



CLEMCO
The Performance
System

TECHNICAL DATA SHEET

Note: For safe, efficient blasting, read and follow the owner's manual and seek training for everyone who will use this equipment.

Purpose

A blast nozzle accelerates the air and abrasive as the mixture exits the end of the hose. The taper and length of the nozzle's inlet and outlet determine the pattern and velocity of the abrasive exiting the nozzle. The composition of the liner material determines its resistance to wear.

Requirements for Operation

Nozzles are sized by the diameter of their orifices in $\frac{1}{16}$ -inch increments. A No. 2 nozzle has a $\frac{2}{16}$ -inch ($\frac{1}{8}$ -inch) orifice, a No. 3 nozzle has a $\frac{3}{16}$ -inch orifice, etc. The size of the nozzle orifice determines abrasive and air consumption. Air consumption is measured in cubic feet per minute (cfm) at a given pressure. See the air and abrasive consumption chart on the back of this page.

When choosing a nozzle, consider the amount of available air in cfm, the capacity of the blast machine and the inside diameter of the piping, the blast and air hoses. For optimal performance, these elements must be compatibly sized. See the chart on the back of this page.

If too large a nozzle is used, low blast pressure and rapid wear on the blast hose will occur. If too small a nozzle is used, smooth media flow will be difficult to achieve.

Description of Operation

The operator attaches the nozzle to the nozzle holder on the coupled blast hose by turning the nozzle clockwise until firmly seated in place. The Clemco nozzle holder keeps the nozzle securely installed.

Description

Blast nozzle with venturi-shape boron carbide liner and metal jacket. All nozzles in the BSD series have 1" diameter entry and 1 $\frac{1}{4}$ " threading.



BSD Nozzles

With all related equipment correctly assembled and tested, the operator points the nozzle at the surface to be cleaned and presses the remote control handle to begin blasting. The operator holds the nozzle 18 to 36 inches from the surface and moves it smoothly at a rate that produces the desired cleanliness. Each pass should overlap slightly.

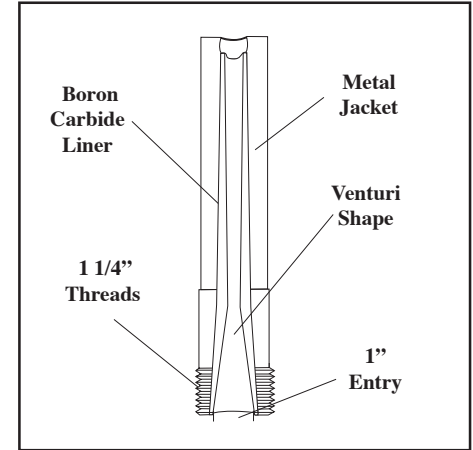
The operator must replace the nozzle once the orifice wears $\frac{1}{16}$ -inch beyond its original size.

Advantages

- Boron Carbide liner material is the most abrasive-resistant, durable, and economical liner material.
- Long-venturi nozzles allow high production blasting at a distance of 18 to 24 inches for hard-to-clean surfaces, and 30 to 36 inches for loose paint and soft surfaces.
- Expected life with expendable abrasives is approximately 1000 hours.
- 1-inch entry provides smooth transition and maximum productivity with 1-inch ID blast hose.

Nozzles

Boron Carbide Lined Metal Jacketed BSD Series



Replacement Parts

Description

NW-4 nozzle washers

(Pkg of 10) 00869

Stock No.

Specifications	
Nozzle Model	BSD
Mounting Thread	1-1/4"
Entry Diameter	1"
Liner	Boron Carbide
Liner Style	Venturi
Jacket Material	Aluminum

Component Compatibility Guide						
No.	Nozzle Orifice	Recommended cfm Range	Minimum Blast Machine Capacity	Minimum Piping ID	Blast Hose ID	Minimum Air Hose ID
4	1/4"	81 - 137	2 cu ft	1"	1" - 1 1/4"	1 1/4"
5	5/16"	137 - 196	4 cu ft	1"	1" - 1 1/4"	1 1/4"
6	3/8"	196 - 254	6 cu ft	1 1/4"	1 1/4"	1 1/2"
7	7/16"	254 - 338	6 cu ft	1 1/4"	1 1/4" - 1 1/2"	2"
8	1/2"	338 - 548	6 cu ft	1 1/4"	1 1/2"	2"

Note: Best performance is obtained when sizes of nozzle, blast machine piping, blast hose and air hose are properly matched.

- Cfm range is based on blasting at 100 psi for the life of the nozzle.
- Blast machine capacity should allow 20 to 30 minutes of blasting.
- Hose ID should be three to four times the size of the nozzle orifice.

Compressor Air and Abrasive Consumption

Chart shows air consumption in cubic feet per minute (cfm), abrasive consumption in pounds per hour and cubic feet per hour for abrasives weighing 100 pounds per cubic foot, and compressor horsepower (hp) based on 4 to 4.5 cfm per horsepower.

NOTE: Figures vary depending upon working conditions. To maintain desired air pressure as nozzle orifice wears, air consumption increases. The effects of nozzle wear on air consumption must be considered when selecting nozzles and the compressors that support them.

When nozzle orifice is 3/8-inch or larger, blast machine valves and piping must be 1 1/4-inch or larger to provide sufficient air volume.

Nozzle Orifice	Pressure at the Nozzle (psi)								Air (in cfm) Abrasive & HP requirements
	50	60	70	80	90	100	125	150	
No. 2 (1/8")	11	13	15	17	18.5	20	25	30	Air (cfm)
	.67	.77	.88	1.01	1.12	1.23	1.52	1.82	Abrasive (cu.ft./hr & Lbs/hr)
	2.5	3	3.5	4	4.5	5	5.5	6.6	Compressor hp
No. 3 (3/16")	26	30	33	38	41	45	55	66	Air (cfm)
	1.50	1.71	1.96	2.16	2.38	2.64	3.19	3.83	Abrasive (cu.ft./hr & Lbs/hr)
	150	171	196	216	238	264	319	383	Compressor hp
No. 4 (1/4")	47	54	61	68	74	81	98	118	Air (cfm)
	2.68	3.12	3.54	4.08	4.48	4.94	6.08	7.30	Abrasive (cu.ft./hr & Lbs/hr)
	268	312	354	408	448	494	608	730	Compressor hp
No. 5 (5/16")	77	89	101	113	126	137	168	202	Air (cfm)
	4.68	5.34	6.04	6.72	7.40	8.12	9.82	1.178	Abrasive (cu.ft./hr & Lbs/hr)
	468	534	604	672	740	812	982	1,178	Compressor hp
No. 6 (3/8")	108	126	143	161	173	196	237	284	Air (cfm)
	6.68	7.64	8.64	9.60	10.52	11.52	13.93	1.672	Abrasive (cu.ft./hr & Lbs/hr)
	668	764	864	960	1052	1152	1393	1,672	Compressor hp
No. 7 (7/16")	147	170	194	217	240	254	314	377	Air (cfm)
	8.96	10.32	11.76	13.12	14.48	15.84	19.31	2.317	Abrasive (cu.ft./hr & Lbs/hr)
	896	1032	1176	1312	1448	1584	1931	2,317	Compressor hp
No. 8 (1/2")	195	224	252	280	309	338	409	491	Air (cfm)
	11.60	13.36	15.12	16.80	18.56	20.24	24.59	2.951	Abrasive (cu.ft./hr & Lbs/hr)
	1160	1336	1512	1680	1856	2024	2459	2,951	Compressor hp

Nozzle Stock Number, Dimensions, & Weights

	Model No.	Stock No.	Orifice ID	Length	Net Wt	Pkg'd Wt	Holder	Washer	Washer Kit
Fine 1-1/4" Thread	BSD-4	01419	1/4"	5 1/4"	1 lb	2 lb	HEP series or CFP 07716	NW-4	Stock No. 00869
	BSD-5	01420	5/16"	5 5/8"	1 lb	2 lb		NW-4	
	BSD-6	01421	3/8"	6 1/2"	1.25 lb	3 lb		NW-4	
	BSD-7	01422	7/16"	7 3/4"	1.25 lb	3 lb		NW-4	
	BSD-8	01423	1/2"	8 13/16"	1.5 lb	3 lb		NW-4	

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