



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 1/16-inch increments. A No. 2 nozzle has a 2/16-inch (1/8-inch) orifice, a No. 3 nozzle has a 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 holder and nozzle to the coupled blast hose by turning the holder clockwise until the locking lugs of the coupling and holder engage. Clemco's nylon quick couplings have built-in lock-springs to keep the couplings from becoming uncoupled.

Description

Blast nozzle with venturi shaped tungsten carbide liner and metal jacket. Thread size and entry dimensions vary with nozzle series.



CSD shown

If other couplings are used, the operator must install pins to secure the couplings.

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 1/16-inch beyond its original size.

Advantages

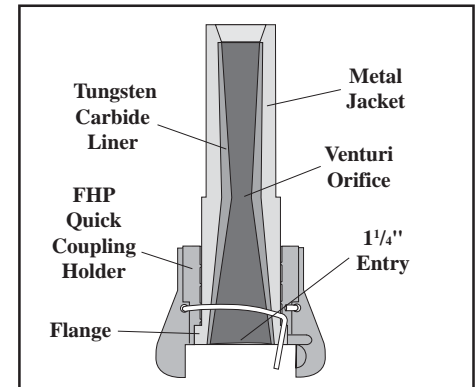
- Tungsten Carbide liner material is the most rugged and durable, it is also the best value in a liner material.
- Short-venturi nozzles (CJD) are designed for blasting 12 to 18 inches away from the surface.
- Long-venturi nozzles (CSD, TXD, SDX) allow high production blasting at a distance of 18 to 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 300 hours
- 1-inch entry provides smooth transition and maximum productivity with 1-inch ID blast hose

Nozzles

Tungsten Carbide Lined Metal Jacketed

Short Venturi: CJD

Long Venturi: CSD, TXD, SDX



SDX shown

- 1 1/4-inch entry ensures maximum productivity with 1 1/4-inch ID blast hose

Replacement Parts

Description

Stock No.

Lock-springs (25) 21585

Specifications			
Nozzle Model	CJD CSD	TXD	SDX
Mounting Thread	1-1/4"	Contractor	*Flanged
Entry Diameter	1"	1-1/4"	1-1/4"
Liner	Tungsten Carbide		
Liner Style	Venturi		
Jacket Material	Aluminum		
*Flanged nozzle includes quick-coupling nozzle holder			

Authorized Distributor:

ISO 9001-2000 certified. Clemco is committed to continuous product improvement. Specifications are subject to change without notice.

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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.

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.

Component Compatibility Guide						
No.	Nozzle Orifice	Recommended cfm Range	Minimum Blast Machine Capacity	Minimum Piping ID	Blast Hose ID	Minimum Air Hose ID
3	3/16"	45 - 81	2 cu ft	1"	3/4"	1"
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"

Compressor Air and Abrasive Consumption

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)
	67	77	88	101	112	123	152	182	Compressor hp
	2.5	3	3.5	4	4.5	5	5.5	6.6	
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
	6	7	8	9	10	10	12	14	
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
	11	12	14	16	17	18	22	26	
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
	18	20	23	26	28	31	37	44	
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
	24	28	32	36	39	44	52	62	
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
	33	38	44	49	54	57	69	83	
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
	44	50	56	63	69	75	90	108	

Nozzle Stock Number, Dimensions, & Weights

	Model No.	Stock No.	Orifice ID	Length	Net Wt	Pkg'd Wt	Holder	Washer
Fine 1-1/4" Thread	CJD-3	01378	3/16"	3"	.60 lb	.72 lb	NHP series or CFPM 07716	NW-4
	CJD-4	01379	1/4"	3"	.64 lb	.76 lb		NW-4
	CJD-5	01380	5/16"	3"	.70 lb	.83 lb		NW-4
	CJD-6	01381	3/8"	3"	.72 lb	.84 lb		NW-4
	CJD-7	01382	7/16"	3"	.80 lb	.92 lb		NW-4
	CJD-8	01383	1/2"	3"	.80 lb	.92 lb		NW-4
Fine 1-1/4" Thread	CSD-3	01384	3/16"	4"	1.08 lb	1.20 lb	HEP series or CFP 07716	NW-4
	CSD-4	01385	1/4"	5 1/4"	1.34 lb	1.46 lb		NW-4
	CSD-5	01386	5/16"	5 5/8"	1.36 lb	1.48 lb		NW-4
	CSD-6	01387	3/8"	6 1/2"	1.62 lb	1.74 lb		NW-4
	CSD-7	01388	7/16"	7 3/4"	1.96 lb	2.08 lb		NW-4
	CSD-8	01389	1/2"	8 13/16"				NW-4
Contractor Thread	TXD-6	99147	3/8"	6 1/2"	1.7 lb	2 lb	NHP 2 or 3, CFPM 07719	NW-32
	TXD-7	99148	7/16"	7 3/4"	2.2 lb	2.5 lb		NW-32
	TXD-8	99149	1/2"	8 13/16"	2.6 lb	3 lb		NW-32
Flanged	SDX-6	01394	3/8"	6 1/2"	2 lb	4 lb	FHP incl. w/ nozzle	Cplg gskt serves as nozzle washer
	SDX-7	01395	7/16"	7 3/4"	2.2 lb	4 lb		
	SDX-8	01396	1/2"	8 13/16"	2.6 lb	4 lb		
	SDX-10	01397	5/8"	9"	lb	lb		
	SDX-12	01398	3/4"	9"	lb	lb		