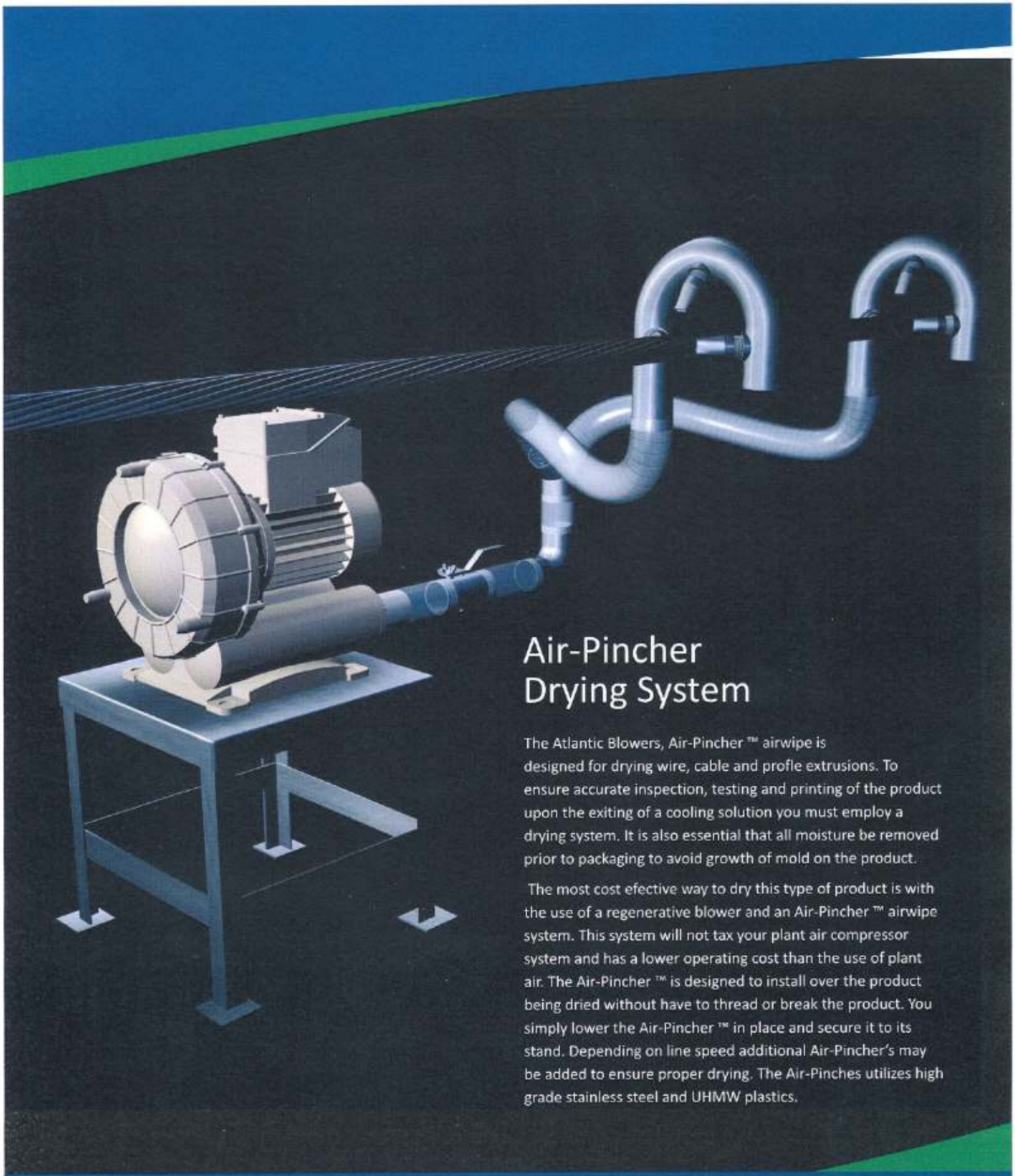


Air-Pincher Drying System

The Atlantic Blowers, Air-Pincher ™ airwipe is designed for drying wire, cable and profle extrusions. To ensure accurate inspection, testing and printing of the product upon the exiting of a cooling solution you must employ a drying system. It is also essential that all moisture be removed prior to packaging to avoid growth of mold on the product.

The most cost efective way to dry this type of product is with the use of a regenerative blower and an Air-Pincher ™ airwipe system. This system will not tax your plant air compressor system and has a lower operating cost than the use of plant air. The Air-Pincher ™ is designed to install over the product being dried without have to thread or break the product. You simply lower the Air-Pincher ™ in place and secure it to its stand. Depending on line speed additional Air-Pincher's may be added to ensure proper drying. The Air-Pinches utilizes high grade stainless steel and UHMW plastics.

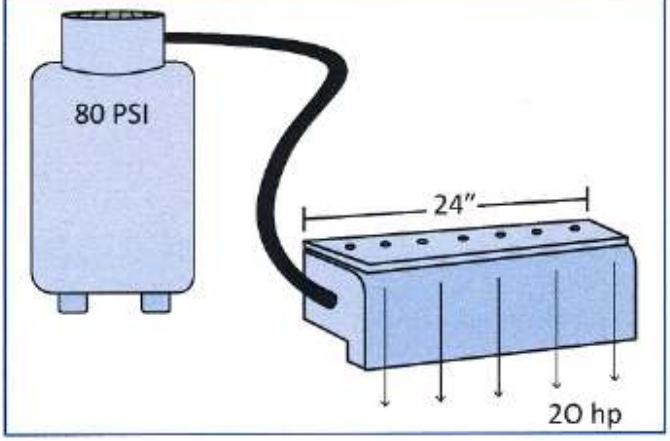
atlantic blowers

Flow of Compressed Air Through Orifce @ 100 PSIG

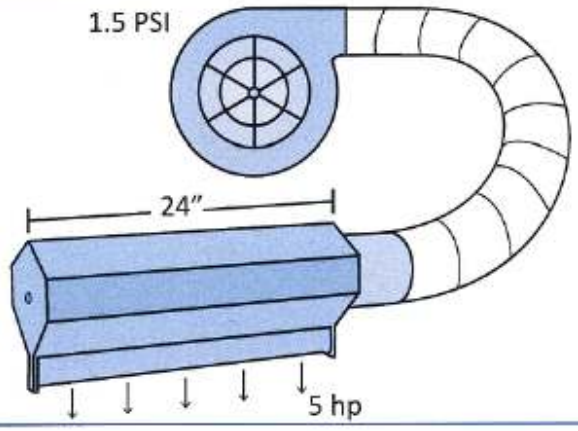
Fraction	1/32	1/16	1/8	1/4	3/8	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	2
Area in^2	0.0008	0.0031	0.0123	0.0491	0.1104	0.1963	0.3068	0.4418	0.6013	0.7854	1.2272	1.7671	3.1416
PSIG	Orifce Flow in SCFM Based on Ambient Conditions of 14.7 PSIA and 68 °F												
25	0.56	2.25	9.0	36.0	81.0	144	225	324	441	576	900	1296	2305
35	0.70	2.82	11.3	45.1	101.4	180	282	406	552	721	1127	1623	2885
40	0.78	3.10	12.4	49.6	111.6	198	310	447	608	794	1240	1786	3175
45	0.85	3.38	13.5	54.1	121.8	217	338	487	663	866	1354	1949	3466
50	0.92	3.67	14.7	58.7	132.0	235	367	528	719	939	1467	2113	3756
55	0.99	3.95	15.8	63.2	142.2	253	395	569	774	1011	1580	2276	1046
60	1.06	4.23	16.9	67.8	152.4	271	423	610	830	1084	1694	2439	4336
65	1.13	4.52	18.1	72.3	162.6	289	452	651	886	1157	1807	2602	4626
70	1.20	4.80	19.2	76.8	172.9	307	480	692	941	1229	1921	2766	4917
75	1.27	5.08	20.3	81.4	183.1	325	508	732	997	1302	2034	2929	5207
80	1.34	5.37	21.5	85.9	193.3	344	537	773	1052	1374	2147	3092	5497
85	1.41	5.65	22.6	90.4	203.5	362	565	814	1108	1447	2261	3255	5787
90	1.48	5.94	23.7	95.0	213.7	380	594	855	1163	1519	2374	3419	6078
95	1.55	6.22	24.9	99.5	223.9	398	622	895	1219	1592	2487	3582	6368
100	1.63	6.50	26.0	104.0	234.1	416	650	936	1274	1665	2601	3745	6658

Nozzle Outlet	Air Flow (SCFM)
1/16"	4.6
3/32"	12.5
1/8"	22.0
5/32"	34.0
3/16"	48.0
7/32"	64.0
1/4"	79.0
1/2"	160.0

Compressed Air



Low Pressure Blower



Compressed Air Annual Cost

1-24" airknife with "standard" 0.002 slot operating @ 80 PSIG will consume: 3.4 SCFM / in

Total air consumption equals: 81.6 SCFM

81.6 SCFM = 20 hp compressor

1 hp will deliver approximately: 4 SCFM

Calculating operating cost at $0.10 / kW

Convert hp to kW

HP x 0.7457 = kW

20 hp x 0.7457 = 14.91 kW

14.91 kW x $0.10 = $1.49 / hr x 24 hr

= $35.80 per day (Compressor only)

20 hp motor = 14,920 W

$$\frac{14{,}920 \times 8760 \text{ hours per year}}{1000}$$

= 130,700 kWh x $0.10 / kWh

= $13,070 / year

(Not including maintenance)

Low Pressure Blower Annual Cost

Requirements for operating one 24" air knife with a 0.045" gap

System Pressure at 41.5" H2O

Discharge velocity at 26,700 SCFM

Energy cost for 5 hp

Calculating operating cost at $0.10 / kW

Convert hp to kW

hp x 0.7457 = kW

5 hp x 0.7457 = 3.73 kW

3.73 kW x $0.10 = $0.37 / hr x 24 hr

= $8.95 per day

5 hp motor = 3730 W

$$\frac{3730 \times 8760 \text{ hours per year}}{1000}$$

= 32,674.80 kWh x $0.10 / kWh

= $3,267.48 / year

Maintenance & Repair Cost Considerations

Can the system be maintained by in-house personnel?

What is the cost of oil and disposal?

What is the cost of leaks?

- 50 hp compressor will generate 126,000 BTU's/HR
- 50 hp compressor requires 1.5HP refrigerated air dryer
- 65% of cost for compressed air is electrical
- 35% is for maintenance and repair
- Compressor cost 1.5 to 2.5 x the initial purchase price to operate for the frst year.

IHS

Industrial Heat Sources

Industrial Heat Sources, Inc.
PO Box 770327
1414 Riverside Dr., Suite 204
Lakewood, Ohio, 44107
Telephone: 844-862-7880
Fax: 216-862-7979
Email: Info@ihshotair.com
Website: www.ihshotair.com