OPERATION & SAFETY INSTRUCTIONS

ADJUSTABLE COLD AIR GUNS

Models 610, 610-1, 620, 620-1, 630, 630-1, 612, 612-1, 622, 622-1, 632, 632-1
(Includes all BSP versions of models listed above)

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 the Cold Air Gun at air pressures above 150 psig (10.3 Bar).
2. Do not operate the Cold Air Gun 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.

Introduction

A Cold Air Gun is a device that converts filtered, 100 psig (6.9 Bar) compressed air into a cold airstream.

The Adjustable Cold Air Gun consumes 15-35 SCFM (425-990 SLPM) of compressed air and is perfect for a wide range of industrial spot cooling and dry machining applications.

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 (and freezing) 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.

When the desired cold air stream temperature is less than 32°F (0°C), a compressed air dryer may be necessary to prevent ice formation on the inside of the Vortec product.

Installation

A Cold Air Gun 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

To regulate the Cold Air Gun temperature, turn the adjustment knob at the back of the Gun. Turning the knob counterclockwise will reduce the temperature and volume of the cold air stream. When operating the Cold Air Gun at compressed air pressures below 100 psig (6.9 Bar), it is possible to open this valve too far so that there is no cold air flow. Turn the knob clockwise to increase the cold air flow and temperature.

Maximum cooling capacity (not the coldest temperature) occurs when there is a balance between cold air volume and cold air temperature drop. In other words, there must be an adequate volume of cold air at a reasonable cold temperature to achieve the maximum cooling effect. In normal operation, this will occur when the adjustment knob is turned 1/4 to 3/8 open (counterclockwise) from the full closed (clockwise) position.

Maintenance

The Cold Air Gun has no moving parts (other than the adjustment knob), and requires only filtered compressed air for proper operation. The Cold Air Gun can be disassembled for cleaning, if necessary, as shown above. If the Gun has been disassembled for cleaning, the Cold Cap must be reassembled tightly to ensure that the Generator seats tightly against the body assembly. A loose Cold Cap will reduce cooling capacity.

Troubleshooting

Insufficient airflow 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 Maintenance section for cleaning instructions; and Compressed Air Supply section for filter recommendations.
4. Insufficient compressed air volume.
5. Loose cold cap. 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.

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.

Adjustable Cold Air Gun Assembly

(Drawings shown below are not to scale)

Model 610, 620 and 630

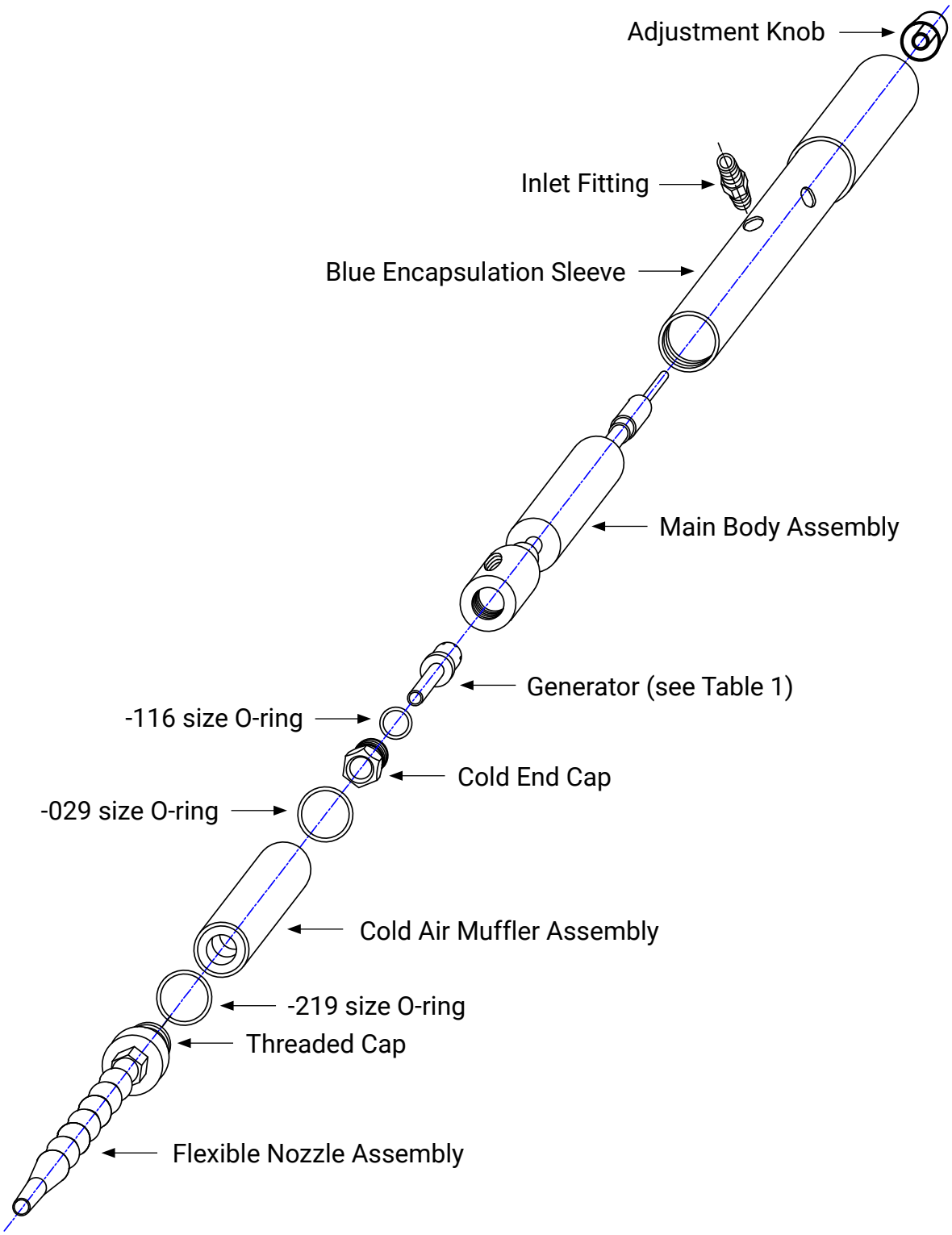

Table 1: Filter Recommendations

FILTER AND REPLACEMENT PART ITEM NUMBERS					
Vortec Model	5 micron Air Filter	Oil Removal Filter	Single Outlet Flex Nozzle	Magnetic Mounting Base	Replacement Generator Kits (5 pcs)
610, 612	701S-24A	701S-48	606-FN	-	208GK-15H
610-1, 612-1	701S-24A	701S-48	606-FN	620-26	208GK-15H
620, 622	701S-24A	701S-48	606-FN	-	208GK-25H
620-1, 622-1	701S-24A	701S-48	606-FN	620-26	208GK-25H
630, 632	701S-24A	701S-54	606-FN	-	208GK-35H
630-1, 632-1	701S-24A	701S-54	606-FN	620-26	208GK-35H

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