

Compressed 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	19	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)
	150	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	24.60	2.961	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	

Pressure Loss in Air Hose

I.D.	Pressure Loss	Production Loss
3/4"	11.1 psi	16.6%
1"	2.4 psi	3.6%
1-1/4"	0.7 psi	1.0%
1-1/2"	0.2 psi	0.3%

Based on 150 cfm @100 psi through 50 feet of compressor air hose

For maximum efficiency, provide large air lines from the compressor to the blast machine. Place the compressor as near as possible to the blast operation. Use the largest air hose available.

Impact of Nozzle Wear on Air Consumption

Nozzle No.	Orifice Size	Increase in Air Consumption
No. 4	1/4" (6.5mm)	
No. 5	5/16" (8.0mm)	60% or more than No. 4
No. 6	3/8" (9.5mm)	38% more than No. 5
No. 7	7/16" (11.0mm)	36% more than No. 6
No. 8	1/2" (12.5mm)	33% more than No. 7

System Air Volume Requirements at 100 PSI

Nozzle	Size of Orifice	Volume of Air	Plus Helmet	Plus 50% (reserve)	Minimum Air Required
No. 4	1/4"	81	20	50	151 cfm
	6.5mm	2.3	0.5	1.4	4.2 m ³ /min
No. 5	5/16"	137	20	79	236 cfm
	8.0mm	3.9	0.5	2.2	6.6 m ³ /min
No. 6	3/8"	196	20	108	324 cfm
	9.5mm	5.5	0.5	3.0	9.0 m ³ /min
No. 7	7/16"	254	20	137	411 cfm
	11.0mm	7.2	0.5	3.9	11.6 m ³ /min
No. 8	1/2"	338	20	179	537 cfm
	12.5mm	9.6	0.5	5.0	16.1 m ³ /min

Minimum Compressor Air Line Sizes

Nozzle No.	Nozzle Orifice Size	Minimum Air Line ID
No. 3	3/16" (5.0mm)	1" (25.0mm)
No. 4	1/4" (6.5mm)	1" (25.0mm)
No. 5	5/16" (8.0mm)	1-1/4" (32.0mm)
No. 6	3/8" (9.5mm)	1-1/2" (38.0mm)
No. 7	7/16" (11.0mm)	2" (50.0mm)
No. 8	1/2" (12.5mm)	2" (50.0mm)
No. 10	5/8" (16.0mm)	2-1/2" (64.0mm)
No. 12	3/4" (19.0mm)	3" (76.0mm)