OPERATION & SAFETY INSTRUCTIONS

ENERGY SAVING NOZZLES
INCLUDING DURABLAST LIFETIME

Models 1200, 1200SS and 9401 Blow Gun with 1200 Nozzle
Models 1201, 1201F-12, 1202 to 1206, 1220 including BSP versions

IMPORTANT

Please read all instructions BEFORE attempting to use this product

VORTEC
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GENERAL SAFETY CONSIDERATIONS

WARNING: COMPRESSED AIR COULD CAUSE DEATH, BLINDNESS OR INJURY

1. Do not operate these Nozzles at air pressures above 150 psig (10.3 Bar).
2. Do not operate flex hose models at line temperatures above 160°F (71°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 a Vortec Nozzle to register 30 psig (2 bar) on a test gauge.

Introduction

A Vortec Energy-Saving Nozzle is an airflow amplifier that can reduce compressed air consumption by up to 50% while helping to meet OSHA 30 psig dead-end pressure and noise specifications.

Nozzles are used as direct replacement for copper tubes, pipe nipples, manifolds with drilled holes and other conventional blowoff methods that waste compressed air.

Compressed Air Supply

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.

Installation and Operation

To conserve compressed air, match the size of the Nozzle airflow to the shape/size of the part. Nozzles can be regulated to match the machine cycle. Output airflow volume and thrust can be changed by increasing or decreasing the compressed air supply pressure.

Models 1200 and 1200SS DuraBlast nozzles are attached to the compressed air source via the 1/8”-27 NPT threaded fitting. BSP versions of these nozzles have a 1/8”-28 BSP thread.

DuraBlast nozzles have a micrometer dial and are factory set at 0.008”. To change the airflow, loosen the set screw (recessed into the tip of the Nozzle) with a 3/32” hex Allen key, and rotate the Nozzle tip (increase gap setting = increase airflow). Tighten the set screw to secure the setting. Output airflow volume can also be changed by increasing or decreasing the compressed air pressure.

The DuraBlast nozzle is easily disassembled for cleaning. If a reduction in airflow/thrust occurs due to clogging, remove the set screw and nozzle tip and clean the air gap surface areas. After cleaning, reassemble the nozzle, adjust the gap, and tighten the set screw to secure the setting.

Models 1201, 1202, 1203 and 1205 are permanently mounted on 1/4” or 3/8” diameter copper tubing. This tubing can be bent to the desired shape with the assistance of a tube bender. The tube bender for the 1201 and 1202 nozzles must have a bend radius of no less than 9/16” (14mm) and the tube bender for the 1203 and 1205 nozzles must have a bend radius of no less than 15/16” (24mm). These models can be attached to the compressed air source with either a compression fitting or a copper solder joint fitting.

Models 1201F-12 and 1204 are attached to the compressed air source via the 1/8”-27 NPT threaded fitting. BSP versions of these nozzles have a 1/8”-28 BSP thread.

Model 1206 attaches to the compressed air source via the 1/4”-18 NPT threaded fitting. The 1206BSP has a 1/4”-19 BSP thread.

Model 1220 attaches to the compressed air source via the 3/4”-14 NPT threaded fitting.

Nozzle Identifying Features

Model	NPT/BSP Size	Copper Tube Diameter	Nozzle Sleeve	Hose Color	Thrust	
					Oz at 12"	Gm at 305 mm
1200	1/8"	-	Aluminum	-	3 to 21	85 to 205
1200SS	1/8"	-	Stainless Steel	-	3 to 21	85 to 205
1220	3/4"	-	Aluminum	-	72	2041
1201	-	1/4"	Brass	-	6	170
1202	-	1/4"	Nickel Plated	-	20	597
1203	-	3/8"	Brass	-	9	255
1205	-	3/8"	Nickel Plated	-	28	794
1201F-12	1/8"	-	Brass	Black	6	170
1204	1/8"	-	Brass	Red	9	255
1206	1/4"	-	Nickel Plated	Black	28	794

Troubleshooting

Insufficient performance may be caused by the following:

1. Undersized compressed air line size.
2. Compressed air pressure too low.
3. Partial or complete blockage of internal compressed air path, due to dirt. See Installation and Operation 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.

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.

DuraBlast nozzles are backed by a lifetime warranty and will be replaced at any time if found to be defective due to manufacture. Properly filtered air is essential to the performance and durability of Vortec nozzles. Signs of excessive wear from inadequately filtered compressed air may void this warranty.

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.

Table 1: Filter Recommendations

FILTER AND REPLACEMENT PART ITEM NUMBERS				
Vortec Model	**5 micron Air Filter**	**Oil Removal Filter**	**Magnetic Mounting Base**	**Replacement Nozzle Tip**
1200	701S-24A	701S-48	610-26	-
1200SS	701S-24A	701S-48	610-26	-
1201	701S-24A	701S-48	610-26	-
1202	701S-24A	701S-48	610-26	-
1203	701S-24A	701S-48	610-26	-
1205	701S-24A	701S-48	610-26	-
1201F-12	701S-24A	701S-48	610-26	-
1204	701S-24A	701S-48	610-26	-
1206	701S-24A	701S-48	610-26	-
1220	701S-40A	-	-	-
9401	701S-24A	701S-48	-	1200 Adjustable Nozzle

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