

Energy Saving Air Curtain



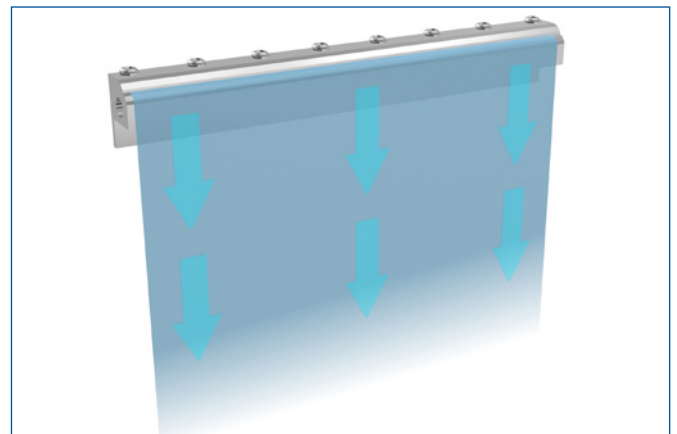
Meech Energy Saving Air Curtain provides an efficient laminar sheet of air for wide area cleaning and drying applications. Meech Air Curtains are the perfect replacements for drilled or slotted lengths of pipe. In addition, the Air Curtain offers up to 70% compressed air savings when compared to the drilled pipes.

Features and Benefits

- Energy Saving – Air Curtains can cut compressed air demand by up to 70% and reduce running costs.
- Noise Reduction – Up to 30 dBA noise reduction compared to a drilled pipe.
- Innovative design – offers Air Amplification at a ratio of 25:1.
- No moving parts – No maintenance.
- Easy to install – The flange running the entire length can be drilled at any position, allowing for easy installation.
- Available in any length – Can be manufactured in any length between 50 and 2,500mm.

How they work

The Air Curtain releases a small volume of compressed air through a .002" (.0508mm) slot along its entire length. The 'blade' of air travels down the front face of the Air Curtain creating an area of low pressure behind it that entrains ambient air at a ratio of up to 25:1, delivering a massive airflow to the target.

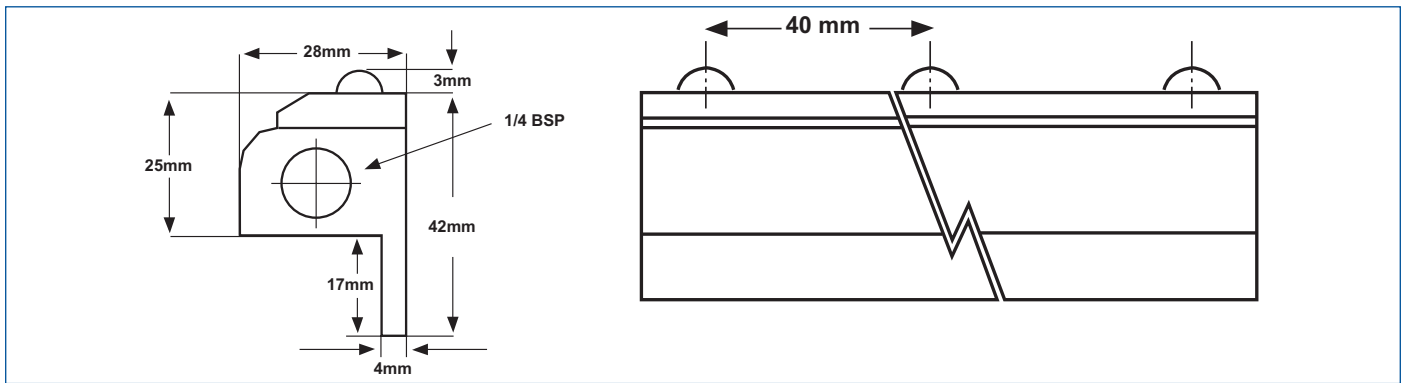


Air Curtains used to dry top of jars

Applications

- **Product Drying** - The laminar sheet of air that is created by the Air Curtain is perfect for the drying of a wide variety of components.
- **Product Cooling** - The 25:1 air amplification makes the Air Curtain ideal for any type of cooling.
- **Product cleaning/Swarf removal** - The unique design of the Air Curtain allows it to clean over wide areas.
- **Air Barrier** - Air Curtains can be used to form an air barrier. For example Air Curtains have been used above oven doors to keep heat within the oven.

Dimensions



Energy Saving Example - Air Curtain

Company 'E' uses a drilled 300mm pipe with 11 x 2mm holes drilled along its length at 25mm intervals. The pipe is used to blow swarf from routed MDF panels. The homemade length of pipe runs constantly for 15 hours a day, 6 days a week and 48 weeks a year. The electricity costs for company 'E' is 8p per kWh.

The 300mm pipe has an air consumption of 58cfm (1,642 l/min) at 80 psi (5.4 Bar). The thrust level from the 300mm pipe at this pressure will be approximately 470 grams. The total compressed air cost of the 300mm pipe adds up to £3,758 per year.

By replacing the 300mm pipe with a 300mm Meech Air Curtain, Company 'E' will see both cost and environmental savings, as well as an improved cleaning performance.

A Meech 300mm Energy Saving Air Curtain running at 80 psi (5.4 Bar) will consume 30 cfm (849 l/min) and have a thrust level of 834 grams. The added thrust from the Meech Air

Curtain means Company E can reduce the inlet air pressure to achieve the same results.

Company 'E' was able to reduce the air pressure from 80 psi (5.4 Bar) to 40 psi (2.7 Bar) and still get over 400 grams of thrust. This decrease in inlet air pressure has reduced the consumption from 52 cfm (1,472 l/min) to 30 cfm (849 l/min). The total cost of a Meech 300mm Air Curtain running at 40 psi (2.7 bar) is £1,944.

This adds up to an annual saving of £1,816. Finally, the cleaning performance will also improve. The laminar sheet of air, running the entire length of the Air Curtain cleans better than the 'striped' cleaning effect produced by the drilled pipe.

Running Cost Comparison

Duration	300mm Air Curtain (£)	300mm Drilled Pipe (£)
Per Day	6.75	13.05
Per Week	40.50	78.30
Per Year	1,944	3,758

Air Consumption and Noise Comparison

Product Code	Product	Air Consumption										Sound Level*					Thrust Level*				
		cfm					l/min					dBA					grams				
psi		20	40	60	80	100	20	40	60	80	100	20	40	60	80	100	20	40	60	80	100
Bar		1.4	2.7	4.1	5.4	6.8	1.4	2.7	4.1	5.4	6.8	1.4	2.7	4.1	5.4	6.8	1.4	2.7	4.1	5.4	6.8
A85003	80mm Air Curtain	5	8	11	14	17	142	227	311	396	481	64	73	79	82	84	51	110	192	286	350
A85006	150mm Air Curtain	9	15	20	26	31	255	425	566	736	878	64	75	80	83	85	81	193	310	485	535
A85012	300mm Air Curtain	19	30	41	52	63	538	849	1161	1472	1784	63	74	78	83	81	92	293	483	652	655
A85018	450mm Air Curtain	28	44	61	77	94	793	1246	1727	2180	2662	66	78	81	82	86	90	298	502	661	668
A85024	600mm Air Curtain	37	59	81	103	125	1048	1671	2294	2917	3540	64	76	82	84	90	93	301	488	674	676
A85030	750mm Air Curtain	47	74	102	129	156	1331	2095	2888	3653	4417	70	81	85	87	88	99	308	488	675	678
A85036	900mm Air Curtain	56	89	122	155	188	1586	2520	3455	4389	5324	66	78	86	89	88	95	306	491	680	685
300mm pipe with 11 x 2mm DIA holes (25mm spacing)		20	33	46	58	70	566	934	1303	1642	1982	73	79	81	85	87	79	166	375	470	569

* Sound level taken 1 meter from source
Measured at factory setting