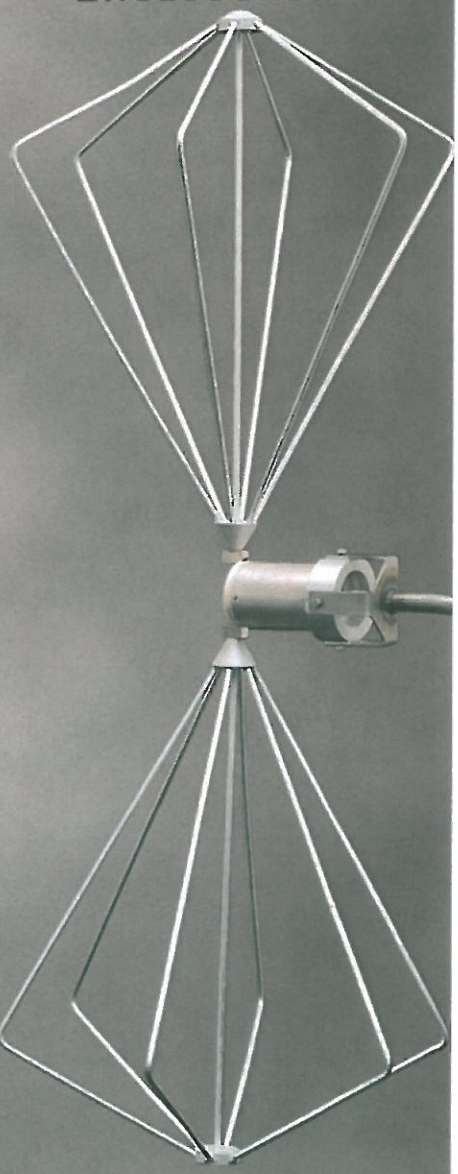
EMCOR®
QUALITY ENCLOSURES

EMISSION CONTROL PLUS SHIELDED TEMPEST STYLE ENCLOSURES



A. Medium height vertical frame with front shielded surface door, modified connector panel manufactured to your specifications, full length rear shielded surface door, pontoon base and shielded side panels.

B. Two bay vertical frame console, shielded front honeycomb filtered surface doors with blower and shielded filter panel, rear shielded surface doors with connector panel in access area, pontoon bases, shielded frame joiner and shielded side panels.

C. Vertical frame with optional mounting straps for short depth mounting, chassis guides, cradle slide assemblies, solid and perforated equipment shelves, bus bar, plug-in strip, honeycomb filtered shielded front surface door, rear panel and shielded side panels.

FEATURES AND BENEFITS OF EMCOR® MIL-SPEC ENCLOSURES

Emcor's Emission Control Plus System offers, at a competitive price, both the flexibility of modularity and superior shielding performance not available with most other lines. With Emcor you need not sacrifice appearance to achieve high levels of shielding. The Emcor name has stood for proven quality and reliability for over forty years.

Additional benefits include the following:

- Standard 19" & 24" panel widths, 3 depths and 6 vertical heights.
- Fully welded heavy duty 12-gauge steel multi-formed frame channel with a one-piece solid top and bottom provides superior strength and rigidity for RFI sealing purposes.
- Each frame and shielding component is fully nickel plated for superior conductivity and hardness.
- Beryllium copper spring-finger gasketing is used for all bolt-on components such as doors, side panels and closure panels for long lasting shielding without compression set. This type gasketing along with the nickel plating offers excellent galvanic compatibility to ensure electrical conductivity around the entire opening.
- All frames are supplied with 2 pairs of fully adjustable multi-formed mounting angles.
- Each frame is supplied with at least one lower access area which allows provisions for blower mounting, a filter panel or cable entry area. Additional filters can be placed in the top or bottom upon request.
- Emcor's shielded, patent pending, door design offers a clean contemporary appearance with its semi-flush handle and 3-point latching system. This design provides a strong, consistent and unequaled method of RFI sealing with minimal effort.
- Shielded doors and closure panels are available in both plain or honeycomb filtered styles.
- To finish your enclosure system you can select from a complete line of accessories such as chassis guides, cradle slide assemblies, shelves, etc.
- All frames and exterior component items are painted with a high quality textured alkyd baked enamel finish over nickel plating with gasket contact points being masked prior to painting.

DIMENSIONAL DRAWINGS:

The dimensional drawings that are shown on the following pages are for your reference only and depict the dimensions that are normally required in specifying and ordering enclosures. Detailed engineering drawings are available on request.

Technical information listed within this catalog is subject to change without notice.

In the development of the Emcor Emission Control Plus cabinetry line, the following military and federal specifications have been examined. Please contact the factory for specific compliance status and information.

MIL-I-45208	Inspection system requirements.
MIL-C-45662	Calibration system requirements.
MIL-STD-105	Sampling procedures for inspection.
MIL-STD-285	Attenuation measurements for enclosures; methods of test.
MIL-STD-889	Dissimilar metals.
MIL-C-26074	Requirements for electroless nickel coatings
QQ-N-290	Nickel plating (electrodeposited).
ASTM-B633	Zinc coating (electrodeposited). (Formerly QQ-Z-325C)
EIA-310	Racks, panels & associated equip. (Replaced MIL-STD-189)
MIL-STD-454	General requirements for electronic equipment.
MIL-STD-130	Identification marking of U.S. military property.
MIL-STD-129	Marking for shipment & storage.
MIL-STD-794	Procedures for packaging parts and equipment.
MIL-STD-595	Color definition.
MIL-P-53022	Primer, epoxy coating, lead and chromate free.
MIL-TTC-490	Cleaning methods for ferrous surfaces and pretreatment for organic coatings.
MIL-T-704 (section 3.2.1)	Treatment and painting of material.
MIL-P-28582	Primer coating, exterior, lead pigment-free.
MIL-P-85582	Primer coatings, epoxy, waterborne.
TT-P-636	Primer coating, alkyd, wood and ferrous metal.
TT-P645	Primer, paint, zinc-chromate, alkyd type.
TT-P-664	Primer coating, alkyd, corrosion-inhibiting, lead and chromate free, VOC-compliant.
TT-P-1757	Primer coating, zinc chromate, low moisture-sensitivity.
MIL-P-53022	Primer, epoxy coating, corrosion inhibiting, lead and chromate free.
TT-E-485	Enamel, semi-gloss, rust-inhibiting.
TT-E-486	Enamel, alkyd,gloss, low VOC content.
TT-E-505	Enamel, odorless, alkyd,interior, high gloss, white and light tints.
TT-E-506	Enamel, alkyd, gloss, tints and white (for interior use).
TT-E-508	Enamel, interior semigloss, tints and white.
TT-E-509	Enamel, odorless, alkyd, interior, semi gloss , white and tints.
TT-E-515	Enamel, alkyd, lusterless, quick-drying.
TT-E-527	Enamel, alkyd, lusterless, low VOC content.
TT-E-529	Enamel, alkyd, semigloss, low VOC content.

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TECHNICAL INFORMATION

Electromagnetic energy which affects the performance of electrical or electronic devices or systems adversely and results in the degradation of its performance is defined as electromagnetic interference (EMI). Electromagnetic compatability (EMC) is the technology of reducing the unwanted interference (EMI) to a level that allows the electronic system to operate properly. This is done by both suppressing and containing electromagnetic emissions, and shielding equipment susceptible to such emissions.

EMI sources may be natural such as lightning discharges or man-made. Man-made sources can be intentional, such as radio and television transmitters or unintentional such as digital electronic equipment, ignition systems and rotating electrical machinery.

Because of the growing number of commercial, industrial, and consumer electronic devices that produce high frequency signals along with electronic and electrical equipment used by the military that operates at high sensitivity levels, specifications have been developed to limit EMI. The most commonly used military standard for both emissions and susceptibility is MIL-STD-461. Commercial standards deal only with emissions. The most applicable are FCC, Part 15, Subpart J and the German VDE standards. These standards specify the maximum permissable signal levels from a system; they do not tell a manufacturer what must be done to reduce emissions.

Ideally, reduction of EMI should begin by designing the source to generate less EMI, and to prevent the escape of the remaining generated interference. Susceptibility may be reduced by designing to prevent the intrusion of anticipated interference. Since either the equipment, its power cord, control or signal cables can radiate and conduct EMI, the use of filters at the point the cables enter or leave an enclosure can reduce both conducted and radiated susceptibility.

Any barrier placed between an EMI source and a susceptor that reduces the strength of the interference can be regarded as an EMI shield. How well the shield reduces or attenuates the interference is referred to as its shielding effectiveness. The standard unit of measurement for shielding effectiveness is the decibel (dB). A common shielding approach is to enclose the equipment in a cabinet which provides the protection needed. The ideal EMI cabinet would be a box of metal construction with no seams or openings. This is not practical since the equipment would require a source of power and access panels. The most difficult problem in providing an EMI enclosure is maintaining the shielding effectiveness without interferring with the normal use of the cabinet. Any opening creates a potential EMI path either into or out of the enclosure. Access panels of such openings require a seal to maintain the electrical continuity of the cabinet. This electromagnetic sealing can be done by metal-to-metal contact or by the use of conductive gaskets.

Gaskets used for EMI shielding are often thought of as shields themselves. The difference is, a shield is a barrier used to reduce the transfer of energy from one electromagnetic source to another and a gasket is used to preserve the continuity of the shield. A metal shield attenuates an electromagnetic field by reflection and absorption. The absorption loss is proportional to the material's thickness, conductivity, permeability, and the frequency. The shielding effectiveness of an enclosure is determined not only by the material but also by the joint design. Any gap or discontinuity between panel and frame presents a high impedance area with consequent reduction in attenuation. An EMI gasket is necessary where an imperfect surface condition exists. If the mating surfaces were perfectly flat and infinitely rigid, no gasket would be necessary. Using an EMI gasket will not restore the shielding effectiveness of the original enclosure. The amount of degradation depends on the gasket material and its application. The ideal gasket surface is rigid and as conductive as possible. Metal surfaces mating with the gasket need to be non-corrosive and galvanically compatible. Considerations that will govern the selection of the EMI gasket will be: the gasket material's ability to exclude or confine EMI, the number of times the joint will be opened and closed, resistance to structural deterioration and the ability to maintain resiliency, galvanic compatibility, and its ability to conform to uneven joint surfaces.

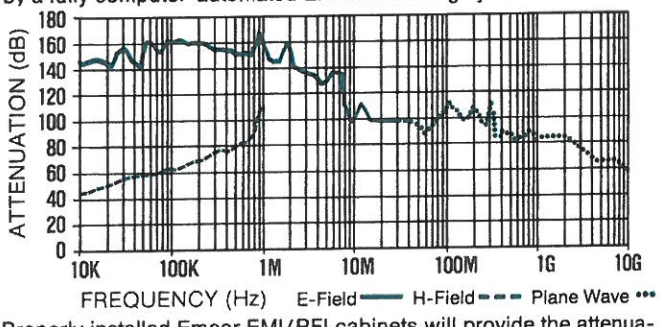
Common joint designs call for the EMI gasket to be located between a recessed ledge and the access panel. Fasteners are required to insure adequate gasket compression and compensate for joint uneveness. The pressure applied should be sufficient to achieve the required electrical seal without causing a compression set. Closure forces required to compress a gasket can often cause bowing of the access panel. This bowing can be severe enough to cause insufficient pressure on the gasket, resulting in reduced shielding effectiveness. Over-compression in the bolt areas are also potential problems. To avoid damage to the gasket or excessive bowing of the access panel, groove designs, increasing the number of bolts and compression stops are often suggested.

Where entry is infrequent, fasteners can be spaced as necessary. But when a large door is required the problem becomes acute. The door gasket will be required to take up larger variations in clearance since it is feasible to use only a limited number of latches to draw the door closed and compress the gasket. It must also be constructed so that its edges do not bow under pressure. Adjustability of the hinge and latching are also required, to maintain the seal with age and use.

In the design and development of the Emcor Emission Control Plus enclosures the aim has been to retain the versatility of the modular design while attaining a higher degree of shielding. To achieve this we use multiformed frame channels to provide additional frame rigidity. By using beryllium copper spring-finger gasket located between a recessed frame ledge and the panel edges, rather than compressed behind it, a mechanical advantage is gained. By controlling the panel size and frame opening dimensions, the gasket bears most of the burden of assuring joint integrity instead of relying on fasteners to control compression. The beryllium copper spring finger gasket provides the ideal combination of high electrical conductivity with low contact pressure required for effective shielding and will not compression set.

Since the door is usually the most difficult component on which to provide a consistent shield, a revolutionary patented two-part door design was developed. This unique design consists of an inner panel to provide the actual shielding and a cosmetic outer panel. This allows the inner panel to be free of handle and latch mountings that normally violate the door panel and lead to EMI leakage.

Emcor's advanced design in modular enclosures offers shielding capabilities that are second to none. Shielding effectiveness was determined using the measurement procedures of Mil. Std. 285. Testing was done at an FCC recognized and tempest capable test facility by a fully computer-automated EMC measuring system.



Properly installed Emcor EMI/RFI cabinets will provide the attenuation levels shown on the test data. Any modification to the cabinets as supplied from the factory will vary the specified attenuation results.

The cabinets tested were 32.812" deep, 74.375" tall and 23.312" wide. Cabinets were completely closed with a surface front door and flush rear and side panels. Shielding effectiveness may vary slightly as frame size varies and as equipment is changed or added.

HOW TO ORDER

The Emcor Emission Control Plus catalog has been designed to provide an easy-to-read detailed catalog, which you will find both useful and informative.

Follow the steps listed below.

1. Select frame size and option number, (refer to Vertical Frames Page 6, 7 and 8.)

   Example:

   MFR-287019-1

   - 1 — Frame Option Number
   - 19 — Panel Width 19"
   - 70 — Largest Nominal Vertical Opening 70"
   - 28 — Overall Depth 28 5/16"

2. Use the Ordering Guide (refer to page 18) to assist in determining required component parts. Also refer to accessory section for optional component items.

3. Follow order check list shown below to ensure that the necessary information is available for order placement.

4. Once you have determined the frame and additional components required to meet your enclosure needs, and you have reviewed the order check list, you can place an order by either mailing or calling your order to the EMCOR sales office or your area EMCOR representative.

Correspondence should be addressed to the factory:

Crenlo, Inc.
Emcor Products
1600 4th Avenue NW
Rochester, Minnesota 55901

or to

Crenlo, Inc.
Emcor Products
In care of your area representative.

EMISSION CONTROL PLUS ORDER CHECK LIST

Once you have selected the components for your enclosure system, review the following check list before placing your order.

- ☐ Complete Billing and Shipping Information
- ☐ Purchase Order Number
- ☐ Purchase Order Made Out to: Crenlo, Inc., Emcor Products
- ☐ Telephone Number and Name of Contact Person
- ☐ New Customers Must Provide 4 Credit References: A Principle Bank and 3 Commercial Venders complete with contact names and telephone numbers
- ☐ F.O.B. Rochester, MN
- ☐ Freight Charges; Collect, Prepaid and add, or C.O.D.
- ☐ Terms of Payment: Net 30 days from date of invoice
- ☐ Paint Color(s) Textured Finish only
- ☐ $75.00 minimum order

ADDITIONAL INFORMATION . . .

Emcor's terms of sale are F.O.B., our plant, Rochester, Minnesota, Net 30 days from date of invoice. All orders are subject to credit approval and a minimum order charge of $75.00 will apply.

Emcor offers twelve standard paint colors applied **in a textured enamel finish.**

Engineering drawings or color charts are available upon request. You may obtain pricing and other pertinent data by contacting you area Emcor representative or the Emcor Sales office.

Emcor Emission Control Plus frames and components are assembled as completely as possible in individual bays to facilitate shipping.

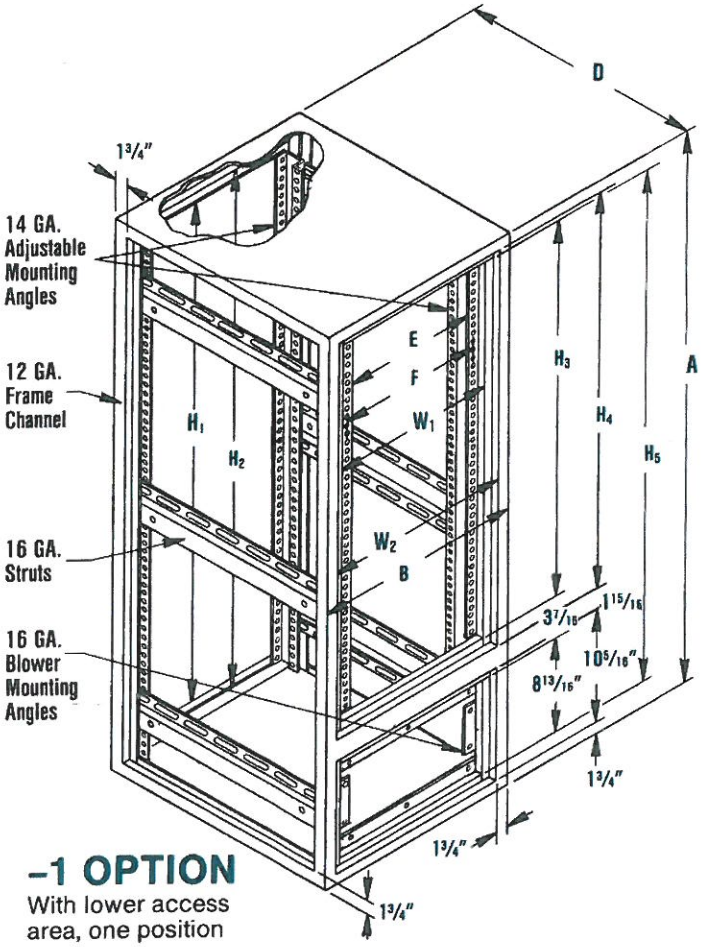
Technical information listed within this catalog is subject to change without notice.

VERTICAL FRAMES

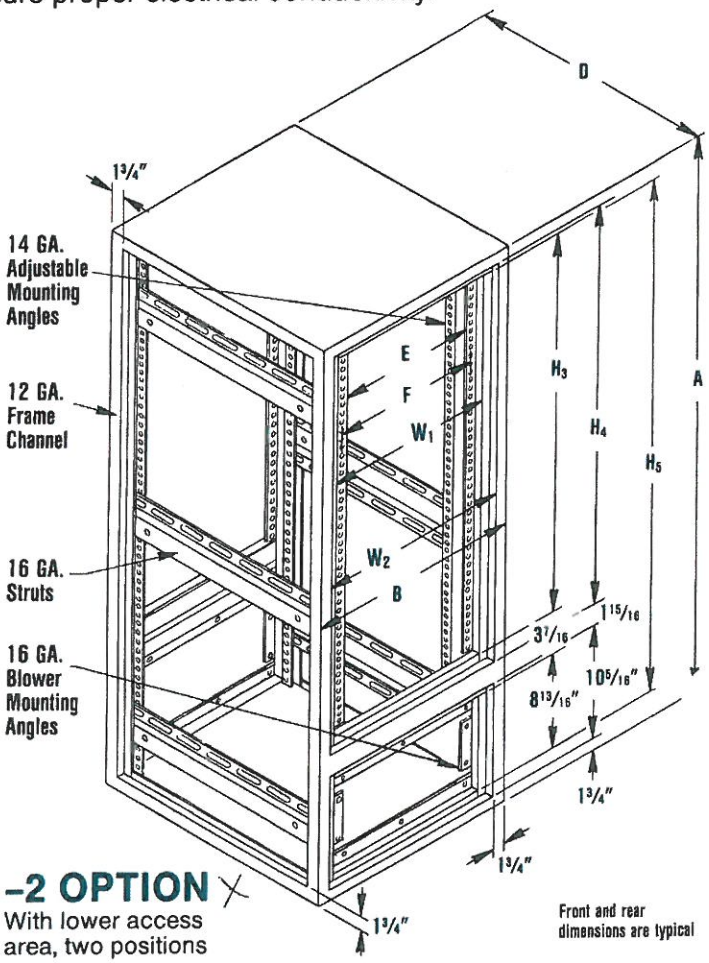
VERTICAL FRAME OPTIONS

36 sizes available, each in 2 different configurations as shown below.

- Emission Control Plus frames are fully plated to MIL-C-26074C, electroless nickel specifications. The gasket contact areas are then masked prior to painting to assure proper electrical conductivity.



–1 OPTION
With lower access area, one position



–2 OPTION
With lower access area, two positions

Front and rear dimensions are typical

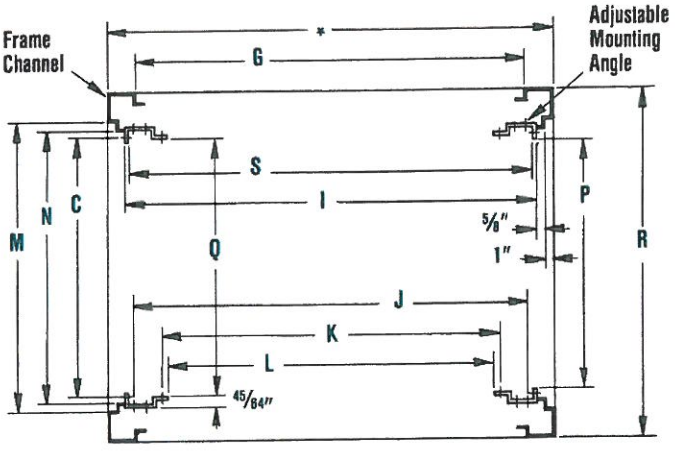
- All openings must be covered in order to properly control emissions.
- All Emission Control Plus frames are constructed with a welded, non-removable, one piece top and bottom. A honeycomb filter or I/O access is available in these areas upon request. Contact the factory for part number.

PANEL MOUNTING ANGLE LOCATION CHART

NOTE: Extra mounting angles or straps can be mounted in any location front to rear.

	19" Panel Width	24" Panel Width
M	20 9/16	25 9/16
N	19 1/16	24 1/16
C	18 5/16	23 5/16
P	17 23/32	22 23/32
Q	18 1/32	23 1/32
R	24 1/16	29 1/16

*	28 5/8" Frame Depth	33 9/16" Frame Depth	38 7/8" Frame Depth
G	24 13/16	30 1/16	35 3/8
S	24 29/32	30 5/32	35 15/32
I	25 1/16	30 5/16	35 5/8
J	24 9/32	29 17/32	34 27/32
K	20 15/16	26 3/16	31 1/2
L	20 3/8	25 5/8	30 15/16



TOP VIEW

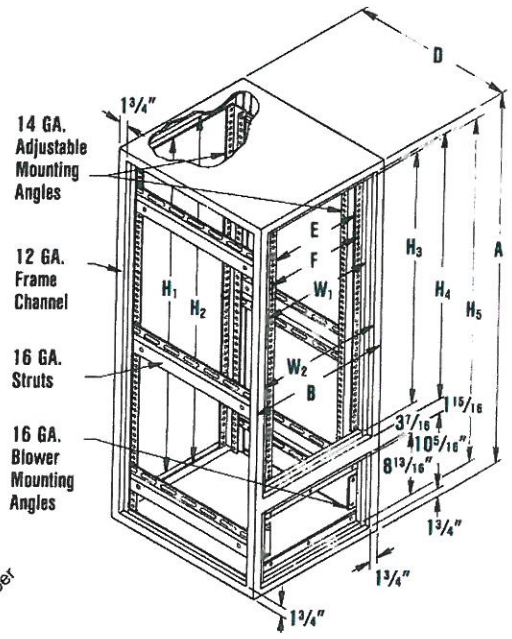
VERTICAL FRAMES

Vertical frames are available in six opening sizes, two panel widths and three frame depths for maximum flexibility.

REFER TO PAGE 18 FOR ORDERING GUIDE

- 2 PANEL WIDTHS: 19", 24"
- 3 DEPTHS: 28 5/16", 33 9/16", 38 7/8"
- 6 VERTICAL FRAME OPENING HEIGHTS:

26 3/8"	61 3/8"
40 3/8"	70 1/8"
52 5/8"	78 7/8"



VERTICAL FRAME PART NUMBER

MFR - □ □ □ - 1

- Frame Depth
- Largest Nominal Vertical Opening (H Dimension)
- Nominal Panel Width 19" or 24"
- Frame Option Number

-1 OPTION

With lower access area, one position

HOW TO DEVELOP YOUR PART NUMBER...

EXAMPLE:

MFR-337819-1

- Frame Option Number
- Panel Width 19"
- Largest Nominal Vertical Opening 78 3/4"
- Overall Depth 33 9/16"

19" PANEL WIDTH

FRAME	D	H1	H2	H3	H4	H5	W1	W2	A	B	E	F
MFR-282619-1	28 5/16	26 3/8	27 1/16	14 1/8	15 5/16	26 3/8	19 1/16	20 9/16	31 3/16	24 1/16	17 23/32	18 5/16
MFR-284019-1	28 5/16	40 3/8	41 7/8	28 1/8	29 5/8	40 3/8	19 1/16	20 9/16	45 3/16	24 1/16	17 23/32	18 5/16
MFR-285219-1	28 5/16	52 5/8	54 1/8	40 3/8	41 7/8	52 5/8	19 1/16	20 9/16	57 3/16	24 1/16	17 23/32	18 5/16
MFR-286119-1	28 5/16	61 3/8	62 7/8	49 1/8	50 5/8	61 3/8	19 1/16	20 9/16	66 3/16	24 1/16	17 23/32	18 5/16
MFR-287019-1	28 5/16	70 1/8	71 5/8	57 7/8	59 3/8	70 1/8	19 1/16	20 9/16	75 1/16	24 1/16	17 23/32	18 5/16
MFR-287819-1	28 5/16	78 7/8	80 3/8	66 5/8	68 1/8	78 7/8	19 1/16	20 9/16	83 7/8	24 1/16	17 23/32	18 5/16
MFR-332619-1	33 9/16	26 3/8	27 1/16	14 1/8	15 5/16	26 3/8	19 1/16	20 9/16	31 3/16	24 1/16	17 23/32	18 5/16
MFR-334019-1	33 9/16	40 3/8	41 7/8	28 1/8	29 5/8	40 3/8	19 1/16	20 9/16	45 3/16	24 1/16	17 23/32	18 5/16
MFR-335219-1	33 9/16	52 5/8	54 1/8	40 3/8	41 7/8	52 5/8	19 1/16	20 9/16	57 5/16	24 1/16	17 23/32	18 5/16
MFR-336119-1	33 9/16	61 3/8	62 7/8	49 1/8	50 5/8	61 3/8	19 1/16	20 9/16	66 3/16	24 1/16	17 23/32	18 5/16
MFR-337019-1	33 9/16	70 1/8	71 5/8	57 7/8	59 3/8	70 1/8	19 1/16	20 9/16	75 1/16	24 1/16	17 23/32	18 5/16
MFR-337819-1	33 9/16	78 7/8	80 3/8	66 5/8	68 1/8	78 7/8	19 1/16	20 9/16	83 7/8	24 1/16	17 23/32	18 5/16
MFR-382619-1	38 7/8	26 3/8	27 1/16	14 1/8	15 5/16	26 3/8	19 1/16	20 9/16	31 3/16	24 1/16	17 23/32	18 5/16
MFR-384019-1	38 7/8	40 3/8	41 7/8	28 1/8	29 5/8	40 3/8	19 1/16	20 9/16	45 3/16	24 1/16	17 23/32	18 5/16
MFR-385219-1	38 7/8	52 5/8	54 1/8	40 3/8	41 7/8	52 5/8	19 1/16	20 9/16	57 5/16	24 1/16	17 23/32	18 5/16
MFR-386119-1	38 7/8	61 3/8	62 7/8	49 1/8	50 5/8	61 3/8	19 1/16	20 9/16	66 3/16	24 1/16	17 23/32	18 5/16
MFR-387019-1	38 7/8	70 1/8	71 5/8	57 7/8	59 3/8	70 1/8	19 1/16	20 9/16	75 1/16	24 1/16	17 23/32	18 5/16
MFR-387819-1	38 7/8	78 7/8	80 3/8	66 5/8	68 1/8	78 7/8	19 1/16	20 9/16	83 7/8	24 1/16	17 23/32	18 5/16

24" PANEL WIDTH

FRAME	D	H1	H2	H3	H4	H5	W1	W2	A	B	E	F
MFR-282624-1	28 5/16	26 3/8	27 1/16	14 1/8	15 5/16	26 3/8	24 1/16	25 9/16	31 3/16	29 1/16	22 23/32	23 5/16
MFR-284024-1	28 5/16	40 3/8	41 7/8	28 1/8	29 5/8	40 3/8	24 1/16	25 9/16	45 3/16	29 1/16	22 23/32	23 5/16
MFR-285224-1	28 5/16	52 5/8	54 1/8	40 3/8	41 7/8	52 5/8	24 1/16	25 9/16	57 3/16	29 1/16	22 23/32	23 5/16
MFR-286124-1	28 5/16	61 3/8	62 7/8	49 1/8	50 5/8	61 3/8	24 1/16	25 9/16	66 3/16	29 1/16	22 23/32	23 5/16
MFR-287024-1	28 5/16	70 1/8	71 5/8	57 7/8	59 3/8	70 1/8	24 1/16	25 9/16	75 1/16	29 1/16	22 23/32	23 5/16
MFR-287824-1	28 5/16	78 7/8	80 3/8	66 5/8	68 1/8	78 7/8	24 1/16	25 9/16	83 7/8	29 1/16	22 23/32	23 5/16
MFR-332624-1	33 9/16	26 3/8	27 1/16	14 1/8	15 5/16	26 3/8	24 1/16	25 9/16	31 3/16	29 1/16	22 23/32	23 5/16
MFR-334024-1	33 9/16	40 3/8	41 7/8	28 1/8	29 5/8	40 3/8	24 1/16	25 9/16	45 3/16	29 1/16	22 23/32	23 5/16
MFR-335224-1	33 9/16	52 5/8	54 1/8	40 3/8	41 7/8	52 5/8	24 1/16	25 9/16	57 5/16	29 1/16	22 23/32	23 5/16
MFR-336124-1	33 9/16	61 3/8	62 7/8	49 1/8	50 5/8	61 3/8	24 1/16	25 9/16	66 3/16	29 1/16	22 23/32	23 5/16
MFR-337024-1	33 9/16	70 1/8	71 5/8	57 7/8	59 3/8	70 1/8	24 1/16	25 9/16	75 1/16	29 1/16	22 23/32	23 5/16
MFR-337824-1	33 9/16	78 7/8	80 3/8	66 5/8	68 1/8	78 7/8	24 1/16	25 9/16	83 7/8	29 1/16	22 23/32	23 5/16
MFR-382624-1	38 7/8	26 3/8	27 1/16	14 1/8	15 5/16	26 3/8	24 1/16	25 9/16	31 3/16	29 1/16	22 23/32	23 5/16
MFR-384024-1	38 7/8	40 3/8	41 7/8	28 1/8	29 5/8	40 3/8	24 1/16	25 9/16	45 3/16	29 1/16	22 23/32	23 5/16
MFR-385224-1	38 7/8	52 5/8	54 1/8	40 3/8	41 7/8	52 5/8	24 1/16	25 9/16	57 5/16	29 1/16	22 23/32	23 5/16
MFR-386124-1	38 7/8	61 3/8	62 7/8	49 1/8	50 5/8	61 3/8	24 1/16	25 9/16	66 3/16	29 1/16	22 23/32	23 5/16
MFR-387024-1	38 7/8	70 1/8	71 5/8	57 7/8	59 3/8	70 1/8	24 1/16	25 9/16	75 1/16	29 1/16	22 23/32	23 5/16
MFR-387824-1	38 7/8	78 7/8	80 3/8	66 5/8	68 1/8	78 7/8	24 1/16	25 9/16	83 7/8	29 1/16	22 23/32	23 5/16

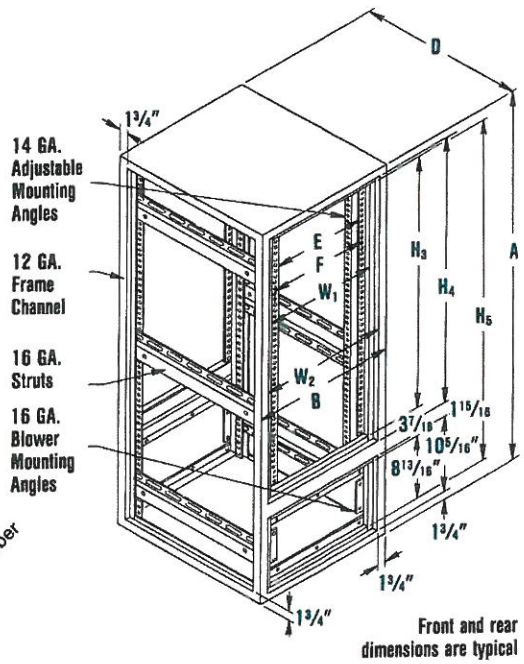
VERTICAL FRAMES CONTINUED

Vertical frames are available in six opening sizes, two panel widths and three frame depths for maximum flexibility.

REFER TO PAGE 18 FOR ORDERING GUIDE

- 2 PANEL WIDTHS: 19", 24"
- 3 DEPTHS: 28 5/16", 33 9/16", 38 7/8"
- 6 VERTICAL FRAME OPENING HEIGHTS:

14 1/8"	49 1/8"
28 1/8"	57 7/8"
40 3/8"	66 5/8"



Front and rear dimensions are typical

VERTICAL FRAME PART NUMBER

MFR - □ □ □ - 2

- □ Frame Depth
- □ Largest Nominal Vertical Opening (H3 Dimension)
- □ Nominal Panel Width 19" or 24"
- 2 Frame Option Number

-2 OPTION

With lower access area, two positions.

HOW TO DEVELOP YOUR PART NUMBER...

EXAMPLE:

MFR-336619-2

- 2 — Frame Option Number
- 19 — Panel Width 19"
- 66 — Largest Nominal Vertical Opening 66 1/2" (above access area)
- 19 — Overall Depth 33 9/16"

19" PANEL WIDTH

FRAME	D	H3	H4	H5	W1	W2	A	B	E	F
MFR-281419-2	28 5/16	14 1/8	15 5/8	26 3/8	19 1/16	20 9/16	31 3/8	24 1/16	17 23/32	18 5/16
MFR-282819-2	28 5/16	28 1/8	29 5/8	40 3/8	19 1/16	20 9/16	45 3/8	24 1/16	17 23/32	18 5/16
MFR-284019-2	28 5/16	40 3/8	41 7/8	52 5/8	19 1/16	20 9/16	57 5/8	24 1/16	17 23/32	18 5/16
MFR-284919-2	28 5/16	49 1/8	50 5/8	61 3/8	19 1/16	20 9/16	66 3/8	24 1/16	17 23/32	18 5/16
MFR-285719-2	28 5/16	57 7/8	59 3/8	70 1/8	19 1/16	20 9/16	75 1/8	24 1/16	17 23/32	18 5/16
MFR-286619-2	28 5/16	66 5/8	68 1/8	78 7/8	19 1/16	20 9/16	83 7/8	24 1/16	17 23/32	18 5/16
MFR-331419-2	33 9/16	14 1/8	15 5/8	26 3/8	19 1/16	20 9/16	31 3/8	24 1/16	17 23/32	18 5/16
MFR-332819-2	33 9/16	28 1/8	29 5/8	40 3/8	19 1/16	20 9/16	45 3/8	24 1/16	17 23/32	18 5/16
MFR-334019-2	33 9/16	40 3/8	41 7/8	52 5/8	19 1/16	20 9/16	57 5/8	24 1/16	17 23/32	18 5/16
MFR-334919-2	33 9/16	49 1/8	50 5/8	61 3/8	19 1/16	20 9/16	66 3/8	24 1/16	17 23/32	18 5/16
MFR-335719-2	33 9/16	57 7/8	59 3/8	70 1/8	19 1/16	20 9/16	75 1/8	24 1/16	17 23/32	18 5/16
MFR-336619-2	33 9/16	66 5/8	68 1/8	78 7/8	19 1/16	20 9/16	83 7/8	24 1/16	17 23/32	18 5/16
MFR-381419-2	38 7/8	14 1/8	15 5/8	26 3/8	19 1/16	20 9/16	31 3/8	24 1/16	17 23/32	18 5/16
MFR-382819-2	38 7/8	28 1/8	29 5/8	40 3/8	19 1/16	20 9/16	45 3/8	24 1/16	17 23/32	18 5/16
MFR-384019-2	38 7/8	40 3/8	41 7/8	52 5/8	19 1/16	20 9/16	57 5/8	24 1/16	17 23/32	18 5/16
MFR-384919-2	38 7/8	49 1/8	50 5/8	61 3/8	19 1/16	20 9/16	66 3/8	24 1/16	17 23/32	18 5/16
MFR-385719-2	38 7/8	57 7/8	59 3/8	70 1/8	19 1/16	20 9/16	75 1/8	24 1/16	17 23/32	18 5/16
MFR-386619-2	38 7/8	66 5/8	68 1/8	78 7/8	19 1/16	20 9/16	83 7/8	24 1/16	17 23/32	18 5/16

19" PANEL WIDTH

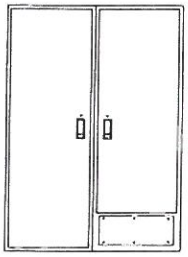
FRAME	D	H3	H4	H5	W1	W2	A	B	E	F
MFR-281424-2	28 5/16	14 1/8	15 5/8	26 3/8	24 1/16	25 9/16	31 3/8	29 1/16	22 23/32	23 5/16
MFR-282824-2	28 5/16	28 1/8	29 5/8	40 3/8	24 1/16	25 9/16	45 3/8	29 1/16	22 23/32	23 5/16
MFR-284024-2	28 5/16	40 3/8	41 7/8	52 5/8	24 1/16	25 9/16	57 5/8	29 1/16	22 23/32	23 5/16
MFR-284924-2	28 5/16	49 1/8	50 5/8	61 3/8	24 1/16	25 9/16	66 3/8	29 1/16	22 23/32	23 5/16
MFR-285724-2	28 5/16	57 7/8	59 3/8	70 1/8	24 1/16	25 9/16	75 1/8	29 1/16	22 23/32	23 5/16
MFR-286624-2	28 5/16	66 5/8	68 1/8	78 7/8	24 1/16	25 9/16	83 7/8	29 1/16	22 23/32	23 5/16
MFR-331424-2	33 9/16	14 1/8	15 5/8	26 3/8	24 1/16	25 9/16	31 3/8	29 1/16	22 23/32	23 5/16
MFR-332824-2	33 9/16	28 1/8	29 5/8	40 3/8	24 1/16	25 9/16	45 3/8	29 1/16	22 23/32	23 5/16
MFR-334024-2	33 9/16	40 3/8	41 7/8	52 5/8	24 1/16	25 9/16	57 5/8	29 1/16	22 23/32	23 5/16
MFR-334924-2	33 9/16	49 1/8	50 5/8	61 3/8	24 1/16	25 9/16	66 3/8	29 1/16	22 23/32	23 5/16
MFR-335724-2	33 9/16	57 7/8	59 3/8	70 1/8	24 1/16	25 9/16	75 1/8	29 1/16	22 23/32	23 5/16
MFR-336624-2	33 9/16	66 5/8	68 1/8	78 7/8	24 1/16	25 9/16	83 7/8	29 1/16	22 23/32	23 5/16
MFR-381424-2	38 7/8	14 1/8	15 5/8	26 3/8	24 1/16	25 9/16	31 3/8	29 1/16	22 23/32	23 5/16
MFR-382824-2	38 7/8	28 1/8	29 5/8	40 3/8	24 1/16	25 9/16	45 3/8	29 1/16	22 23/32	23 5/16
MFR-384024-2	38 7/8	40 3/8	41 7/8	52 5/8	24 1/16	25 9/16	57 5/8	29 1/16	22 23/32	23 5/16
MFR-384924-2	38 7/8	49 1/8	50 5/8	61 3/8	24 1/16	25 9/16	66 3/8	29 1/16	22 23/32	23 5/16
MFR-385724-2	38 7/8	57 7/8	59 3/8	70 1/8	24 1/16	25 9/16	75 1/8	29 1/16	22 23/32	23 5/16
MFR-386624-2	38 7/8	66 5/8	68 1/8	78 7/8	24 1/16	25 9/16	83 7/8	29 1/16	22 23/32	23 5/16

DOORS - NON FILTERED

The door is actually the most difficult component on which to provide a consistent shield. Emcor has developed a state-of-the-art, patented, two-part door system. The design consists of an inner panel to provide the actual shielding which is fully plated per QQ-N-290A electrolytic nickel. The gasket contact areas are then masked prior to painting to assure proper electrical conductivity when contacting the beryllium copper spring finger gasketing which is applied to the frame channel. This design method allows the inner door panel to be free of handle and latch mountings that violate the normal door panel and lead to EMI leakage.

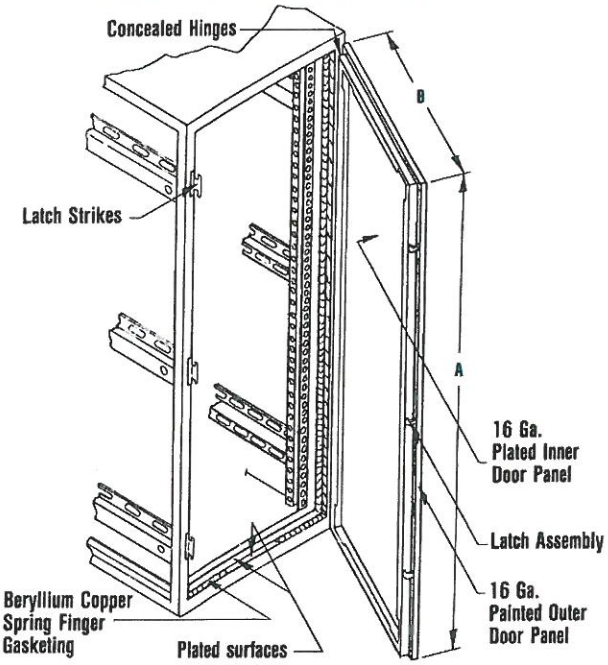
All Emission Control Plus doors overlap the frame opening by 7/8" both top and bottom with a 1 9/16" clearance between the inner door panel and the panel mounting angles. The clearance between the bottom edge of the door and the bottom of the frame is 7/8".

All doors are provided with locks, keyed alike and lift off hinges in the open position for easy accessibility. When full length and short doors are mounted side by side as shown in the sketch, the handles will align.



REFER TO PAGE 18 FOR ORDERING GUIDE

DOOR PATENTS DES. NO. 300,097 NO. 4,913,476



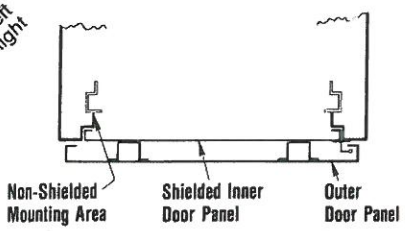
These doors mount only to the full length opening (H¹) of the -1 frame ie; MFR-285219-1

DOOR PART NUMBER MDS - □ □ - □

Nominal Vertical Opening to be Covered H¹ Dimension from Page 6 & 7

Nominal Panel Width 19" or 24"

Indicate LH for Left Hinge, RH for Right Hinge



LEFT HINGE 19" PANEL WIDTH	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2619-LH	29 5/8	22 9/16	MDS-6119-LH	64 5/8	22 9/16	MDS-2619-RH	29 5/8	22 9/16	MDS-6119-RH	64 5/8	22 9/16
MDS-4019-LH	43 5/8	22 9/16	MDS-7019-LH	73 3/8	22 9/16	MDS-4019-RH	43 5/8	22 9/16	MDS-7019-RH	73 3/8	22 9/16
MDS-5219-LH	55 7/8	22 9/16	MDS-7819-LH	82 1/8	22 9/16	MDS-5219-RH	55 7/8	22 9/16	MDS-7819-RH	82 1/8	22 9/16

LEFT HINGE 24" PANEL WIDTH	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2624-LH	29 5/8	27 9/16	MDS-6124-LH	64 5/8	27 9/16	MDS-2624-RH	29 5/8	27 9/16	MDS-6124-RH	64 5/8	27 9/16
MDS-4024-LH	43 5/8	27 9/16	MDS-7024-LH	73 3/8	27 9/16	MDS-4024-RH	43 5/8	27 9/16	MDS-7024-RH	73 3/8	27 9/16
MDS-5224-LH	55 7/8	27 9/16	MDS-7824-LH	82 1/8	27 9/16	MDS-5224-RH	55 7/8	27 9/16	MDS-7824-RH	82 1/8	27 9/16

These doors mount only to the vertical opening above the lower access area (H³) of the -1 and -2 frames

DOOR PART NUMBER MDS - □ □ - □ - S

Nominal Vertical Opening to be Covered H³ Dimension from Page 6, 7 & 8

Nominal Panel Width 19" or 24"

Indicate LH for Left Hinge, RH for Right Hinge

Indicate (S) for Short Door Above Lower Access Area

LEFT HINGE 19" PANEL WIDTH	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2819-LH-S	31 3/8	22 9/16	MDS-5719-LH-S	61 1/8	22 9/16	MDS-2819-RH-S	31 3/8	22 9/16	MDS-5719-RH-S	61 1/8	22 9/16
MDS-4019-LH-S	43 5/8	22 9/16	MDS-6619-LH-S	69 7/8	22 9/16	MDS-4019-RH-S	43 5/8	22 9/16	MDS-6619-RH-S	69 7/8	22 9/16
MDS-4919-LH-S	52 3/8	22 9/16				MDS-4919-RH-S	52 3/8	22 9/16			

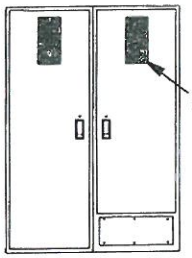
LEFT HINGE 24" PANEL WIDTH	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2824-LH-S	31 3/8	27 9/16	MDS-5724-LH-S	61 1/8	27 9/16	MDS-2824-RH-S	31 3/8	27 9/16	MDS-5724-RH-S	61 1/8	27 9/16
MDS-4024-LH-S	43 5/8	27 9/16	MDS-6624-LH-S	69 7/8	27 9/16	MDS-4024-RH-S	43 5/8	27 9/16	MDS-6624-RH-S	69 7/8	27 9/16
MDS-4924-LH-S	52 3/8	27 9/16				MDS-4924-RH-S	52 3/8	27 9/16			

DOORS - FILTERED

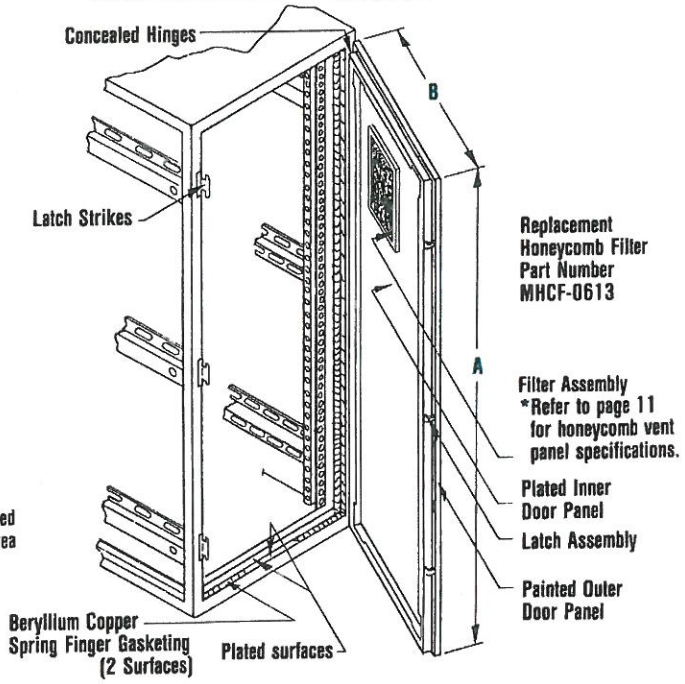
The door is actually the most difficult component on which to provide a consistent shield. Emcor has developed a state-of-the-art, patented, two-part door system. The design consists of an inner panel to provide the actual shielding which is fully plated per QQ-N-290A electrolytic nickel. The gasket contact areas are then masked prior to painting to assure proper electrical conductivity when contacting the beryllium copper spring finger gasketing which is applied to the frame channel. This design method allows the inner door panel to be free of handle and latch mountings that violate the normal door panel and lead to EMI leakage.

All Emission Control Plus doors overlap the frame opening by 7/8" both top and bottom with a 1 9/16" clearance between the inner door panel and the panel mounting angles. The clearance between the bottom edge of the door and the bottom of the frame is 7/8".

All filtered doors are supplied with a honeycomb vent panel which provides a 52 square inch opening of EMI shielding effectiveness combined with low air resistance. Also provided are locks, keyed alike, lift off hinges from the open position and door handles that always align evenly.



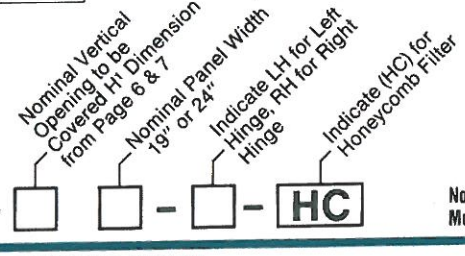
DOOR PATENTS DES. NO. 300,097 NO. 4,913,476

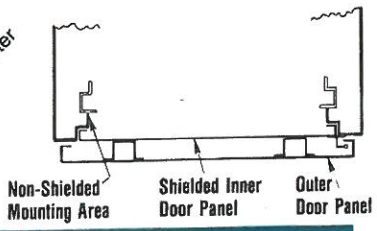


REFER TO PAGE 18 FOR ORDERING GUIDE

These doors mount only to the full length opening (H¹) of the -1 frame ie; MFR-285219-1

DOOR PART NUMBER MDS - ☐ ☐ - ☐ - HC





19" PANEL WIDTH

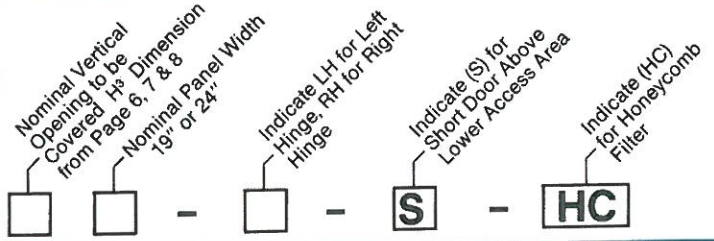
LEFT HINGE	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2619-LH-HC	29 5/8	22 9/16	MDS-6119-LH-HC	64 5/8	22 9/16	MDS-2619-RH-HC	29 5/8	22 9/16	MDS-6119-RH-HC	64 5/8	22 9/16
MDS-4019-LH-HC	43 5/8	22 9/16	MDS-7019-LH-HC	73 3/8	22 9/16	MDS-4019-RH-HC	43 5/8	22 9/16	MDS-7019-RH-HC	73 3/8	22 9/16
MDS-5219-LH-HC	55 7/8	22 9/16	MDS-7819-LH-HC	82 1/8	22 9/16	MDS-5219-RH-HC	55 7/8	22 9/16	MDS-7819-RH-HC	82 1/8	22 9/16

24" PANEL WIDTH

LEFT HINGE	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2624-LH-HC	29 5/8	27 9/16	MDS-6124-LH-HC	64 5/8	27 9/16	MDS-2624-RH-HC	29 5/8	27 9/16	MDS-6124-RH-HC	64 5/8	27 9/16
MDS-4024-LH-HC	43 5/8	27 9/16	MDS-7024-LH-HC	73 3/8	27 9/16	MDS-4024-RH-HC	43 5/8	27 9/16	MDS-7024-RH-HC	73 3/8	27 9/16
MDS-5224-LH-HC	55 7/8	27 9/16	MDS-7824-LH-HC	82 1/8	27 9/16	MDS-5224-RH-HC	55 7/8	27 9/16	MDS-7824-RH-HC	82 1/8	27 9/16

These doors mount only to the vertical opening above the lower access area (H³) of the -1 and -2 frames

DOOR PART NUMBER MDS - ☐ ☐ - ☐ - S - HC



19" PANEL WIDTH

LEFT HINGE	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2819-LH-S-HC	31 3/8	22 9/16	MDS-5719-LH-S-HC	61 1/8	22 9/16	MDS-2819-RH-S-HC	31 3/8	22 9/16	MDS-5719-RH-S-HC	61 1/8	22 9/16
MDS-4019-LH-S-HC	43 5/8	22 9/16	MDS-6619-LH-S-HC	69 7/8	22 9/16	MDS-4019-RH-S-HC	43 5/8	22 9/16	MDS-6619-RH-S-HC	69 7/8	22 9/16
MDS-4919-LH-S-HC	52 3/8	22 9/16				MDS-4919-RH-S-HC	52 3/8	22 9/16			

24" PANEL WIDTH

LEFT HINGE	A	B		A	B		A	B	RIGHT HINGE	A	B
MDS-2824-LH-S-HC	31 3/8	27 9/16	MDS-5724-LH-S-HC	61 1/8	27 9/16	MDS-2824-RH-S-HC	31 3/8	27 9/16	MDS-5724-RH-S-HC	61 1/8	27 9/16
MDS-4024-LH-S-HC	43 5/8	27 9/16	MDS-6624-LH-S-HC	69 7/8	27 9/16	MDS-4024-RH-S-HC	43 5/8	27 9/16	MDS-6624-RH-S-HC	69 7/8	27 9/16
MDS-4924-LH-S-HC	52 3/8	27 9/16				MDS-4924-RH-S-HC	52 3/8	27 9/16			

SHIELDED CLOSURE PANELS

Shielded closure panels are constructed of 16 ga. steel and fully plated per QQ-N-290A electrolytic nickel. The gasket contact areas are then masked prior to painting to assure proper electrical conductivity when contacting the beryllium copper spring finger gasketing which is applied to the frame channel. This type of panel overlaps the opening in the outer recess area of the frame channel as shown on Page 6, reference H_2, H_4 and W_2 dimensions.

NOTE: Gasketing for shielded closure panels is supplied as part of the Emission Control Plus frame.

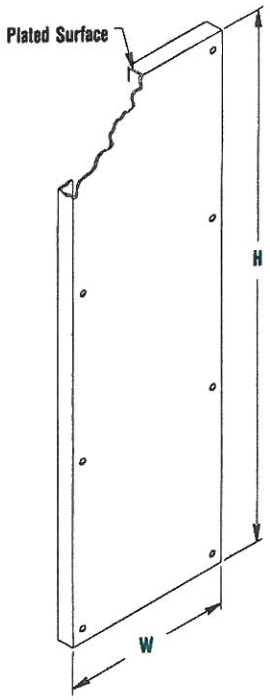
Example: The shielded closure panel required for the MFR-285219-1 frame is an MPN-5219 (H_1 or H_3 & W_1) which is oversized and actually fits within the shielding flange recess of the frame H_2 & W_2.

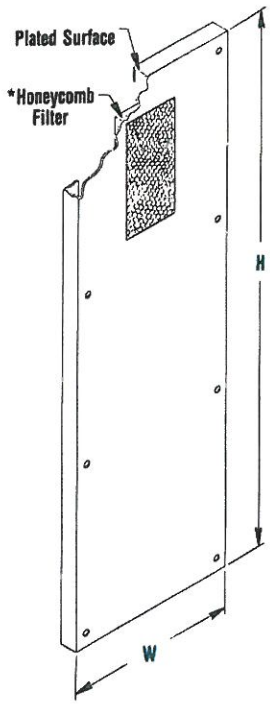
All filtered panels are supplied with a honeycomb vent panel which provides a 78 square inch opening of EMI shielding effectiveness combined with low air resistance.

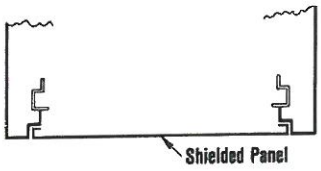
*** The honeycomb vent panel supplied in the filter area of both doors and closure panels is a honeycomb core aluminum alloy 5052 Grade B per MIL-C-7438 with a frame of aluminum alloy 6063-T1 per QQ-A-200/9. To interface, a wire mesh gasket Sn/Cu/Fe (tin coated, copper-clad steel) wire per ASTMB-520 is provided. The standard finish is an electroless nickel per MIL-C-26074A.**

** This panel is designed for use in the frame lower access areas. In addition to the normal plating and masking described above, the entire back side of the panel has been masked for flexibility required in future connector mounting applications.

REFER TO PAGE 18 FOR ORDERING GUIDE







Replacement Honeycomb Filter Part Number MHCF-0613

SHIELDED CLOSURE PANEL PART NUMBERS

PLAIN

MPN – □ □

(□ = Nominal Vertical Panel Opening H_1 or H_3 Dimension from Page 6, 7 & 8; □ = Indicate 19 for 19" Panel Width Frame, 24 for 24" Panel Width Frame.)

FILTERED

MPN – □ □ – HC

(□ = Nominal Vertical Panel Opening H_1 or H_3 Dimension from Page 6, 7 & 8; □ = Indicate 19 for 19" Panel Width Frame, 24 for 24" Panel Width Frame.; HC = Indicate (HC) for Honeycomb Filter)

19" PANEL WIDTH FRAMES

	H	W		H	W
** MPN-0819	10 3/32	20 11/32	MPN-5219	53 29/32	20 11/32
MPN-1419	15 13/32	20 11/32	MPN-5719	59 5/32	20 11/32
MPN-2619	27 21/32	20 11/32	MPN-6119	62 21/32	20 11/32
MPN-2819	29 13/32	20 11/32	MPN-6619	67 29/32	20 11/32
MPN-4019	41 21/32	20 11/32	MPN-7019	71 13/32	20 11/32
MPN-4919	50 13/32	20 11/32	MPN-7819	80 5/32	20 11/32

24" PANEL WIDTH FRAMES

	H	W		H	W
** MPN-0824	10 3/32	25 11/32	MPN-5224	53 29/32	25 11/32
MPN-1424	15 13/32	25 11/32	MPN-5724	59 5/32	25 11/32
MPN-2624	27 21/32	25 11/32	MPN-6124	62 21/32	25 11/32
MPN-2824	29 13/32	25 11/32	MPN-6624	67 29/32	25 11/32
MPN-4024	41 21/32	25 11/32	MPN-7024	71 13/32	25 11/32
MPN-4924	50 13/32	25 11/32	MPN-7824	80 5/32	25 11/32

19" PANEL WIDTH FRAMES

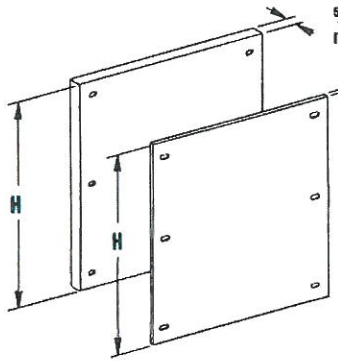
	H	W		H	W
MPN-0819-HC	10 3/32	20 11/32	MPN-5219-HC	53 29/32	20 11/32
MPN-1419-HC	15 13/32	20 11/32	MPN-5719-HC	59 5/32	20 11/32
MPN-2619-HC	27 21/32	20 11/32	MPN-6119-HC	62 21/32	20 11/32
MPN-2819-HC	29 13/32	20 11/32	MPN-6619-HC	67 29/32	20 11/32
MPN-4019-HC	41 21/32	20 11/32	MPN-7019-HC	71 13/32	20 11/32
MPN-4919-HC	50 13/32	20 11/32	MPN-7819-HC	80 5/32	20 11/32

24" PANEL WIDTH FRAMES

	H	W		H	W
MPN-0824-HC	10 3/32	25 11/32	MPN-5224-HC	53 29/32	25 11/32
MPN-1424-HC	15 13/32	25 11/32	MPN-5724-HC	59 5/32	25 11/32
MPN-2624-HC	27 21/32	25 11/32	MPN-6124-HC	62 21/32	25 11/32
MPN-2824-HC	29 13/32	25 11/32	MPN-6624-HC	67 29/32	25 11/32
MPN-4024-HC	41 21/32	25 11/32	MPN-7024-HC	71 13/32	25 11/32
MPN-4924-HC	50 13/32	25 11/32	MPN-7824-HC	80 5/32	25 11/32

NON-SHIELDED CLOSURE PANELS

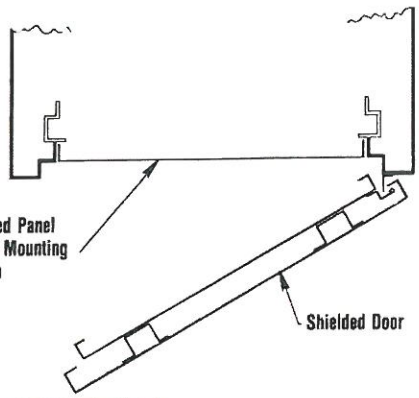
Non-shielded closure panels are constructed of either 5/8" formed 16 ga. cold rolled steel or 6061-T6 flat aluminum. These panels are only to be used behind a shielded door and mounts directly to the adjustable panel mounting angles of the frame in the inner recess area.



5/8" Formed Steel—Allows A Maximum 7/8" Equipment Clearance Behind Door in Closed Position.

1/8" Thick Aluminum—Allows a Maximum 1 3/8" Equipment Clearance Behind Door in Closed Position

NOMINAL E.I.A. PANEL HEIGHTS				
H	H	H	H	H
01 = 1 3/4	07 = 7	12 = 12 1/4	17 = 17 1/2	22 = 22 3/4
03 = 3 1/2	08 = 8 3/4	14 = 14	19 = 19 1/4	24 = 24 1/2
05 = 5 1/4	10 = 10 1/2	15 = 15 3/4	21 = 21	



NON-SHIELDED CLOSURE PANEL PART NUMBER XPN - ☐ ☐ - ☐☐

Nominal Vertical Panel Size

Indicate 19 for 19" Panel Width Frame, 24 for 24" Panel Width Frame.

Indicate "A" Only if Aluminum Panel is Required.

5/8" FORMED STEEL PANELS			
19" WIDTH		24" WIDTH	
XPN-0119	XPN-1419	XPN-0124	XPN-1424
XPN-0319	XPN-1519	XPN-0324	XPN-1524
XPN-0519	XPN-1719	XPN-0524	XPN-1724
XPN-0719	XPN-1919	XPN-0724	XPN-1924
XPN-0819	XPN-2119	XPN-0824	XPN-2124
XPN-1019	XPN-2219	XPN-1024	XPN-2224
XPN-1219	XPN-2419	XPN-1224	XPN-2424

1/8" FLAT ALUMINUM PANELS			
19" WIDTH		24" WIDTH	
XPN-0119-A	XPN-1419-A	XPN-0124-A	XPN-1424-A
XPN-0319-A	XPN-1519-A	XPN-0324-A	XPN-1524-A
XPN-0519-A	XPN-1719-A	XPN-0524-A	XPN-1724-A
XPN-0719-A	XPN-1919-A	XPN-0724-A	XPN-1924-A
XPN-0819-A	XPN-2119-A	XPN-0824-A	XPN-2124-A
XPN-1019-A	XPN-2219-A	XPN-1024-A	XPN-2224-A
XPN-1219-A	XPN-2419-A	XPN-1224-A	XPN-2424-A

SIDE PANELS

REFER TO PAGE 18 FOR ORDERING GUIDE

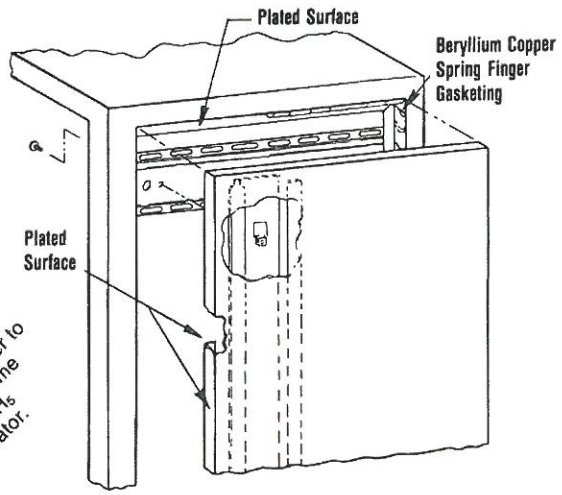
All Emission Control Plus side panels are inside removable and flush mounted within the frame side channels.

These side panels are constructed of 16 Ga. steel, fully plated per QQ-N-290A electrolytic nickel and masked prior to painting to assure proper electrical conductivity. When contacting the beryllium copper spring finger gasketing, which is applied to the frame channel, the side panel offers the necessary control of emissions.

NOTE: The vertical height designator for the -1 option frame coincides with that of the Side Panel Part Number. The -2 option vertical height indicator differs. Refer to the Ordering Guide on pages 18 & 19 for verification of the correct part number.

EXAMPLE: MFR-287019-1 uses side panel MSPI-2870
MFR-285719-2 also uses side panel MSPI-2870

Both frames are the same overall height but with different vertical openings due to the lower access area.



SIDE PANEL PART NUMBER MSPI - ☐☐ ☐

Frame Depth 28, 33 or 38

Vertical Height Indicator, Refer to Vertical Frame Drawing Hs Designator.

FOR USE WITH 28 5/16" DEEP FRAMES	
MSPI-2826	MSPI-2861
MSPI-2840	MSPI-2870
MSPI-2852	MSPI-2878

FOR USE WITH 33 9/16" DEEP FRAMES	
MSPI-3326	MSPI-3361
MSPI-3340	MSPI-3370
MSPI-3352	MSPI-3378

FOR USE WITH 38 7/8" DEEP FRAMES	
MSPI-3826	MSPI-3861
MSPI-3840	MSPI-3870
MSPI-3852	MSPI-3878

FRAME JOINERS

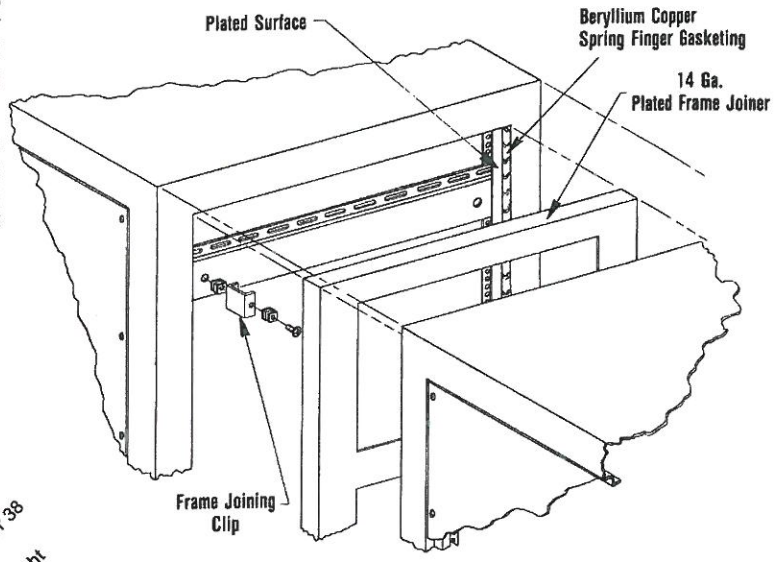
When joining two or more Emission Control Plus frames side by side, it is necessary to order and install a frame joiner between all frames to control emissions.

The frame joiner is inserted between the fully plated frames to provide shielding. The joiner itself is fully plated per QQ-N-290A electrolytic nickel and assures proper electrical conductivity when in contact with the beryllium copper spring finger gasketing applied to each frame.

NOTE: The vertical height designator for the –1 option frame coincides with that of the frame joiner part number. The –2 option vertical height indicator differs. Refer to the Ordering Guide on pages 18 & 19 for verification of the correct part number.

EXAMPLE:
MFR-337819-1 uses frame joiner MFJ-3378
MFR-336619-2 also uses frame joiner MFJ-3378

Both frames are the same overall height but with different vertical openings due to the lower access area.



REFER TO PAGE 18 FOR ORDERING GUIDE

FRAME JOINER PART NUMBER MFJ – ☐ ☐

Frame Depth 28, 33 or 38

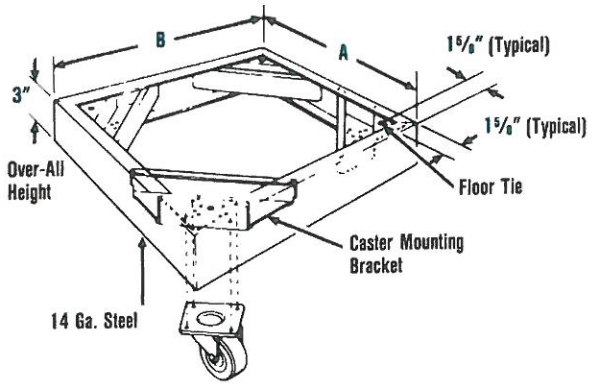
Vertical Height Indicator Refer to Vertical Frame Drawing H_6 Designator.

FOR USE WITH 28 5/16" DEEP FRAMES		FOR USE WITH 33 9/16" DEEP FRAMES		FOR USE WITH 38 7/8" DEEP FRAMES	
MFJ-2826	MFJ-2861	MFJ-3326	MFJ-3361	MFJ-3826	MFJ-3861
MFJ-2840	MFJ-2870	MFJ-3340	MFJ-3370	MFJ-3840	MFJ-3870
MFJ-2852	MFJ-2878	MFJ-3352	MFJ-3378	MFJ-3852	MFJ-3878

ACCESSORIES

PONTOON BASE

This optional base is required when using casters. The HW-451 or HW-451-LK caster when mounted to the pontoon base increases the overall frame height by 6 33/64".



PART NUMBER MPB – ☐ ☐

Frame Depth 28, 33 or 38

Nominal Panel Width 19" or 24"

PART 19"	A	B	PART 24"	A	B
MPB-2819	27 13/16	24 1/16	MPB-2824	27 13/16	29 1/16
MPB-3319	33 1/16	24 1/16	MPB-3324	33 1/16	29 1/16
MPB-3819	38 3/8	24 1/16	MPB-3824	38 3/8	29 1/16

ACCESSORIES CONTINUED

The following Emcor accessory items are available in four standard depths to allow the flexibility of full or short depth mounting into the frame. Short depth mounting provides vertical clearance at the rear of the frame for items such as cabling, bus bars and plug-in-strips.

NOTE: Short depth mounting requires ordering an extra pair of mounting straps.

-20 indicates short depth mounting for use in all frames.

-26 indicates standard depth mounting for use in 28 5/16" depth frames or short depth mounting in 33 9/16" and 38 7/8" depth frames.

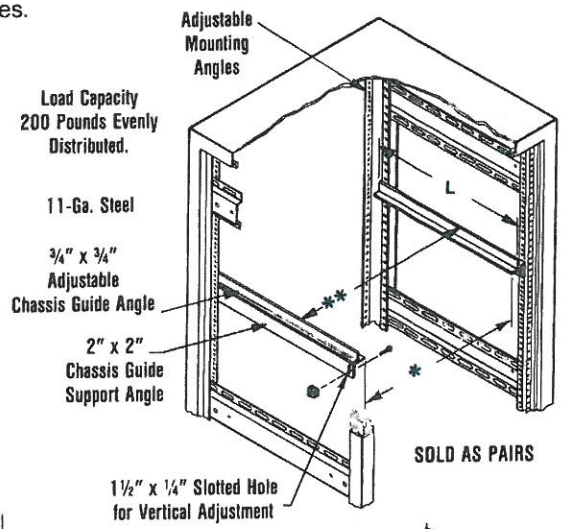
-31 indicates standard depth mounting for use in 33 9/16" depth frames or short depth mounting in 38 7/8" depth frames.

-36 indicates standard depth mounting for use in 38 7/8" depth frames.

CHASSIS GUIDE ASSEMBLY

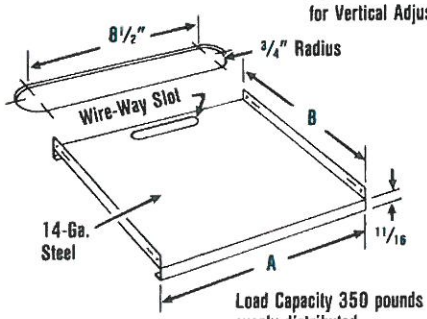
PART NUMBER XCG - ☐ (Mounting Depth Code 20, 26, 31 or 36)

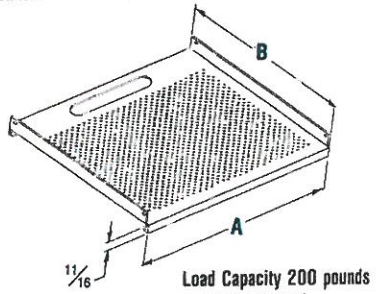
PART	L	*19" WIDE	*24" WIDE	**19" WIDE	**24" WIDE
XCG-20	16 11/16	14 1/64	19 1/64	16 9/16	21 9/16
XCG-26	21 11/16	14 1/64	19 1/64	16 9/16	21 9/16
XCG-31	26 15/16	14 1/64	19 1/64	16 9/16	21 9/16
XCG-36	32 1/4	14 1/64	19 1/64	16 9/16	21 9/16



FIXED EQUIPMENT SHELVES

PART NUMBER XES - ☐ ☐ - ☐ (Mounting Depth Code 20, 26, 31 or 36; Nominal Panel Width 19" or 24"; Indicate (PA) Only When Perforated Shelves are Required)





PART	19" WIDE	A	B	PART	24" WIDE	A	B
XES-2019		17 63/64	18 7/8	XES-2024		22 63/64	18 7/8
XES-2019-PA		17 63/64	18 7/8	XES-2024-PA		22 63/64	18 7/8
XES-2619		17 63/64	23 7/8	XES-2624		22 63/64	23 7/8
XES-2619-PA		17 63/64	23 7/8	XES-2624-PA		22 63/64	23 7/8
XES-3119		17 63/64	29 1/8	XES-3124		22 63/64	29 1/8
XES-3119-PA		17 63/64	29 1/8	XES-3124-PA		22 63/64	29 1/8
XES-3619		17 63/64	34 7/16	XES-3624		22 63/64	34 7/16
XES-3619-PA		17 63/64	34 7/16	XES-3624-PA		22 63/64	34 7/16

SOLID STYLE

14-gauge steel equipment shelves are designed to fit anywhere in the vertical panel openings of all Miliary/Tempest style enclosure frames. A 1 1/2" (38.1) x 8 1/2" (215.9) slot is provided at the rear for passage of wires, cables, etc.

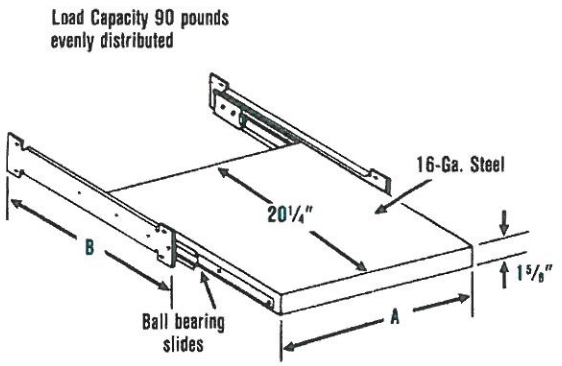
PERFORATED SHELVES

Perforated shelves offer improved air flow for additional equipment cooling. Manufactured of 14-gauge steel with a perforated center, this rugged shelf is designed to fit anywhere in the vertical panel openings. The perforation provides a 46% open area with .156 dia. holes on .281 staggered center lines. A 1 1/2" x 8 1/2" slot is provided at the rear for passage of wires, cables, etc., and a complete hardware kit with all required fastening devices is furnished with each assembly.

CRADLE SLIDE ASSEMBLY

PART NUMBER XCS - ☐ ☐ (Mounting Depth Code 20, 26, 31 or 36; Nominal Panel Width 19" or 24")

PART	19" WIDE	A	B	PART	24" WIDE	A	B
XCS-2019		16 1/2	18 7/8	XCS-2024		21 1/2	18 7/8
XCS-2619		16 1/2	23 7/8	XCS-2624		21 1/2	23 7/8
XCS-3119		16 1/2	29 1/8	XCS-3124		21 1/2	29 1/8
XCS-3619		16 1/2	34 7/16	XCS-3624		21 1/2	34 7/16



ACCESSORIES CONTINUED

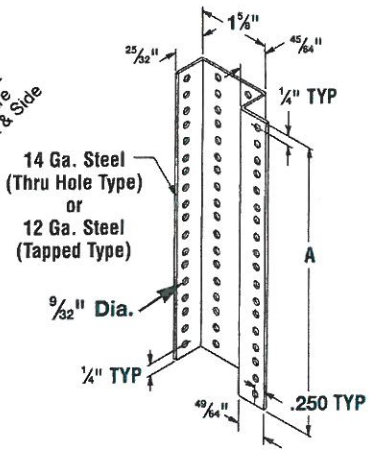
MOUNTING ANGLES – FOR USE IN FULL HEIGHT OPENING

Emcor mounting angles are sold as pairs in standard EIA hole pattern with both 9/32" thru hole style or 10-32 tapped. All mounting angles are plated in yellow zinc per ASTM-B633.

PART NUMBER XMA – ☐ – ☐ ☐

(Nominal Vertical Height H5 Dimension from Pages 6 & 7 | Indicate "T" if 10-32 Tapped Angles Are Required Front Flange Only | Indicate "2" if 10-32 Tapped Angles Are Required Front & Side Flanges)

STD 9/32" THRU HOLES	A	STD 9/32" THRU HOLES	A	10-32 TAPPED HOLES Front Flange Only	A	10-32 TAPPED HOLES Front Flange Only	A	10-32 TAPPED HOLES Front & Side Flange	A	10-32 TAPPED HOLES Front & Side Flange	A
XMA-26	26¼	XMA-61	61¼	XMA-26-T	26¼	XMA-61-T	61¼	XMA-26-T2	26¼	XMA-61-T2	61¼
XMA-40	40¼	XMA-70	70	XMA-40-T	40¼	XMA-70-T	70	XMA-40-T2	40¼	XMA-70-T2	70
XMA-52	52½	XMA-78	78¾	XMA-52-T	52½	XMA-78-T	78¾	XMA-52-T2	52½	XMA-78-T2	78¾



MOUNTING ANGLES

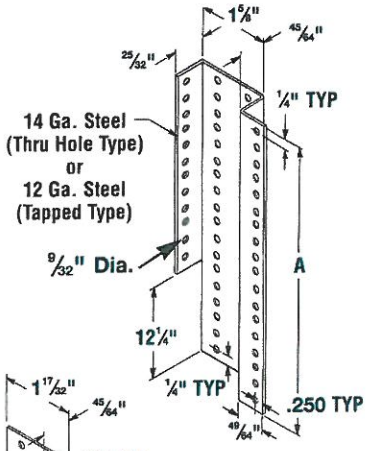
FOR USE IN SHORT HEIGHT OPENING ABOVE LOWER ACCESS AREA

Emcor mounting angles are sold as pairs in standard EIA hole pattern with both 9/32" thru hole style or 10-32 tapped. All mounting angles are plated in yellow zinc per ASTM-B633.

PART NUMBER MMA – ☐ – ☐ ☐

(Nominal Vertical Height H5 Dimension from Pages 6, 7 & 8 | Indicate "T" if 10-32 Tapped Angles Are Required Front Flange Only | Indicate "2" if 10-32 Tapped Angles Are Required Front & Side Flanges)

STD 9/32" THRU HOLES	A	STD 9/32" THRU HOLES	A	10-32 TAPPED HOLES Front Flange Only	A	10-32 TAPPED HOLES Front Flange Only	A	10-32 TAPPED HOLES Front & Side Flange	A	10-32 TAPPED HOLES Front & Side Flange	A
MMA-14	26¼	MMA-49	61¼	MMA-14-T1	26¼	MMA-49-T1	61¼	MMA-14-T2	26¼	MMA-49-T2	61¼
MMA-28	40¼	MMA-57	70	MMA-28-T1	40¼	MMA-57-T1	70	MMA-28-T2	40¼	MMA-57-T2	70
MMA-40	52½	MMA-66	78¾	MMA-40-T1	52½	MMA-66-T1	78¾	MMA-40-T2	52½	MMA-66-T2	78¾



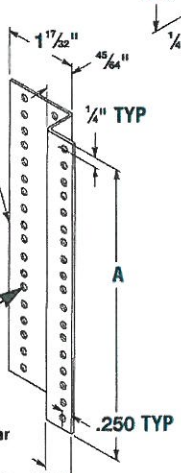
MOUNTING STRAPS— FOR INTERMEDIATE MOUNTING IN ALL FRAMES

Emcor mounting straps are sold as pairs with 9/32" thru holes on standard EIA hole pattern. Mounting straps are plated in yellow zinc per ASTM-B633.

PART NUMBER XMS – ☐

(Nominal Vertical Height H5 Dimension from Pages 6, 7 & 8)

	A		A		A
XMS-26	26¼	XMS-52	52½	XMS-70	70
XMS-40	40¼	XMS-61	61¼	XMS-78	78¾



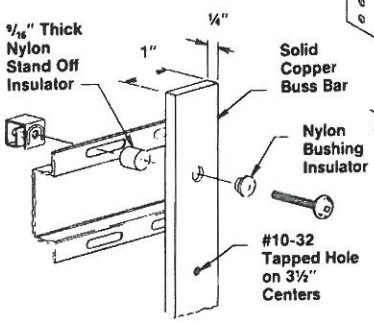
BUS BARS

Emcor offers insulated copper bus bars which attach to the frame struts and are supplied with #10-32 tapped holes on 3½" centers.

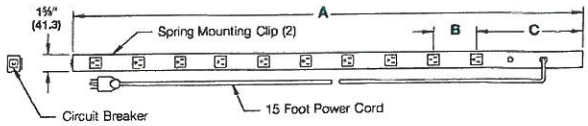
PART NUMBER XBB – ☐

(Nominal Vertical Height H5 Dimension from Pages 6, 7 & 8)

OVERALL HEIGHT		OVERALL HEIGHT	
XBB-26	26¼"	XBB-61	61¼"
XBB-40	40¼"	XBB-70	70"
XBB-52	52½"	XBB-78	78¾"



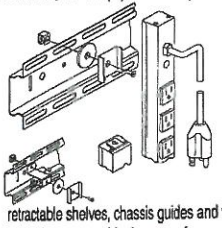
Important: Bus Bars attach at two points only—the top and bottom struts. This means only a full height bus bar can be mounted. Example: XBB-70 Bus Bar will only fit in an MFR Frame with an H5 dimension of 70⅛" as found on Pages 7 and 8 of this catalog.



POWER STRIPS

EMCOR Power Strips are available in either 18" (457.2) 6 outlet or 48" (1219.2) 10 outlet lengths with 15 or 20 amp circuit breakers. Direct wire, 15 amp power strips are also available in both sizes.

PART NUMBER	NUMBER OUTLETS	WIRE GA.	CIRCUIT BREAKER	ELECTRICAL INPUT	PLUG TYPE	A	B	C
With Power Cord								
WM-180615-PC	6	14/3 SJT	15 AMP	15' (4572) Power Cord	NEMA 5-15p Molded	18" (457.2)	1¾" (44.5)	4½" (114.3)
WM-180620-PC	6	12/3 SJT	20 AMP	15' (4572) Power Cord	Twist Lock	18" (457.2)	1¾" (44.5)	4½" (114.3)
WM-481015-PC	10	14/3 SJT	15 AMP	15' (4572) Power Cord	NEMA 5-15p Molded	48" (1219.2)	4" (101.6)	10" (254)
WM-481020-PC	10	12/3 SJT	20 AMP	15' (4572) Power Cord	Twist Lock	48" (1219.2)	4" (101.6)	10" (254)
Without Power Cord/Direct Wire								
WM-180615-DW	6	14/3 SJT	15 AMP	12" Wire Leads	—	18" (457.2)	1¾" (44.5)	4½" (114.3)
WM-481015-DW	10	14/3 SJT	15 AMP	12" Wire Leads	—	48" (1219.2)	4" (101.6)	10" (254)



STAND-OFF BRACKET MOUNTING

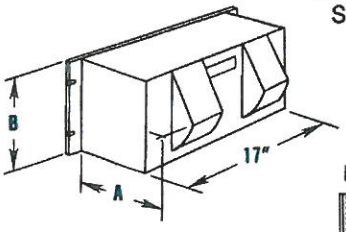
A pair of stand-off brackets are supplied with each power strip for those applications where front to rear mounting hardware is being used for items such as drawers, cradle slide assemblies, retractable shelves, chassis guides and writing tops. When equipment shelves are being mounted in the same frame as a power strip, short depth shelves must be ordered along with an additional pair of panel mounting angles to facilitate proper mounting.

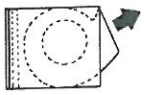
PACKAGED BLOWER AND SHIELDING PANEL

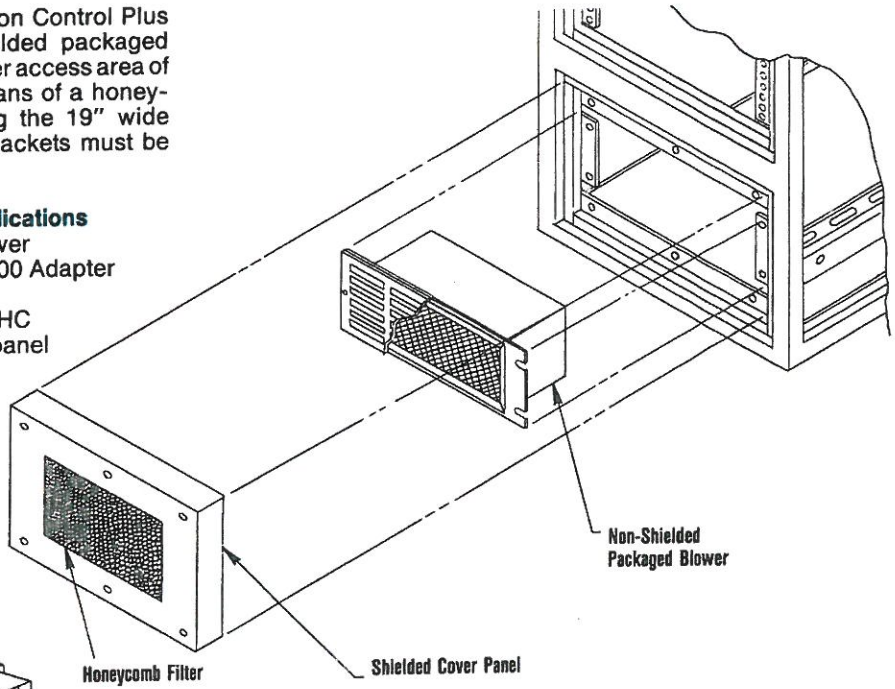
To provide air movement, the Emcor Emission Control Plus frame system utilizes a standard non-shielded packaged blower mounted in the inner recess of the lower access area of the frame. Shielding is then obtained by means of a honeycomb filtered cover panel. When mounting the 19" wide blower unit in a 24" wide frame, adapter brackets must be ordered separately as indicated below:

19" wide applications
1 ea. BL-350 Blower
1 ea. MPN-0819-HC
Shielded filter panel

24" wide applications
1 ea. BL-350 Blower
1 pr. MABA-000000 Adapter Brackets
1 ea. MPN-0824-HC
Shielded filter panel

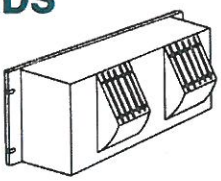






EXHAUST GUARDS

Optional zinc-lustre-plated exhaust guards are available, add EG to blower number.
Example: BL-350 EG.

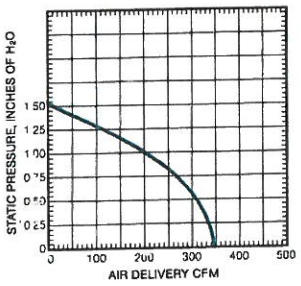


MODEL #	PERFORMANCE DATA					*NC	DIMENSIONAL DATA		MODEL # WITH EXHAUST GUARDS
			AMPS		WATTS		A	B	
BL-350	CFM	RPM	RUN	L.R.					BL-350EG
	350	3100	1.8	4.0	200	65	$10^{7}/_{32}$"	7"	

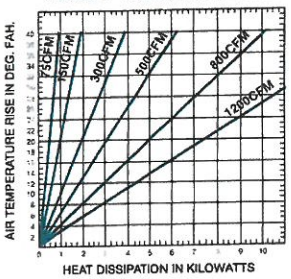
FILTER: Permanent washable type which can be serviced without removing the blower from the rack.

MOTOR: Shaded-pole, rust resistant shaft, double shielded ball bearings, permanently lubricated with a -20 degree fahrenheit to 250 degrees fahrenheit lubricant. UL and CSA approved with permanent split capacitor style motors.

CORD: The power cord is approximately 3 feet long, SJ type with pigtail solder dipped terminations.



PERFORMANCE LIMITS FOR CABINET COOLING BLOWERS

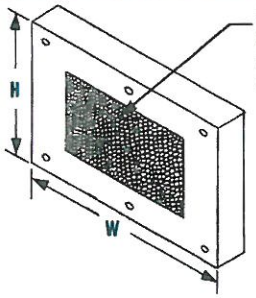


SHIELDED FILTERED BLOWER COVER PANEL

Nominal Vertical Opening Indicator
Indicate 19 for 19" Panel Width Frame 24 for 24" Panel Width Frame
Indicate (HC) for Honeycomb Filter

PART NUMBER MPN - 08 [ ] - HC

Part	H	W	Part	H	W
MPN-0819-HC	$10^{3}/_{32}$	$20^{11}/_{32}$	MPN-0824-HC	$10^{3}/_{32}$	$25^{11}/_{32}$



Provides a 78 square inch opening of EMI shielding effectiveness.

*Refer to page 11 for honeycomb vent panel specifications.

Replacement Honeycomb Filter Part Number MHCF-0613

ADAPTER BRACKET ASSEMBLY

PART NUMBER
MABA-000000

These Adapter Brackets, which are sold in pairs, reduce the mounting width of 24" wide frames to accept the 19" wide packaged blower.

HARDWARE

CASTERS — FOR USE WITH OPTIONAL PONTOON BASE ONLY

*HW-451 (without Side Brake)

4" diameter heavy duty swivel (single wheel), hard rubber caster. Overall height—5 1/16". Capacity—375-lbs. per caster. Sold as each.

*HW-451-LK (with Side Brake)

* These casters must be used with optional Pontoon Bases as described above. They will not mount direct to the frame.

MISCELLANEOUS HARDWARE

HW-092

#10-32 Thread Captive Clip Nut. USED FOR: 14 and 16 ga. material with No. HW-312 and HW-314 machine screws for shielded panels or No. HW-103 and HW-104 machine screws for non-shielded panels (formerly AHWX-092-003219)

AHWX-102-002025

1/4" - 20 Keps nut. USED FOR: Mounting equipment shelves and chassis guide.

HW-159

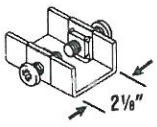
#8-32 Keps nut. USED FOR: Mounting hinge MHIN-0000-LH/RH and latch strike MLS-0000 to frame using AHIE-052-083216 flat head screw.

HW-163

5/16"-18 Keps nut. USED FOR: Mounting side panels to frame struts.

AHWX-192-002025

1/4" - 20 Thread captive clip nut. USED FOR: Mounting standard panel mounting angle to side strut, and pontoon base to frame with No. AHWX-722-102025 machine screw.



MJCC-0212

Frame joining clips to be used in conjunction with a MFJ-* frame joiner. USED FOR: Bolting vertical frames side by side.

MHCF-0613

Replacement Honeycomb Vent Panel.
USED FOR: The filter area of both doors and closure panels.

MHWK-100

Hardware Kit

Each Emcor Emission Control Plus Frame is supplied with a hardware kit which consists of the following: 20 ea. HW-103 non-shielded closure panel screw, 20 ea. AHWX-092-003219 clip nut.

AHWX-722-102025

1/4" - 20 thread pan head machine screw, Phillips head, 5/8" long. USED FOR: Mounting panel mounting angles and pontoon base.

AHWX-032-083216

#8-32 pan head machine screw, Phillips head, 1/2" long. USED FOR: Mounting MHIN-0000 to inner door with HW-159 Keps nut.

HW-103

#10-32 thread truss head machine screw, Phillips head 1 1/8" long with polyethelene washer. USED FOR: Mounting non-shielded 5/8" formed panels.

HW-104

#10-32 thread truss head machine screw, Phillips head 1/2" long with polyethelene washer. USED FOR: Mounting 1/8" thick aluminum panels to standard mounting angles using clip nut AHWX-092-003219.

HW-312

#10-32 truss head external tooth sems washer machine screws 2 1/4" long. USED FOR: Mounting shielded closure panels and honeycomb blower panel using AHWX-092-003219.

HW-316

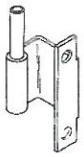
#10-32 truss head external tooth sems washer, machine screw 1/2" long. USED FOR: Mounting outer door to inner door with AHWX-092-003219, clip nut.

AHIE-052-083216

#8-32 flat head machine screw, Phillips head, 1/2" long. USED FOR: Mounting latch strike and male hinge section to frame using HW-159 Keps nut.

MHIN-XXXX

Door hinge, female portion of lift off hinge. USED ON: Mounts to inner door using AHWX-032-083216 screw and HW-159 Keps nut.



MHIN-XXXX-LH/RH

Door hinge, male portion of lift off hinge. USED ON: Mounts to frame using AHIE-052-083216 screw and HW-159 Keps nut.

MLS-0000

Latch strike. USED FOR: Latch strike for all surface mounted doors with No. AHIE-052-083216 screw and HW-159 Keps nut.

MFSG-002224

EMI/RFI gasket, beryllium copper finger stock. Sold by the foot. USED FOR: Sealing inner door, shielded closure panels, frame joiners and side panels.

MFSG-001316

EMI/RFI gasket, beryllium copper finger stock. Sold by the foot. USED FOR: Back-up sealing in the vertical sides of the front and rear openings only.

TOUCH-UP/ AIR DRY Emcor®

Emcor Touch-up Paint is available in air dry aresol spray cans, baking enamel or air dry lacquer quarts and gallons.

ORDERING GUIDE

FRAME	SIDE PANEL	SURFACE DOOR FULL LENGTH NO ACCESS PANEL AREA *1 *2	SURFACE DOOR FULL LENGTH ABOVE ACCESS PANEL AREA *1 *2 (See example below)	CLOSURE PANEL FULL LENGTH NO ACCESS PANEL AREA *2	CLOSURE PANEL FULL LENGTH ABOVE ACCESS PANEL AREA *2	CLOSURE PANEL ACCESS AREA *3 (See example below)	FRAME JOINER	INDICATES ACCESSORY ITEM STANDARD DEPTH MOUNTING i.e. Chassis Guides, Fixed Equip. Shelves, Cradle Slide Assy., etc.
MFR-282619-1	MSPI-2826	MDS-2619	—	MPN-2619	MPN-1419	MPN-0819	MFJ-2826	-26
MFR-281419-2	MSPI-2826	—	—	—	MPN-1419	MPN-0819	MFJ-2826	-26
MFR-284019-1	MSPI-2840	MDS-4019	MDS-2819- -S	MPN-4019	MPN-2819	MPN-0819	MFJ-2840	-26
MFR-282819-2	MSPI-2840	—	MDS-2819- -S	—	MPN-2819	MPN-0819	MFJ-2840	-26
MFR-285219-1	MSPI-2852	MDS-5219	MDS-4019- -S	MPN-5219	MPN-4019	MPN-0819	MFJ-2852	-26
MFR-284019-2	MSPI-2852	—	MDS-4019- -S	—	MPN-4019	MPN-0819	MFJ-2852	-26
MFR-286119-1	MSPI-2861	MDS-6119	MDS-4919- -S	MPN-6119	MPN-4919	MPN-0819	MFJ-2861	-26
MFR-284919-2	MSPI-2861	—	MDS-4919- -S	—	MPN-4919	MPN-0819	MFJ-2861	-26
MFR-287019-1	MSPI-2870	MDS-7019	MDS-5719- -S	MPN-7019	MPN-5719	MPN-0819	MFJ-2870	-26
MFR-285719-2	MSPI-2870	—	MDS-5719- -S	—	MPN-5719	MPN-0819	MFJ-2870	-26
MFR-287819-1	MSPI-2878	MDS-7819	MDS-6619- -S	MPN-7819	MPN-6619	MPN-0819	MFJ-2878	-26
MFR-286619-2	MSPI-2878	—	MDS-6619- -S	—	MPN-6619	MPN-0819	MFJ-2878	-26
MFR-282624-1	MSPI-2826	MDS-2624	—	MPN-2624	MPN-1424	MPN-0824	MFJ-2826	-26
MFR-281424-2	MSPI-2826	—	—	—	MPN-1424	MPN-0824	MFJ-2826	-26
MFR-284024-1	MSPI-2840	MDS-4024	MDS-2824- -S	MPN-4024	MPN-2824	MPN-0824	MFJ-2840	-26
MFR-282824-2	MSPI-2840	—	MDS-2824- -S	—	MPN-2824	MPN-0824	MFJ-2840	-26
MFR-285224-1	MSPI-2852	MDS-5224	MDS-4024- -S	MPN-5224	MPN-4024	MPN-0824	MFJ-2852	-26
MFR-284024-2	MSPI-2852	—	MDS-4024- -S	—	MPN-4024	MPN-0824	MFJ-2852	-26
MFR-286124-1	MSPI-2861	MDS-6124	MDS-4924- -S	MPN-6124	MPN-4924	MPN-0824	MFJ-2861	-26
MFR-284924-2	MSPI-2861	—	MDS-4924- -S	—	MPN-4924	MPN-0824	MFJ-2861	-26
MFR-287024-1	MSPI-2870	MDS-7024	MDS-5724- -S	MPN-7024	MPN-5724	MPN-0824	MFJ-2870	-26
MFR-285724-2	MSPI-2870	—	MDS-5724- -S	—	MPN-5724	MPN-0824	MFJ-2870	-26
MFR-287824-1	MSPI-2878	MDS-7824	MDS-6624- -S	MPN-7824	MPN-6624	MPN-0824	MFJ-2878	-26
MFR-286624-2	MSPI-2878	—	MDS-6624- -S	—	MPN-6624	MPN-0824	MFJ-2878	-26
MFR-332619-1	MSPI-3326	MDS-2619	—	MPN-2619	MPN-1419	MPN-0819	MFJ-3326	-31
MFR-331419-2	MSPI-3326	—	—	—	MPN-1419	MPN-0819	MFJ-3326	-31
MFR-334019-1	MSPI-3340	MDS-4019	MDS-2819- -S	MPN-4019	MPN-2819	MPN-0819	MFJ-3340	-31
MFR-332819-2	MSPI-3340	—	MDS-2819- -S	—	MPN-2819	MPN-0819	MFJ-3340	-31
MFR-335219-1	MSPI-3352	MDS-5219	MDS-4019- -S	MPN-5219	MPN-4019	MPN-0819	MFJ-3352	-31
MFR-334019-2	MSPI-3352	—	MDS-4019- -S	—	MPN-4019	MPN-0819	MFJ-3352	-31
MFR-336119-1	MSPI-3361	MDS-6119	MDS-4919- -S	MPN-6119	MPN-4919	MPN-0819	MFJ-3361	-31
MFR-334919-2	MSPI-3361	—	MDS-4919- -S	—	MPN-4919	MPN-0819	MFJ-3361	-31
MFR-337019-1	MSPI-3370	MDS-7019	MDS-5719- -S	MPN-7019	MPN-5719	MPN-0819	MFJ-3370	-31
MFR-335719-2	MSPI-3370	—	MDS-5719- -S	—	MPN-5719	MPN-0819	MFJ-3370	-31
MFR-337819-1	MSPI-3378	MDS-7819	MDS-6619- -S	MPN-7819	MPN-6619	MPN-0819	MFJ-3378	-31
MFR-336619-2	MSPI-3378	—	MDS-6619- -S	—	MPN-6619	MPN-0819	MFJ-3378	-31
MFR-332624-1	MSPI-3326	MDS-2624	—	MPN-2624	MPN-1424	MPN-0824	MFJ-3326	-31
MFR-331424-2	MSPI-3326	—	—	—	MPN-1424	MPN-0824	MFJ-3326	-31
MFR-334024-1	MSPI-3340	MDS-4024	MDS-2824- -S	MPN-4024	MPN-2824	MPN-0824	MFJ-3340	-31
MFR-332824-2	MSPI-3340	—	MDS-2824- -S	—	MPN-2824	MPN-0824	MFJ-3340	-31
MFR-335224-1	MSPI-3352	MDS-5224	MDS-4024- -S	MPN-5224	MPN-4024	MPN-0824	MFJ-3352	-31
MFR-334024-2	MSPI-3352	—	MDS-4024- -S	—	MPN-4024	MPN-0824	MFJ-3352	-31
MFR-336124-1	MSPI-3361	MDS-6124	MDS-4924- -S	MPN-6124	MPN-4924	MPN-0824	MFJ-3361	-31
MFR-334924-2	MSPI-3361	—	MDS-4924- -S	—	MPN-4924	MPN-0824	MFJ-3361	-31
MFR-337024-1	MSPI-3370	MDS-7024	MDS-5724- -S	MPN-7024	MPN-5724	MPN-0824	MFJ-3370	-31
MFR-335724-2	MSPI-3370	—	MDS-5724- -S	—	MPN-5724	MPN-0824	MFJ-3370	-31
MFR-337824-1	MSPI-3378	MDS-7824	MDS-6624- -S	MPN-7824	MPN-6624	MPN-0824	MFJ-3378	-31
MFR-336624-2	MSPI-3378	—	MDS-6624- -S	—	MPN-6624	MPN-0824	MFJ-3378	-31

*1 Indicate -LH (Left Hinged) or -RH (Right Hinged) Ex: MDS-7019-LH MDS-5719-RH-S
*2 Indicate -HC for Honeycomb Filter option Ex: MDS-6119-RH-HC MPN-6119-HC
*3 Indicate -HC for Honeycomb Blower Filter Panel Ex: MPN-0819-HC

FRAME	SIDE PANEL	SURFACE DOOR FULL LENGTH NO ACCESS PANEL AREA *1 *2	SURFACE DOOR FULL LENGTH ABOVE ACCESS PANEL AREA *1 *2 (See example below)	CLOSURE PANEL FULL LENGTH NO ACCESS PANEL AREA *2	CLOSURE PANEL FULL LENGTH ABOVE ACCESS PANEL AREA *2	CLOSURE PANEL ACCESS AREA *3 (See example below)	FRAME JOINER	INDICATES ACCESSORY ITEM STANDARD DEPTH MOUNTING i.e. Chassis Guides, Fixed Equip. Shelves, Cradle Slide Assy., etc.
MFR-382619-1	MSPI-3826	MDS-2619	—	MPN-2619	MPN-1419	MPN-0819	MFJ-3826	-36
MFR-381419-2	MSPI-3826	—	—	—	MPN-1419	MPN-0819	MFJ-3826	-36
MFR-384019-1	MSPI-3840	MDS-4019	MDS-2819- -S	MPN-4019	MPN-2819	MPN-0819	MFJ-3840	-36
MFR-382819-2	MSPI-3840	—	MDS-2819- -S	—	MPN-2819	MPN-0819	MFJ-3840	-36
MFR-385219-1	MSPI-3852	MDS-5219	MDS-4019- -S	MPN-5219	MPN-4019	MPN-0819	MFJ-3852	-36
MFR-384019-2	MSPI-3852	—	MDS-4019- -S	—	MPN-4019	MPN-0819	MFJ-3852	-36
MFR-386119-1	MSPI-3861	MDS-6119	MDS-4919- -S	MPN-6119	MPN-4919	MPN-0819	MFJ-3861	-36
MFR-384919-2	MSPI-3861	—	MDS-4919- -S	—	MPN-4919	MPN-0819	MFJ-3861	-36
MFR-387019-1	MSPI-3870	MDS-7019	MDS-5719- -S	MPN-7019	MPN-5719	MPN-0819	MFJ-3870	-36
MFR-385719-2	MSPI-3870	—	MDS-5719- -S	—	MPN-5719	MPN-0819	MFJ-3870	-36
MFR-387819-1	MSPI-3878	MDS-7819	MDS-6619- -S	MPN-7819	MPN-6619	MPN-0819	MFJ-3878	-36
MFR-386619-2	MSPI-3878	—	MDS-6619- -S	—	MPN-6619	MPN-0819	MFJ-3878	-36
MFR-382624-1	MSPI-3826	MDS-2624	—	MPN-2624	MPN-1424	MPN-0824	MFJ-3826	-36
MFR-381424-2	MSPI-3826	—	—	—	MPN-1424	MPN-0824	MFJ-3826	-36
MFR-384024-1	MSPI-3840	MDS-4024	MDS-2824- -S	MPN-4024	MPN-2824	MPN-0824	MFJ-3840	-36
MFR-382824-2	MSPI-3840	—	MDS-2824- -S	—	MPN-2824	MPN-0824	MFJ-3840	-36
MFR-385224-1	MSPI-3852	MDS-5224	MDS-4024- -S	MPN-5224	MPN-4024	MPN-0824	MFJ-3852	-36
MFR-384024-2	MSPI-3852	—	MDS-4024- -S	—	MPN-4024	MPN-0824	MFJ-3852	-36
MFR-386124-1	MSPI-3861	MDS-6124	MDS-4924- -S	MPN-6124	MPN-4924	MPN-0824	MFJ-3861	-36
MFR-384924-2	MSPI-3861	—	MDS-4924- -S	—	MPN-4924	MPN-0824	MFJ-3861	-36
MFR-387024-1	MSPI-3870	MDS-7024	MDS-5724- -S	MPN-7024	MPN-5724	MPN-0824	MFJ-3870	-36
MFR-385724-2	MSPI-3870	—	MDS-5724- -S	—	MPN-5724	MPN-0824	MFJ-3870	-36
MFR-387824-1	MSPI-3878	MDS-7824	MDS-6624- -S	MPN-7824	MPN-6624	MPN-0824	MFJ-3878	-36
MFR-386624-2	MSPI-3878	—	MDS-6624- -S	—	MPN-6624	MPN-0824	MFJ-3878	-36

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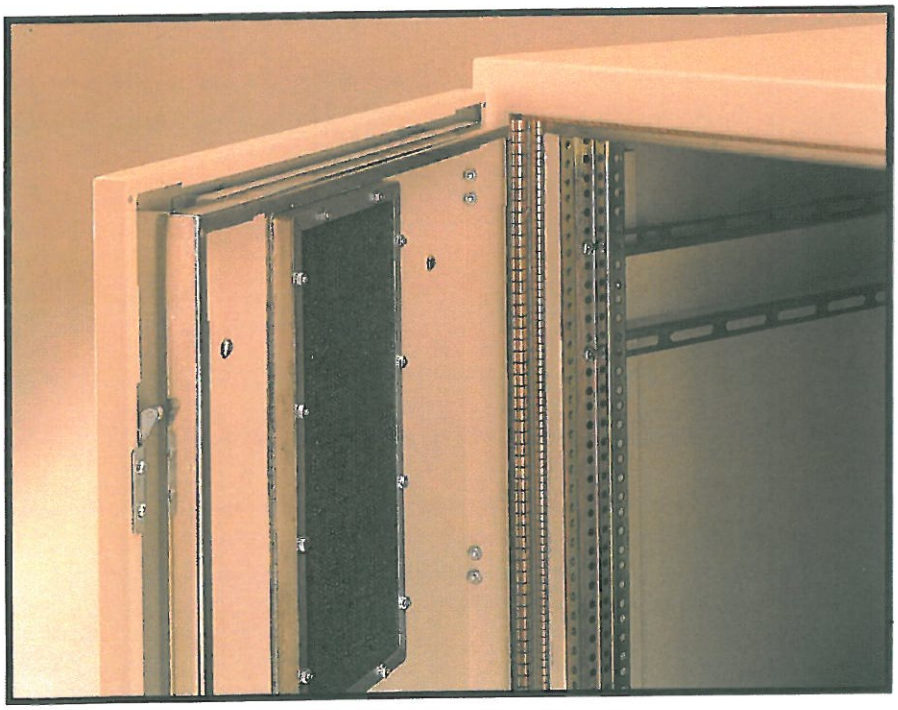
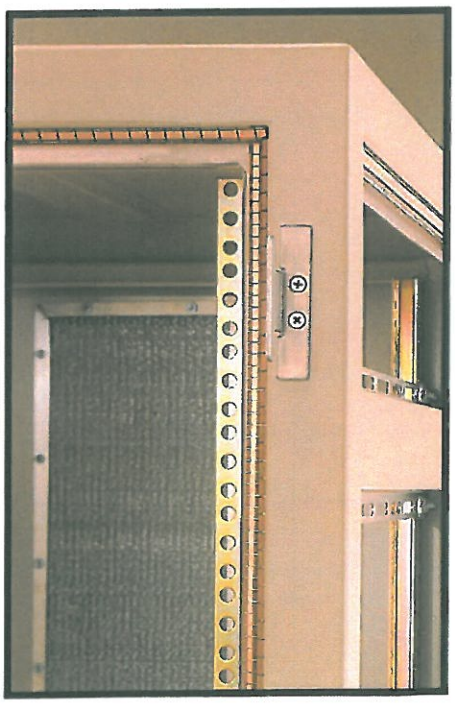
*2 Indicate -HC for Honeycomb Filter option Ex: MDS-6119-RH-HC MPN-6119-HC
*3 Indicate -HC for Honeycomb Blower Filter Panel Ex: MPN-0819-HC





The Emcor Emission Control Plus Shielded Door is registered under U.S. Patents DES. No. 300,097 NO. 4,913,476.

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