

DESCRIPTION:

Ventilation panels are specifically designed to maintain substantial airflow, while filtering unwanted EMI and/or dust. Ja-Bar's air filtration devices are available in a wide variety of styles, and are supplied to meet your specific needs.

APPLICATION:

Intended for use where electronic equipment requires ventilation, while the free flow of electro-magnetic waves are not acceptable. The filtration media chosen for your application depends on your specific requirements. Listed below are the various types available.

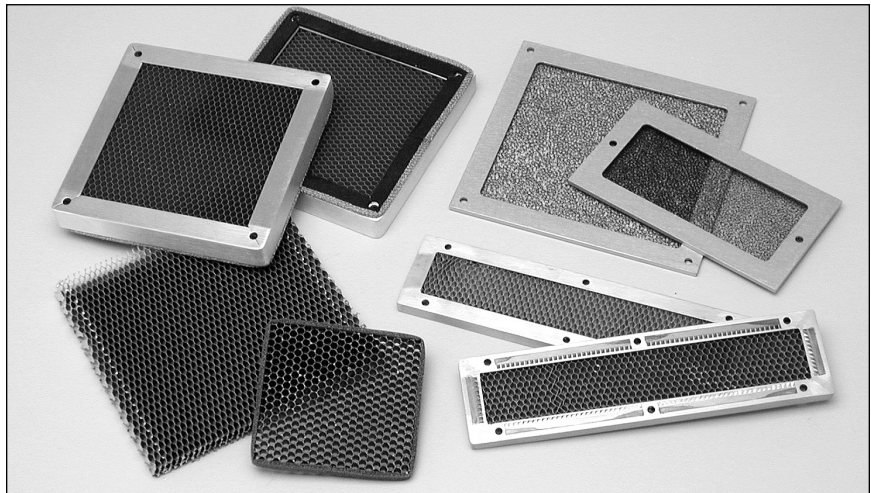
Honeycomb Core: This type of media is used most frequently in the electronics industry. This allows for the best airflow of all the available filtration media. The effective attenuation depends on the core material chosen, the depth and width of the cell, and the plating used.

Woven Screen: This style of media is used when dust and EMI must be controlled. Corrugated screen is layered to the required thickness, usually one half inch, and is supplied with a water-soluble film to aid in dust retention.

Expanded Metal: Layers of expanded metal screen are compiled to produce our most effective Dust/EMI filtration device. This media generates the most resistance to the airflow, however its' efficient retention of dust is unsurpassed.

A variety of thicknesses (and cell widths) are available for each of the filtration media. Listed below are our standards.

Part No.	Thickness	Cell width
2X1	.250	.062
2X2	.375	.062
2X3	.375	.125
2X4	.500	.062
2X5	.500	.125
2X6	.750	.125
2X7	.750	.188
2X8	1.00	.125
2X9	1.00	.188



SPECIFICATIONS:

Listed below are various filtration media available

Part No.	Material	Style	Specification
21X	Aluminum-0 slant	Honeycomb	Al alloy 5056
22X	Aluminum-30 slant	Honeycomb	Al alloy 5056
23X	Aluminum-45 slant	Honeycomb	Al alloy 5056
24X	Soldered Brass	Honeycomb	Brass alloy 260
25X	Soldered Brass	Honeycomb	SAE-1010
26X	Aluminum Screen	Woven	AMS-4182
27X	Copper Screen	Woven	*
28X	Aluminum Screen	Expanded	QQ-A-250
29X	Copper Screen	Expanded	*

SHIELDING EFFECTIVENESS

The shielding effectiveness of a vent panel will vary depending on its construction. Thickness, cell size, metal make-up, plating, fastener location and interface gasket all play an important role in the final effectiveness of the installed panel. The following table shows the variation of specific designs using the same style of caskets interface (SnCuFe wire mesh) in 12 in X 12 inch vents.

Part No.	Plating	100 KHz	10MHz	100 MHz	1GHz	10GHz
215	CHROMATE	65	110	110	80	65
215	TIN	85	130	130	110	90
246	TIN	120	130	130	120	120
256	TIN	120	125	130	120	120
264	CHROMATE	85	110	110	85	65
264	TIN	90	120	120	110	90
294	TIN	100	130	130	110	110

GASKET DESIGN

As stated previously, gasket choice is a major decision which will effect the overall performance of the vent panel. The following list depicts the part number designator for the most commonly used gasketing interfaces:

2XX-X1XX:	Neoprene Sponge / Wire mesh gasket
2XX-X2XX	Neoprene Solid / Wire mesh gasket
2XX-X3XX	Silicone Sponge / Wire mesh gasket
2XX-X4XX	Silicone Solid / Wire mesh gasket
2XX-X5XX	Wire Oriented in silicone gasket
2XX-X6XX	Wire mesh gasket
2XX-X7XX	Silver filled silicone gasket
2XX-X9XX	Custom Vent Panel Design

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FASTENER DESIGN

The type of fastener as well as the spacing between the fasteners is also an important design consideration. This decision must incorporate the compressibility of the gasket, the thickness (flexibility) of the mating surfaces, and the intended closing force. The most commonly used fasteners are listed below with their part number designators (2XX-XXXX- _ _ _ _):

1XXX	Thru Holes
2XXX	6-32 Rivnuts
3XXX	8-32 Rivnuts
4XXX	6-32 Helicoil
5XXX	8-32 Helicoil
6XXX	No Holes

FINISHING OPTIONS

1XX	Chemical Conversion MIL-C-5541, Class I
2XX	Tin Plating per MIL-T-10727, Type I
3XX	Cadmium Plate per QQ-P-416
4XX	Electroless Nickel Plate per MIL-C-26074

PLATING CAPABILITIES

Black Oxide Coating - (Mil-C-13924)

Black oxide coating is a uniform black coating for ferrous metals, used mostly for decoration, for moving parts that cannot tolerate a dimensional change and to decrease light reflections. It gives only limited corrosion resistance under mild conditions. Black Oxide is given a supplementary protective treatment for relatively short-term corrosion resistance.

Chemical Film - (Mil-C-5541)

Chemical film coatings for aluminum can be clear to golden iridescent in color. Chemical film is used as a corrosion preventative film for electrical and electronic applications, or to improve adhesion of paint finish systems.

Chrome - (QQ-C-320)

Chrome can be bright or have a satin finish. It has excellent hardness, wear corrosion, heat and friction resistance. Chrome is used for decoration.

Copper - (Mil-C 4550)

Copper in color; matte to shiny finish, as under-coat, for heat treatment stop off and to prevent basic metal migration into tin.

Electroless Nickel - (Mil-C-26074)

Electroless nickel is similar to stainless steel in color plates uniform & in recesses and cavities, (does not build up on edge). Corrosion resistance is good. Can be used for salvage of mis-machined parts.

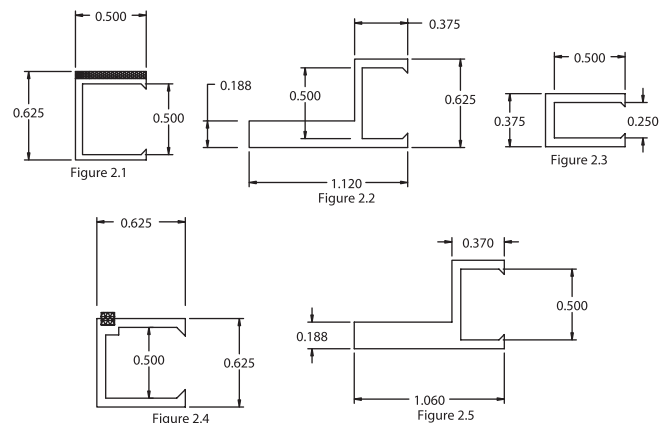
Nickel - (OQ-N-290)

Nickel has bright or semi-bright finish. This protects iron, copper or zinc alloys against corrosion, as an undercoat for chromium, and precious metals, or for decoration. This also helps against, build-up of worn or undersized parts, wear; abrasion and chemical corrosion resistance.

FRAME DESIGN

Aluminum vent panels require extruded frames for structural support. Ja-Bar stocks five different commonly used frames styles, insuring fast delivery of a vent panel you can use for your particular application. Figures 2.1 thru 2.5 show the cross-section view of our extruded framing materials.

2XX-1XXX:	Fig. 2.1: 0.375 base X 0.250 leg
2XX-2XXX:	Fig. 2.2: 0.500 base X 0.250 leg
2XX-3XXX:	Fig. 2.3: 0.625 base X 0.500 leg
2XX-4XXX:	Fig. 2.4: 1.125 base X 0.500 leg
2XX-5XXX:	Fig. 2.5: 1.060 base X 0.375 leg



Passivate - (QQ-P-35)/(Mil-S-5002)

Passivate, a process to remove foreign materials from the surface of stainless steels and corrosion resistant steels, promotes natural tendency of the surface to oxidize.

Sulfuric Anodize - (Mil-A-8625)/Type IICL 1

Sulfuric anodize corrosion resistant coating for aluminum. The color will vary with alloy. Can be dyed specific colors. Aluminum with low alloying elements will show practically no color change. Best coating on aluminum for dyeing.

Sulfuric Anodize - (Mil-A-8625)/Type II-CL2

Can be dyed practically any color or shade. (black blue. red. gold, etc.)

Hard Anodized - (Mil-A-8625)/Type III

Color will vary from light tan to black depending on alloy and thickness. Can be dyed in darker colors, depending on thickness.

Coating penetrates base metal as much as builds up on the surface. The term THICKNESS includes both the build-up and penetration. Provides very hard ceramic type coating abrasion resistance will vary with alloy and thickness of coating. Good dielectric properties. Corrosion resistance is good, but recommend seal hard anodize in 5% dichromate solution where increased corrosion resistance is required. (Where extreme abrasion resistance is required, do not seal as some softening may be encountered.)

Tin - (Mil-T-10727)/Type I only

Tin, gray white in color for type I. Soft, but ductile, good corrosion resistance, excellent solderability.

*Reference Military Plating Specifications

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STANDARD VENT DESIGNS

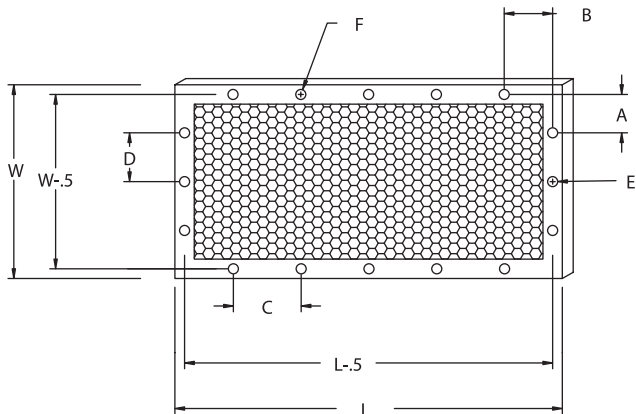


Figure 2.6 – Standard Vent Design

Part No.	W x L	A	B	C	D	E	F
XX01	3 X 3	1.25	1.25	—	—	1	1
XX02	3 X 4	1.25	1.75	—	—	1	1
XX03	3.5 X 7.25	1.50	1.25	2.12	—	-	-
XX04	4 X 4	1.75	1.75	—	—	1	1
XX05	4 X 5	1.75	2.25	—	—	1	1
XX06	4 X 6	1.75	1.00	3.50	—	1	2
XX07	4 X 7	1.75	1.50	3.50	—	1	2
XX08	4 X 8	1.75	.750	3.00	—	1	3
XX09	4 X 10	1.75	1.25	3.50	—	1	3
XX10	4 X 12	1.75	1.25	3.00	—	1	4
XX11	4 X 15	1.75	1.25	3.00	—	1	5
XX12	4 X 17	1.75	1.25	3.50	—	1	5
XX13	5 X 5	2.25	.750	3.00	—	1	2
XX14	5 X 6	2.25	1.00	3.50	—	1	2
XX15	5 X 7	2.25	1.50	3.50	—	1	2
XX16	5 X 9	2.25	.750	4.00	—	1	3
XX17	5 X 10	2.25	1.25	3.50	—	1	3
XX18	5 X 11	2.25	1.25	3.00	—	1	3
XX19	5 X 12	2.25	1.25	3.00	—	1	4
XX20	6 X 6	1.00	1.00	3.50	3.50	2	2
XX21	6 X 7	1.00	1.50	3.50	3.50	2	2
XX22	6 X 8	1.25	.750	3.00	3.00	2	3
XX24	6 X 10	1.00	1.25	3.50	3.50	2	3
XX25	6 X 12	1.00	1.25	3.00	3.50	2	3
XX26	6 X 15	1.00	1.25	3.00	3.50	2	4
XX27	7 X 7	1.50	1.50	3.50	3.50	2	5
XX28	7 X 8	1.50	.750	3.00	3.50	2	2
XX29	7 X 9	1.50	.750	4.00	3.50	2	3
XX30	7 X 10	1.50	1.25	3.50	3.50	2	3
XX31	7 X 11	1.50	1.25	3.00	3.50	2	3
XX32	7 X 12	1.50	1.25	3.00	3.50	2	3
XX33	7 X 14	1.50	1.50	3.50	3.50	2	4
XX34	8 X 8	2.00	.750	3.00	3.50	2	3
XX35	8 X 9	2.00	.750	4.00	3.50	2	3
XX36	8 X 10	2.00	1.25	3.50	3.50	2	3
XX37	8 X 11	2.00	1.25	3.00	3.50	2	3
XX38	8 X 12	.750	1.25	3.00	3.00	3	4
XX39	8 X 14	.750	1.50	3.50	3.00	3	4
XX40	8 X 16	.750	1.25	3.25	3.00	3	5