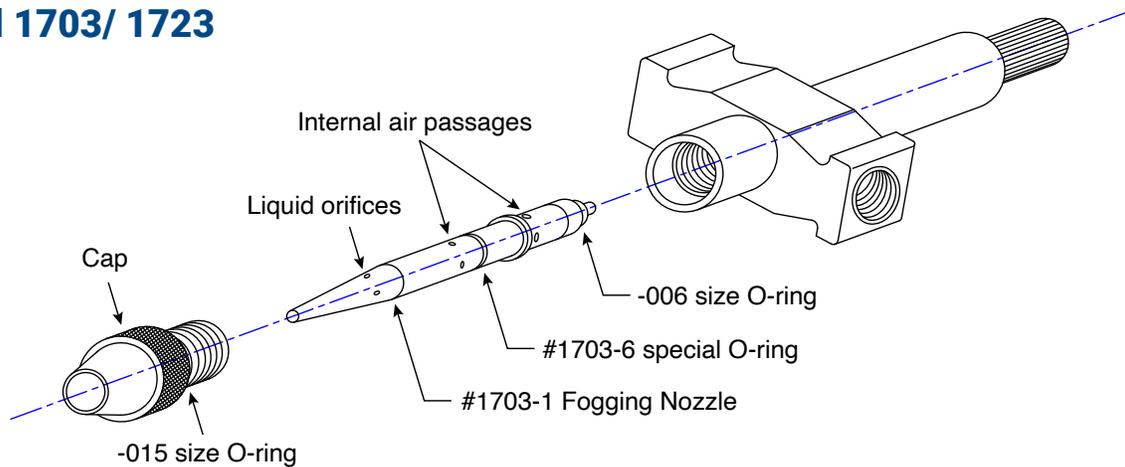
Vortec compressed air products manufactured by ITW Air Management will be replaced or repaired if found to be defective due to manufacture defect within ten years from the date of invoice.

Refer to our website www.vortec.com for full warranty details and limitations. ITW Air Management makes no specific warranty merchantability or warrant of fitness to a particular purpose.

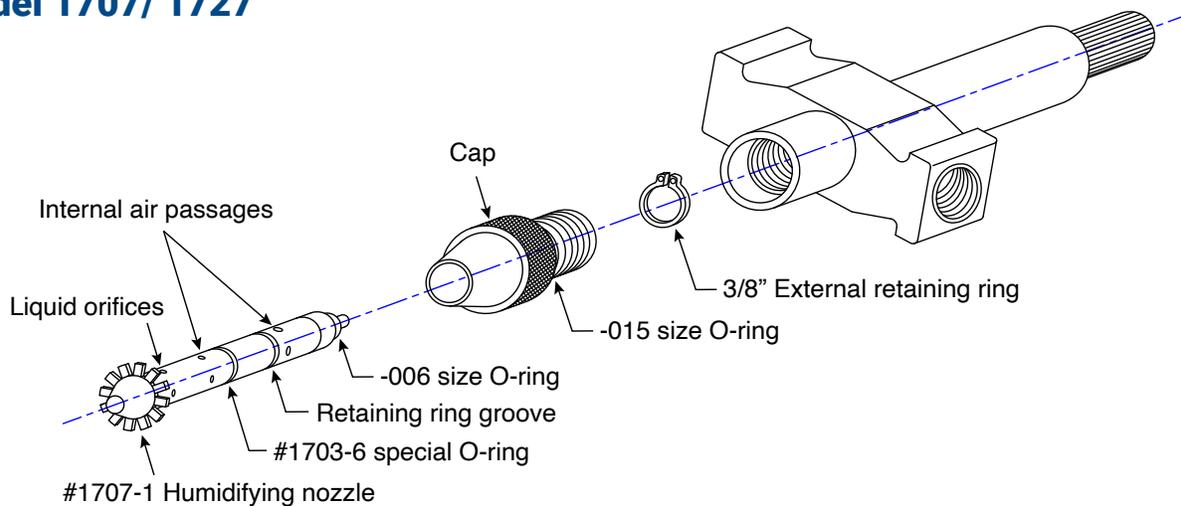
Spray Nozzle Assembly

(Drawings shown below are not to scale)

Model 1703/ 1723



Model 1707/ 1727



Model 1713/ 1733

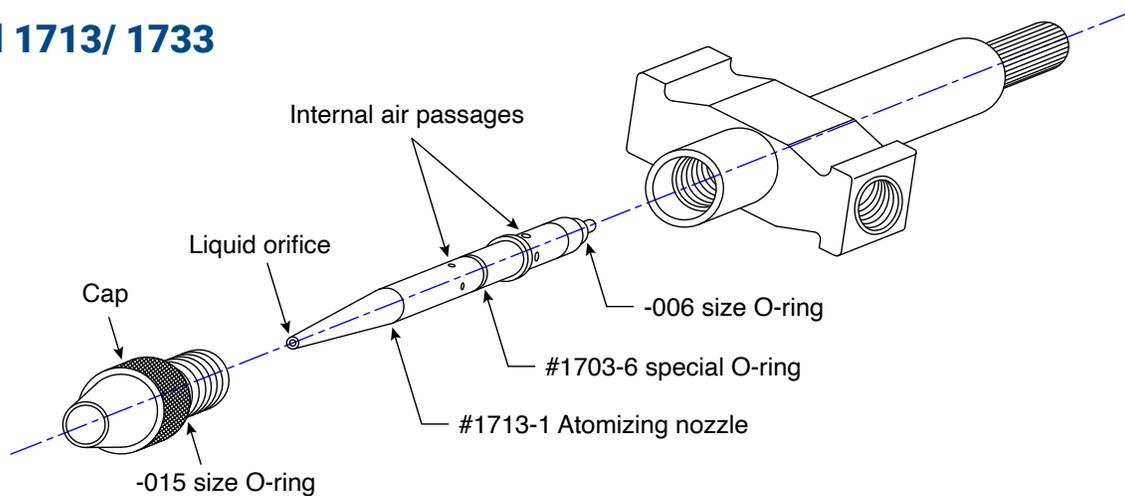


Table 1: Filter Recommendations

FILTER AND REPLACEMENT PART ITEM NUMBERS					
Vortec Model	5 micron Air Filter	Oil Removal Filter	Liquid Strainer	O-ring Kit	Replacement Nozzle Tip
1700	-	701S-48	-	1700-1	-
1703, 1723	701S-24A	701S-48	H0727	1700-1	Fogging Nozzle Tip, 1703-1
1707, 1727	701S-24A	701S-48	H0727	1700-1	Humidifying Nozzle Tip, 1707-1
1713, 1723	701S-24A	701S-48	H0727	1700-1	Atomizing Nozzle Tip, 1713-1

Table 2: Determining Compressed Air Line Size

1. Calculate total product compressed air consumption (SCFM, SLPM).
2. Determine length of compressed air line required for connection to main supply.
3. Locate pipe length in left column and read to the right to find the compressed air requirements.
4. Locate pipe size at top of column.

MAXIMUM AIRFLOW (SCFM) THROUGH PIPE AT 5 PSIG PRESSURE DROP (100 PSIG AND 70°F)									
Pipe Length (Feet)	Pipe Size (Nominal) - Schedule 40								
	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
10	29	65	120	254	480	978	1483	2863	4536
20	21	46	85	180	340	692	1049	2024	3208
30	17	37	70	147	277	565	856	1653	2619
40	15	32	60	127	240	489	792	1431	2268
50	13	29	54	114	215	437	663	1280	2029
60	12	26	49	104	196	399	606	1169	1852
70	11	25	46	96	181	370	561	1082	1715
80	10	23	43	90	170	346	524	1012	1604
90	10	22	40	85	160	326	494	954	1512
100	9	21	38	80	152	309	469	905	1435

MAXIMUM AIRFLOW (SLPM) THROUGH PIPE AT 0.3 BAR PRESSURE DROP (6.9 BAR AND 21°C)									
Pipe Length (Meters)	Pipe Size (Nominal) - Schedule 40								
	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
3	821	1840	3396	7188	13584	27677	42117	81023	128369
6	594	1302	2406	5094	9622	19584	29687	57279	90786
9	481	1047	1981	4160	7839	15990	24225	46780	74188
12	425	906	1698	3594	6792	13839	20999	40497	64184
15	368	821	1528	3226	6085	12367	18763	36224	57421
18	340	736	1387	2943	5547	11292	17150	33083	52412
21	311	708	1302	2717	5122	10471	15877	30621	48535
24	283	651	1217	2547	4811	9792	14829	28640	45393
27	269	623	1132	2406	4528	9226	13980	26998	42790
31	255	594	1075	2264	4302	8745	13273	25612	40611

Rubber hose maximum airflow rating: 1/2" I.D. rubber hose = 3/8" pipe; 3/4" I.D. rubber hose = 1/2" pipe