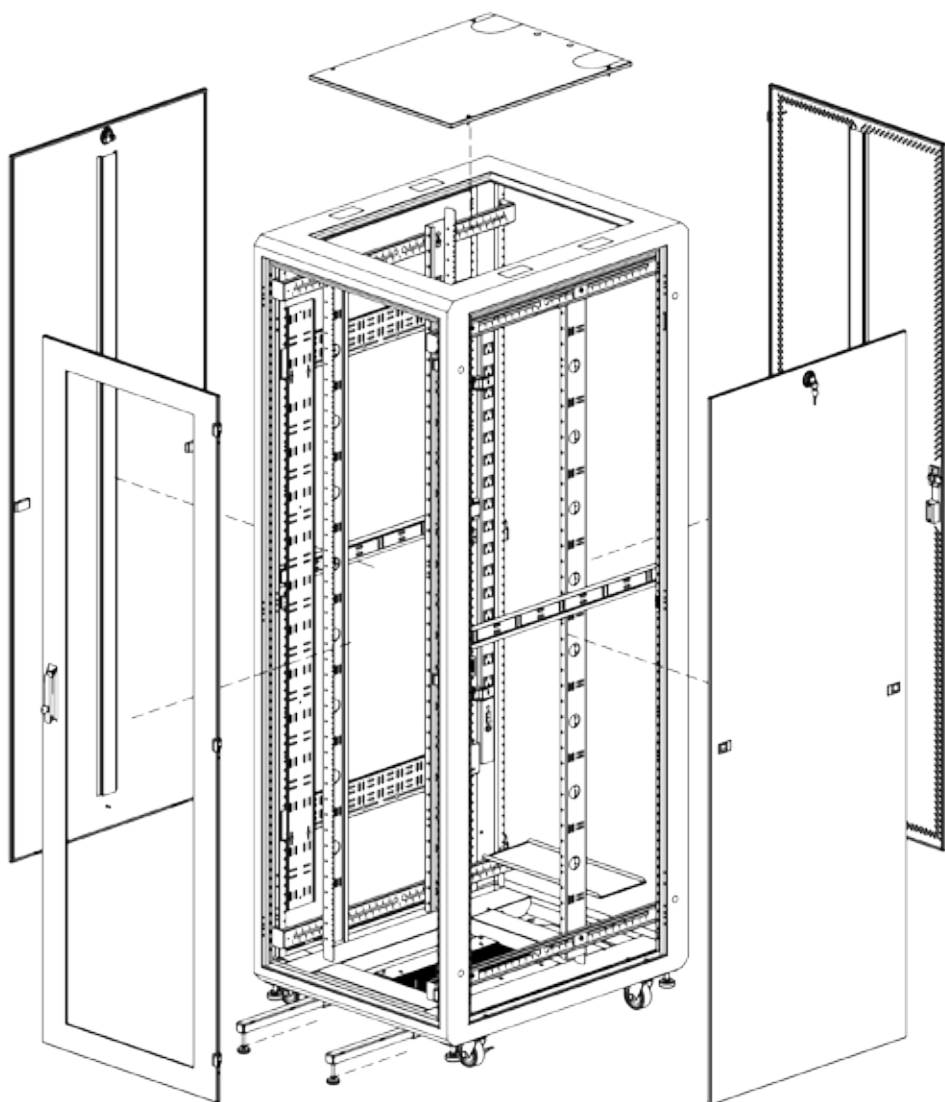




E and ES Series Enclosures Installation Instructions



Instructions for the following Great Lakes Enclosures:

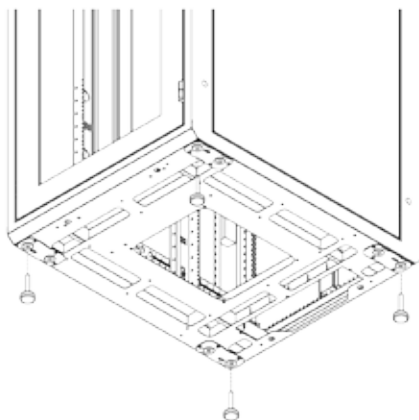
GL720E-2432, GL720E-2436, GL720E-2932, GL720E-2936, GL840E-2432,
GL840E-2436, GL840E-2932, GL840E-2936, GL480ES-2442, GL780ES-2442,
GL780ES-3042, GL840ES-2442, GL840ES-3042, GL840ES-2448, GL840ES-3048

INSTALLATION INSTRUCTIONS

Each E and ES Series Enclosure is shipped with the front and rear doors unlocked. Two keys for each door are in the same bright orange bag with this instruction sheet. Inside the enclosure you will find a box strapped to the vertical mounting rail, which contains the casters or levelers (if ordered,) along with equipment mounting hardware. The following information will assist you with the final installation and point out some of the many features of the enclosure.

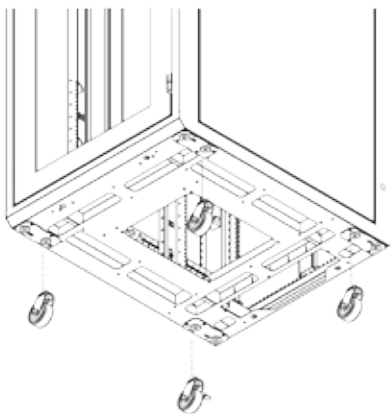
ADJUSTABLE LEVELER MOUNTING - E SERIES

On the bottom of the cabinet there are eight threaded holes, two in each corner. The outside holes are threaded 1/2"-13 thds. and will accept the levelers. Once the levelers (7209-N or 7209-N4) are installed, the cabinet level can be adjusted with the use of a 3/4" open-end wrench.



CASTER MOUNTING - E SERIES

Out of the four casters, two will have brakes that can be actuated by turning the brake lever on the side of the wheel. The four inside holes in each corner are threaded 1/2"-13 thds. to accept the casters. **Be sure to thread the caster into the bottom of the cabinet until it is firmly seated.**

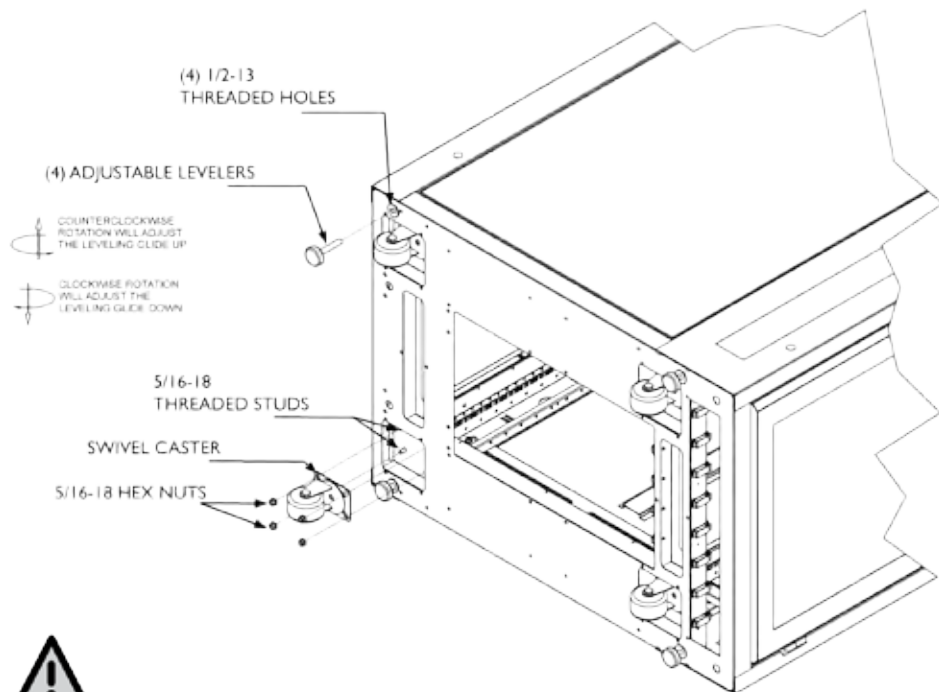


ANCHOR MOUNTING THRU HOLE

The middle .75 dia. thru holes are for securing the enclosure to the floor. These holes will accept a standard concrete anchor if desired; the Seismic Anchor Kit (AK101) is suggested.

CASTER AND LEVELER MOUNTING - ES SERIES

1. To install casters, the enclosure must first be tipped over onto/laid on its side - Read "NOTES" before proceeding.
2. Pass a plate caster over four threaded studs located in one of the recessed areas in the bottom of the enclosure.
3. Thread (1) 5/16-18 hex nut onto each stud and tighten with a 1/2" socket or nut driver.
4. Repeat steps 2 and 3 for the three remaining casters.
5. Install leveling glides (7209-N or 7209-N4) at this time if they were ordered with the enclosure.



NOTES:

- To install casters or levelers the enclosure must be tipped onto its side. The enclosure can be very heavy, several people will be required in this process. Please practice safe lifting techniques.
- DO NOT lay the enclosure on its front or back, this may damage the door hinges.
- Removing doors and sides will help reduce the weight of the enclosure.
- Before tipping, remove the side panels to prevent damage to the locks and latches.

ANTI-TIP LEGS

IMPORTANT: Before extending any equipment out the front of the enclosure, be sure that both anti-tip assemblies are fastened to the enclosure according to the instructions. All anti-tip hardware should be fully tightened. Both legs should be fully extended, with the glides on the bottom front end of each leg adjusted down and firmly contacting the floor.

INSTALLATION

STEP 1 - Look at the side of each leg assembly to verify that a screw has been installed to limit the travel of the sliding leg. The screw head should be completely inside the long slot on the side of the assembly. The screw head should travel freely the entire length of the slot. **IMPORTANT:** If the legs do not slide the full length of the slot, contact Great Lakes customer service toll free at 1-(866)-TRY-GLCC (879-4522) for assistance.

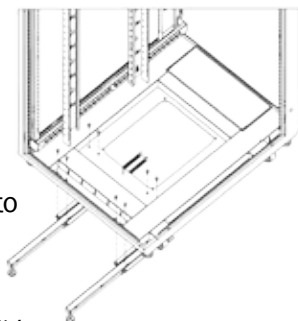
STEP 2 - With the enclosure on glides or casters, place both leg assemblies under the front of the enclosure. The glide in the anti-tip leg must be at the front end of the assembly.

STEP 3 - Align the four threaded holes in the stationary channel with the four holes in the bottom of the enclosure. From inside the enclosure, thread one 1/4-20 x 3/4" hex head bolt with flat washer into each threaded hole, eight locations total. Use a 7/16" wrench or socket to tighten each bolt.

STEP 4 - Verify each leg travels freely from its fully retracted to fully extended position as it did in step #1.

If each leg does not travel properly then call 1-866-TRY-GLCC (879-4522).

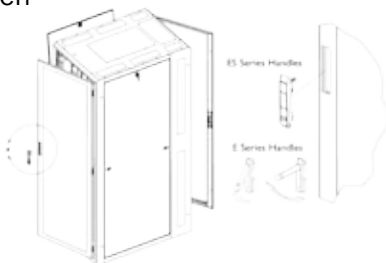
NOTES: The glides in the anti-tip legs may need to be adjusted up to be able to extend /retract the legs due to floor conditions. If the enclosure is mounted on casters use care when moving the enclosure as the glides on the anti-tip legs are close to the floor and may catch on some variations in the floor. (Part Number AT1 for ES-Series enclosures and AT2 for E-Series)



OPERATING DOOR HANDLE

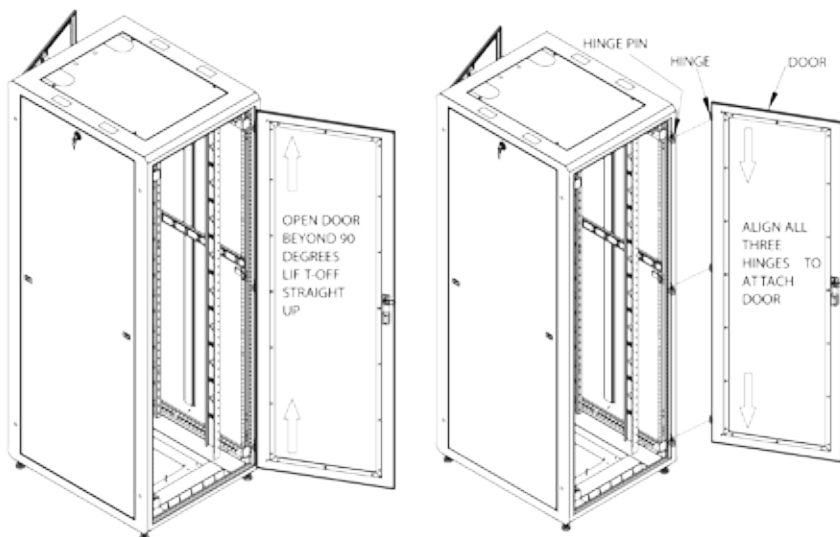
E SERIES - The door swing handles have been installed at the manufacturer. No additional assembly is required. To operate the swing handle, lift up at the bottom of the handle then, swing the handle to the right to open. The handle must be kept in this position to close the door. Return the handle to the initial position and use the key provided to lock the handle. The lock on the side panels will accept the same key. The swing handles and doors are reversible.

ES SERIES - The contour door on the ES cabinets uses the easy latch handle. Simply lift up to release. If you are reversing the doors, make sure to switch the latch bracket to the other side.



DOOR REMOVAL AND ATTACHMENT

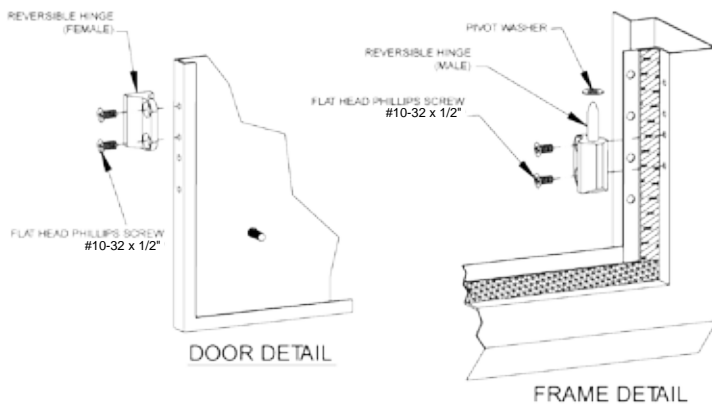
Open the door beyond 90 degrees, grasp the door with both hands and carefully lift upward. When the door is free of all three hinge pins, pull the door away from the enclosure. To attach the door, align all three hinges of the door to their respective hinge pins on the enclosure and slowly slide the door down until seated.



FIELD REVERSIBLE FRONT & REAR DOORS

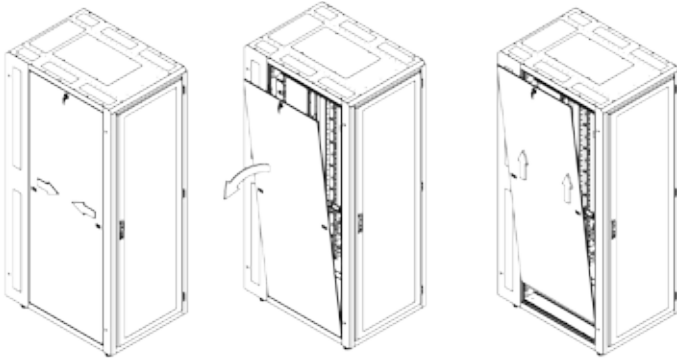
The front and rear doors are installed right hand hinge as standard from the manufacturer. Removing the hinges allows you to reverse the door by flipping them over and reinstalling the hinges using the universal mounting holes. Begin both screws, then tighten while maintaining perfect vertical alignment. See detail below. All enclosure frames and doors have provisions to be hinged right or left hand. The handle can be reversed along with the hinging. See Operating Handle Detail.

HINGE MOUNTING



SIDE PANEL REMOVAL

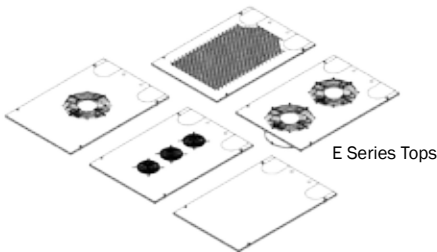
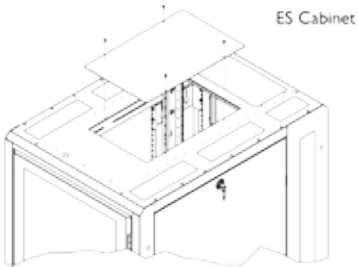
The side panels are secured to the enclosure frame with two quick release latches and a keyed lock. Be sure to unlock the side panel. To remove the side panel, squeeze the quick release latches towards each other. Then tilt the top of the side panel out slightly and lift the side panel up a couple of inches until it is free. To install the side panel, reverse the process. Make sure the slots on the side panel engage with the two tabs at the bottom of the frame.



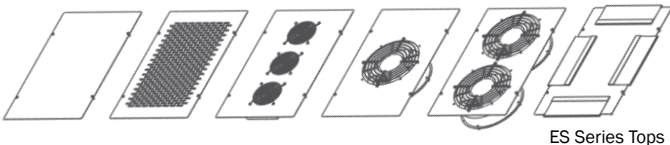
TOP PANEL MOUNTING

The top panel of the enclosure is installed at the manufacturer. Removing the top panel can be done by removing the four #10-32 x 1" lg. phillips pan head screws, (E Series), or the four #10-32 x 1/2" lg screws (ES Series). Then simply lift the top panel out or off. There are 5 top panel options for E Series enclosures: Solid panels (TPE-**-S); perforated panels (TPE-**-P); one 10", 550 CFM fan top (TPE-**-F10); two 10", 55 CFM fan top (TPE-**-2F10); three, 75 CFM fan top (TPE-**-F).

All E Series top panels have two, 4" horseshoe knockouts for cable access.

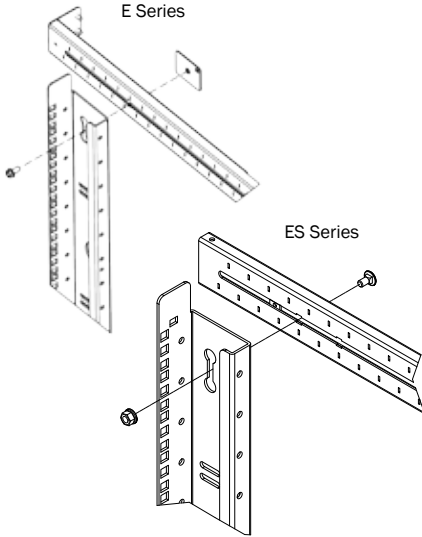
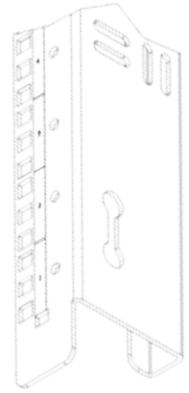


There are 6 top panel options for ES Series enclosures: Solid panel (TPES-S); perforated panel (TPES-P); one 10", 550 CFM fan top (TPES-F10); two 10", 55 CFM fan top (TPES-2F10); three, 75 CFM fan top (TPES-F); top panel with brush grommet (TPES-B).



MOUNTING RAILS

The vertical mounting rails (each enclosure has two pairs, 12 ga. steel, powder coated rails), come installed with all standard frames at 19" EIA 310-D. The 29" wide E Series enclosure and the 30" wide ES enclosure can be configured to 23" EIA mounting with an optional replacement bracket set. Universal cage nut rails (M6) are standard. Tapped #10-32 rails are available. (Must be specified at time of order.)

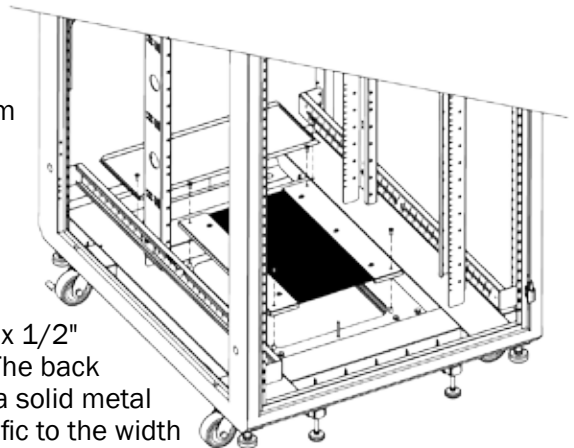


RAIL ADJUSTMENT

E-Series rails are attached using a sliding nut plate and a 1/4-20 hex head bolt. ES-Series rails are attached using 1/4-20 carriage bolt and 1/4-20 hex nut with serrated flange. By loosening both top and bottom bolts using a 3/8" socket set, the rails can be adjusted infinitely front to back. Rack Mount Units (RMU) are marked on rails for easy equipment mounting. Round cable pass through, vertical and horizontal cable tie down slots can be found on side of rails.

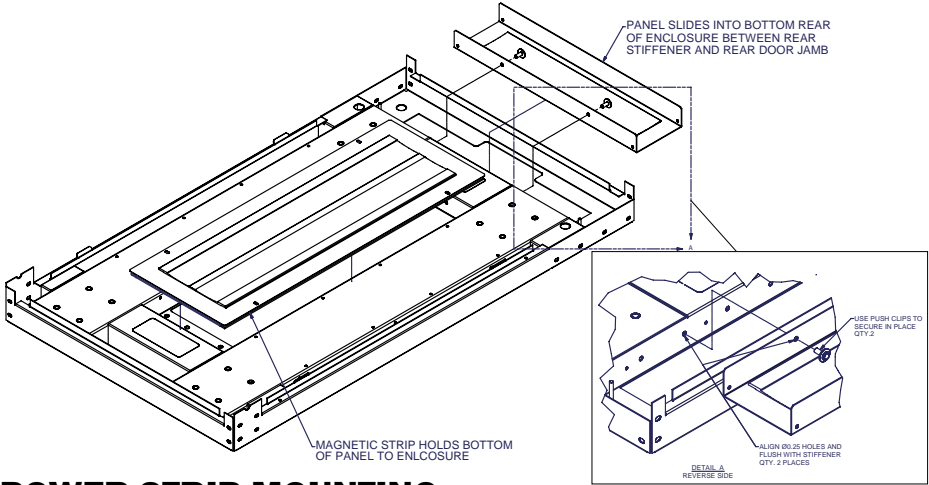
BOTTOM PANELS E SERIES

There are several styles of panels available for the bottom of your E-Series enclosure. Optional panels are solid, filtered or brush grommet. These panels have foam gasketing for a positive seal and mount to four internally threaded studs using #10-32 x 1/2" lg. phillips pan head screws. The back opening can be covered with a solid metal cover. These covers are specific to the width of the enclosure. Please see our web site for part numbers and additional information.



BOTTOM PANEL - ES SERIES

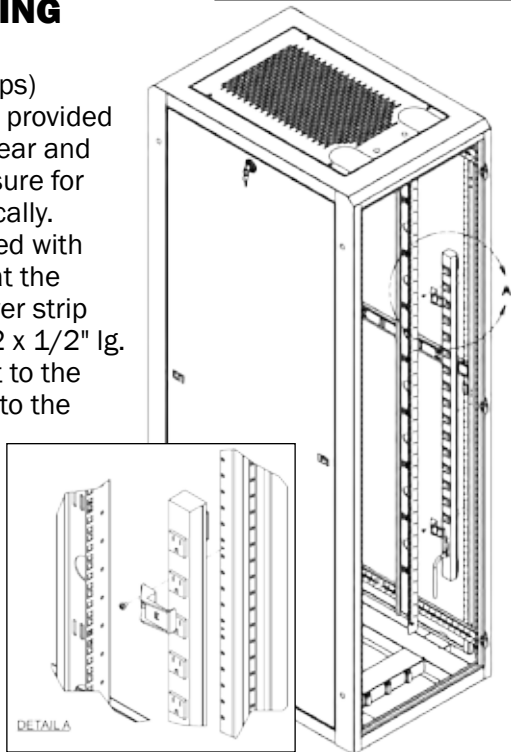
The brush grommet panel for the ES series comes in two sections. One for the middle opening and one for the rear. Once you have unpacked the large "flat" rectangular middle section, place it in the bottom of the enclosure with the magnetic strip down. The rear section is ready to go. Remove the plastic cable clips. Find the push-in fasteners (2) in the hardware bag, line up the holes in the bracket with the rear opening of the enclosures and attach.



POWER STRIP MOUNTING E SERIES

(for Standard Power Outlet Strips)

For your convenience, we have provided mounting brackets in the left rear and right rear corners of the enclosure for mounting the power strip vertically. Typically any power strip shipped with an enclosure will be installed at the manufacturer. To install a power strip in the field, remove the #10-32 x 1/2" lg. screws that secure the bracket to the frame. Place the power strip into the corner post of the frame and then place one bracket between the top two outlets and install the #10-32 x 1/2" lg. screw into the threaded hole in the frame. Then place the other bracket over the power strip between the bottom two outlets and secure to the frame with the same type of screw.



For ES power strip mounting, see page 11.

UNIVERSAL POWER STRIP BRACKETS - E SERIES

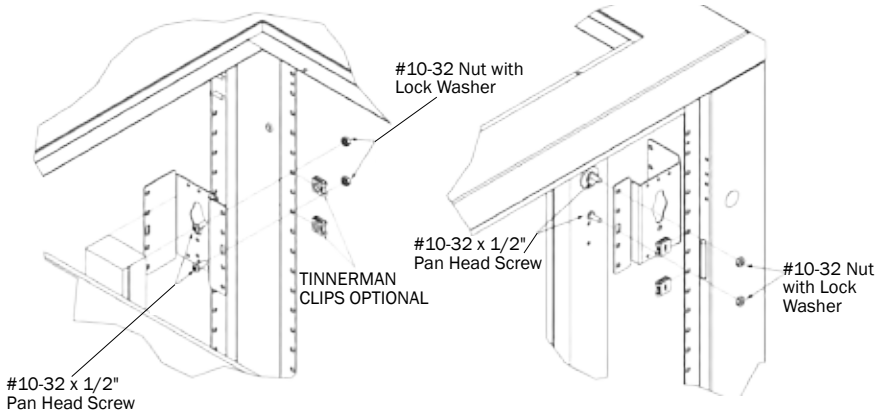
Great Lakes offers a universal power strip bracket kit. These brackets allow you to mount a PDU with button mounting. See drawing.



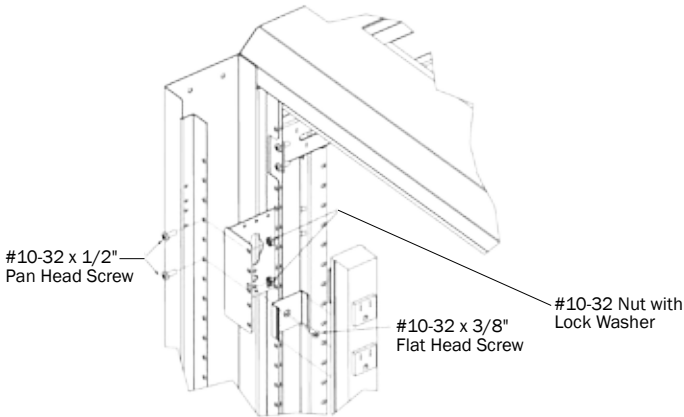
	PDU Bracket	Spring Clip	Tinnerman Clip	10/32 Nut w/ Lock Washer	10/32 x 3/8" Flat Head Screw	10/32 x 1/2" Pan Head Screw
PSBKE	2	2	10	10	10	10

To mount Universal Power Strip Brackets in an E enclosure or cabinet extension, measure the required mounting distance top to bottom, install brackets, then install power strip.

MOUNTING IN AN E SERIES ENCLOSURE

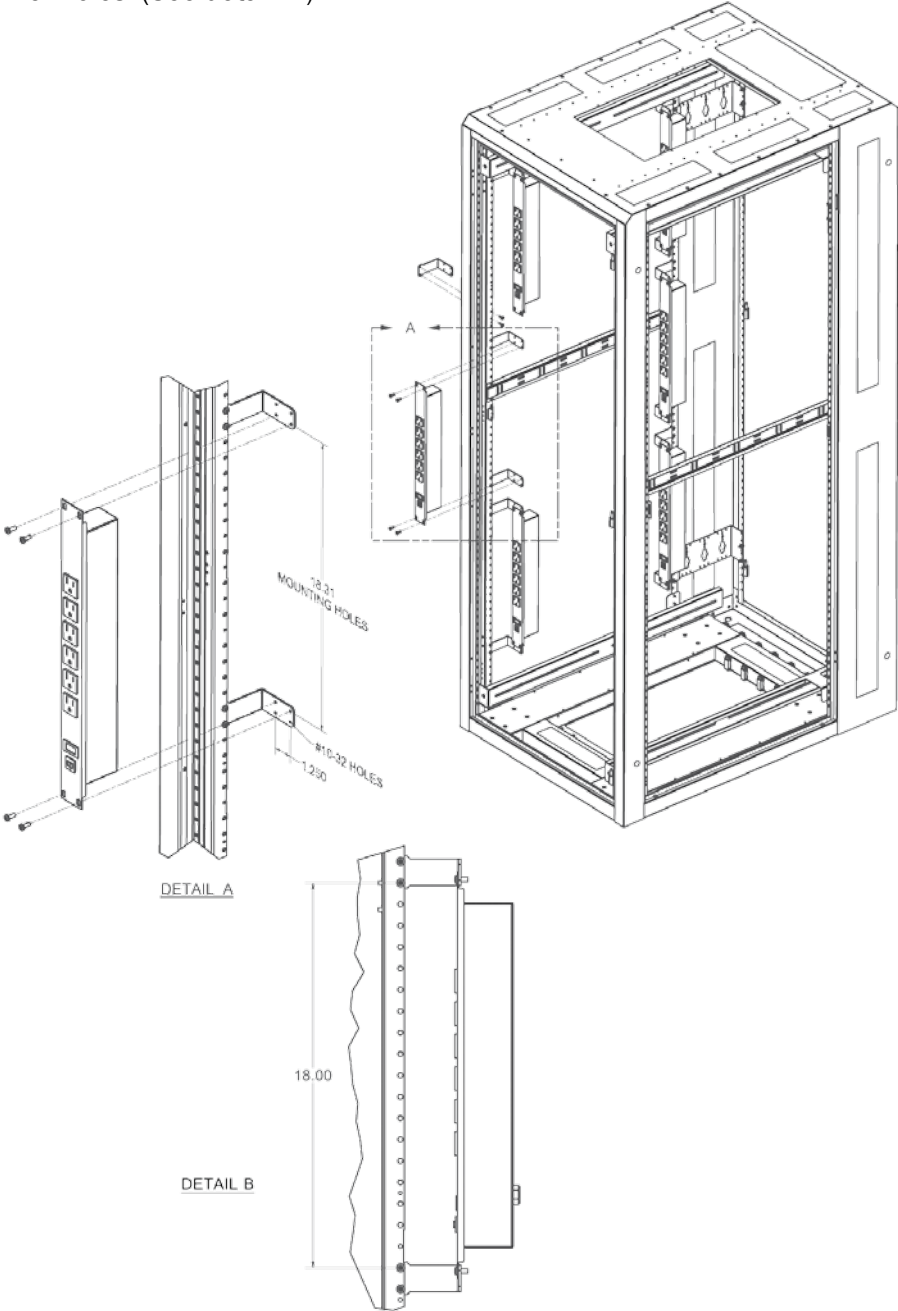


MOUNTING IN A CABINET EXTENSION



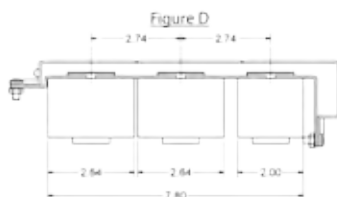
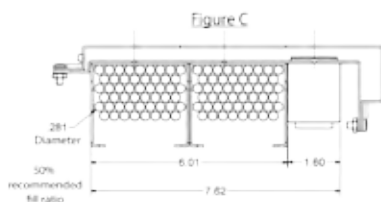
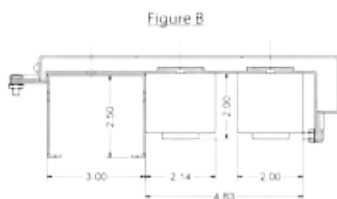
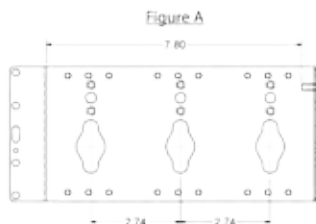
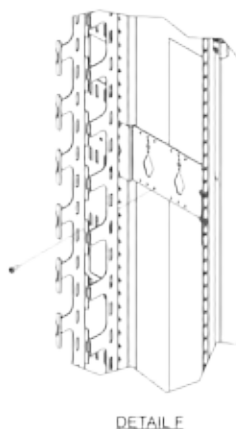
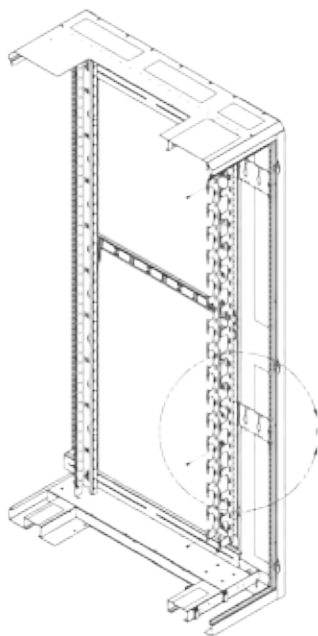
PDU1 MOUNTING - 30"W ES & 29"W E SERIES

The 30"W ES and 29"W E allows for “0” RMU mounting of 19" rack mount power strip units or other 1 RMU equipment (such as patch panels). You can mount up to twelve (12), 1 RMU pieces of equipment this way. Install the bracket into the side panel flange. Make sure you have 18" between the inner holes. (See detail B.)



VERTICAL CABLE TROUGH & PDU MOUNTING ES SERIES (For GL780ES, GL840ES)

The ES enclosures come with a universal power strip bracket set in both rear corners. These bracket sets will accept a wide range of Power Distribution Units (PDUs) and will also accept the vertical cable troughs. The VCT-78 and VCT-84 (3.00"W x 2.572"D) are ES enclosure vertical cable troughs. Figures A, B, C & D show the bracket and the usable mounting space. The size of the PDU will determine how many of them you will be able to place on the brackets. Keep in mind the VCT-** are 3.00" wide. The location of the button mounting will also need to be taken into consideration when placing your PDUs.

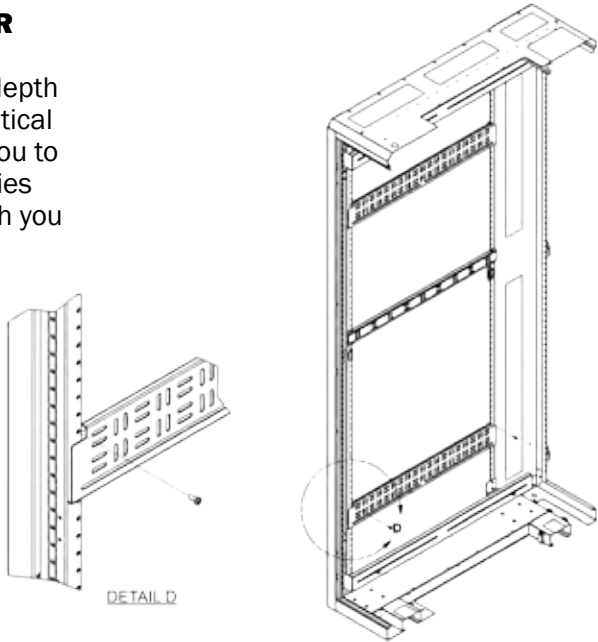


LACING BARS

HORIZONTAL LACING BAR

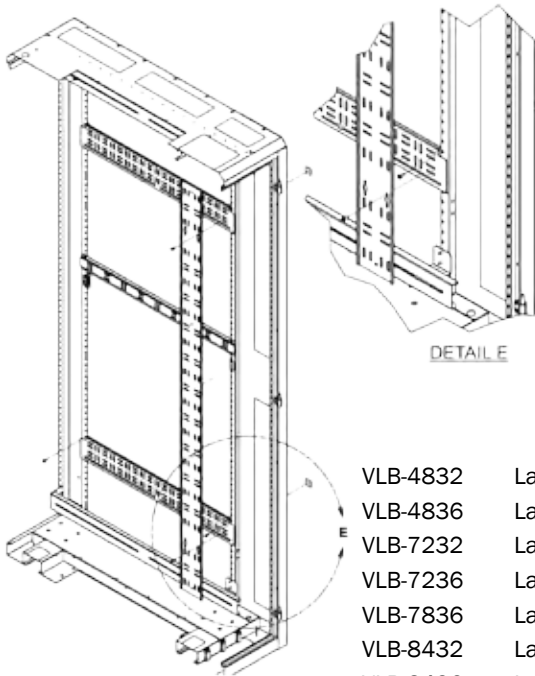
(E & ES Enclosures)
Horizontal lacing bars are depth specific. Double rows of vertical and horizontal slots allow you to use velcro straps or cable ties to secure your cables, which you can run from front to rear of enclosure.

- HLB-32 Horizontal Lacing Bar (32"D enclosures)
- HLB-36 Horizontal Lacing Bar (36"D enclosures)



VERTICAL LACING BAR

Vertical lacing bar kits include two horizontal lacing bars and one vertical lacing bar. When ordered with an enclosure, these kits will come pre-installed. Lacing bars run independently from 19" rack rails and are infinitely adjustable front to back. Additional vertical lacing bars are also available.



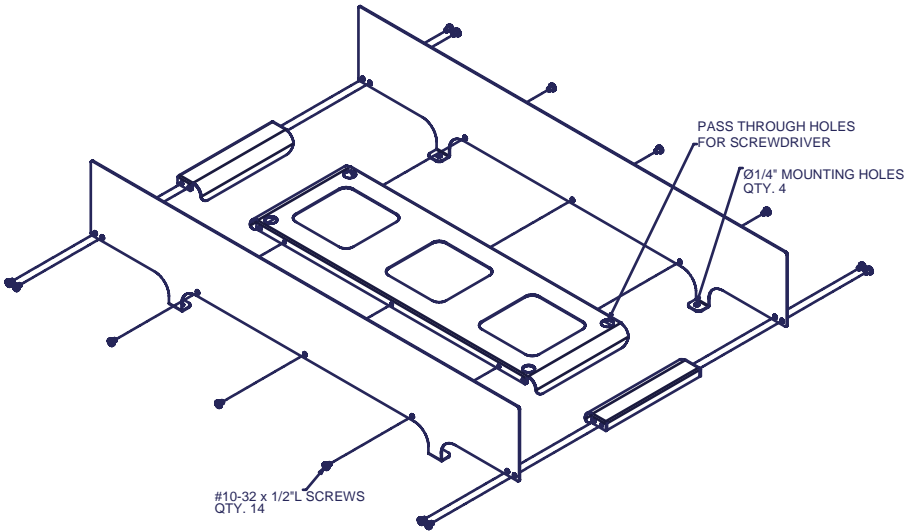
- | | |
|----------|---|
| VLB-4832 | Lacing Bar Kit (48"H x 32"D enclosures) |
| VLB-4836 | Lacing Bar Kit (48"H x 36"D enclosures) |
| VLB-7232 | Lacing Bar Kit (72"H x 32"D enclosures) |
| VLB-7236 | Lacing Bar Kit (72"H x 36"D enclosures) |
| VLB-7836 | Lacing Bar Kit (78"H x 36"D enclosures) |
| VLB-8432 | Lacing Bar Kit (84"H x 32"D enclosures) |
| VLB-8436 | Lacing Bar Kit (84"H x 36"D enclosures) |
| VLB-72 | Vertical Lacing Bar (72"H enclosures) |
| VLB-78 | Vertical Lacing Bar (78"H enclosures) |
| VLB-84 | Vertical Lacing Bar (84"H enclosures) |

OVERHEAD CABLE TROUGH - ES SERIES

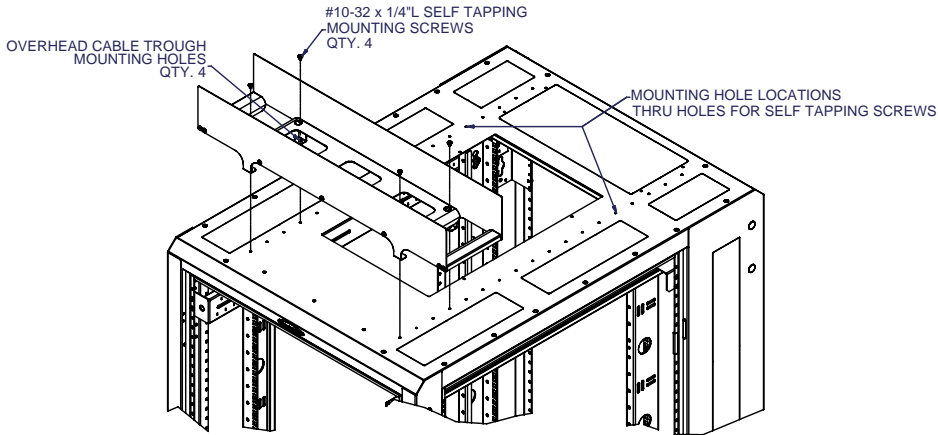
The overhead cable trough ships unassembled. Assemble trough as shown in exploded view. The top of the ES enclosure has a series of mounting holes. Place the trough where you require cable routing. For 24"W enclosures, use the TCT24; for 30"W enclosures, use the TCT30.

EXPLODED VIEW

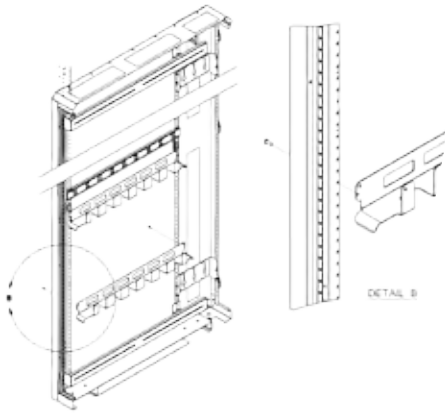
(Assemble as shown before attaching to enclosure)



INSTALLATION VIEW

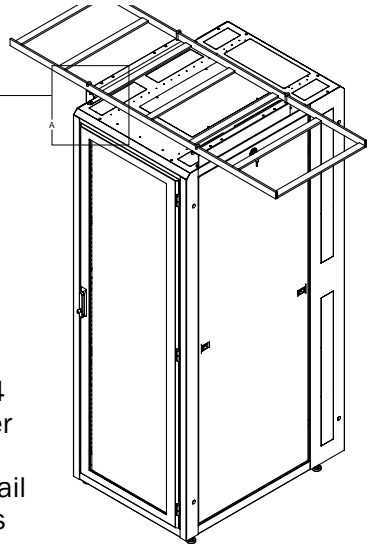
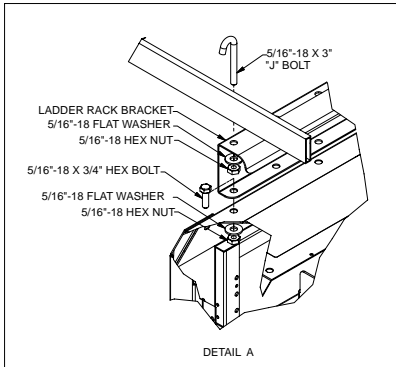


HCM-D36ES MOUNTING - 30"W ES SERIES



HCM-D36ES are horizontal cable troughs that can be used in the ES enclosures. If these parts are ordered with the cabinet they are pre-installed. If you need to move the trough please do so before ganging enclosures. These troughs are installed between the side panel and the 19" rack mount rails. Side panel will have to be removed before installation. (See detail.)

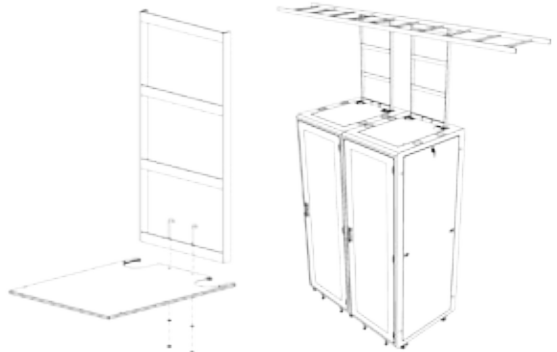
LADDER RACK BRACKET - ES SERIES



The LRB-12 (to support 12" rack) and LRB-24 (to support 18 and 24" rack) is a single ladder rack bracket with installation hardware; Two brackets are required per enclosure (See detail for mounting instructions.) Once two brackets are installed, you can attach your ladder rack.

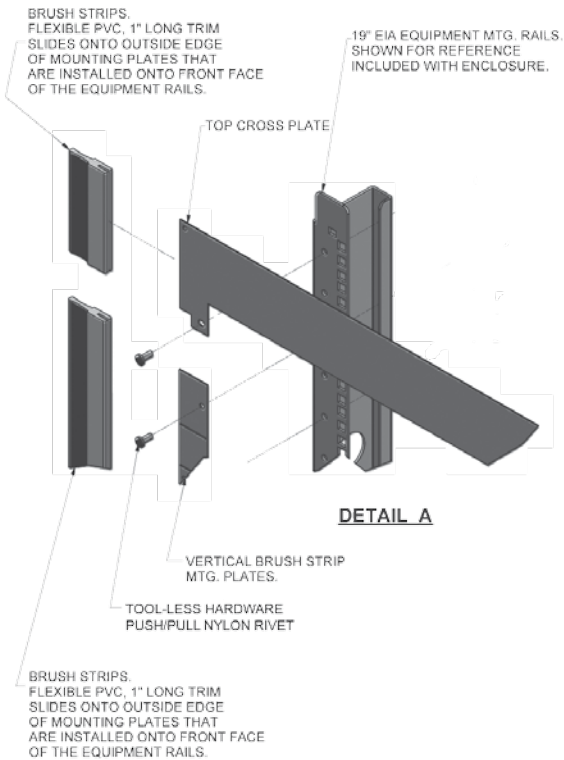
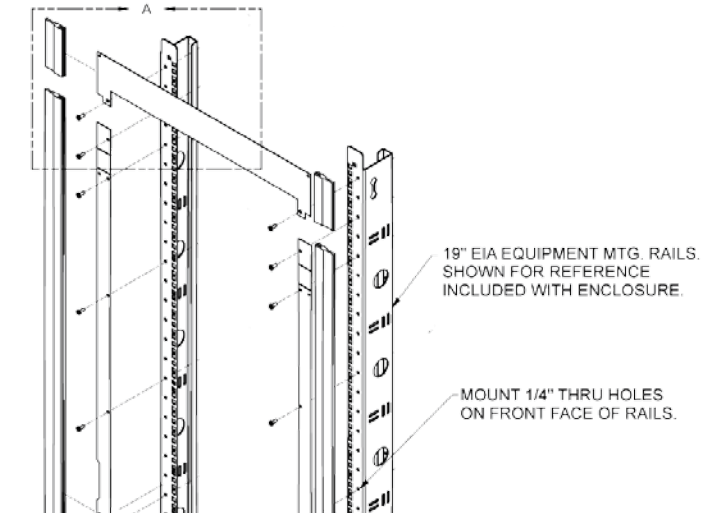
CABLE LADDER ATTACHMENT HOLES

All E and ES Series tops have pre-drilled cable runway attachment holes.



BRUSH GROMMET KIT - ES SERIES

The brush grommet kit is best installed before any equipment is installed in the enclosure. Please refer to detail A for mounting and hardware usage. BGRK24 is for use with 24"W ES enclosures, while the BGRK30 is for use with 30"W ES enclosures.



AIR MANAGER & FAN TRAY - ES SERIES

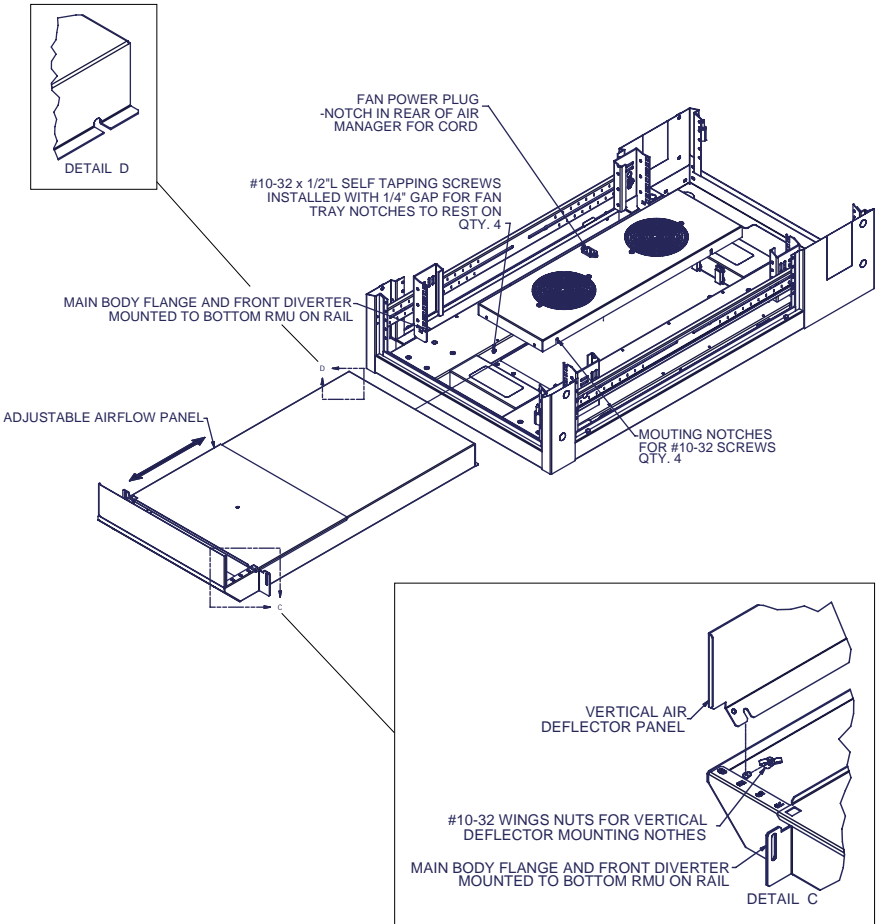
IMPORTANT: If you are installing the optional fan tray, please install before the air manager. The Air Manager will take up the first RMU in the bottom of your enclosure (even though you will only need to use the bottom two mounting locations of this RMU).

INSTALLATION OF FAN TRAY

The AM-FTES24 fan tray is for use with 24"W enclosures, while the AM-FTES30 is for use with 30"W enclosures. Install four (4) #10-32 x 1/2" screws in the middle center of the ES enclosure. Make sure to remove the plastic cable guides from the middle rear. Place the fan tray on the #10-32 screws. Plug in the power cord and allow for it when you are mounting the Air Manager (see detail "D").

INSTALLATION OF AIR MANAGER

Place the Air Manager (AM-ES) in the bottom of your ES enclosure, attach using two cage nuts per side. Use the wing nuts to secure the vertical air deflector. After you have installed the Air Manager you can change the amount of airflow by sliding the adjustable panel.

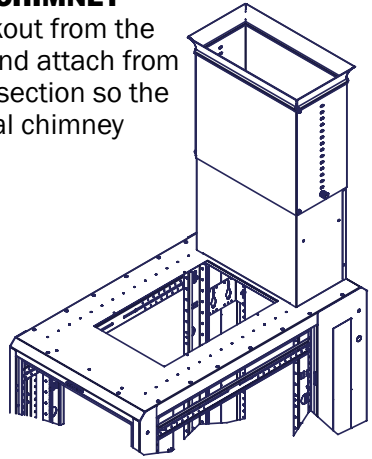


EXHAUST CHIMNEY & FAN TRAY - ES SERIES

INSTALLATION OF ADJUSTABLE EXHAUST CHIMNEY

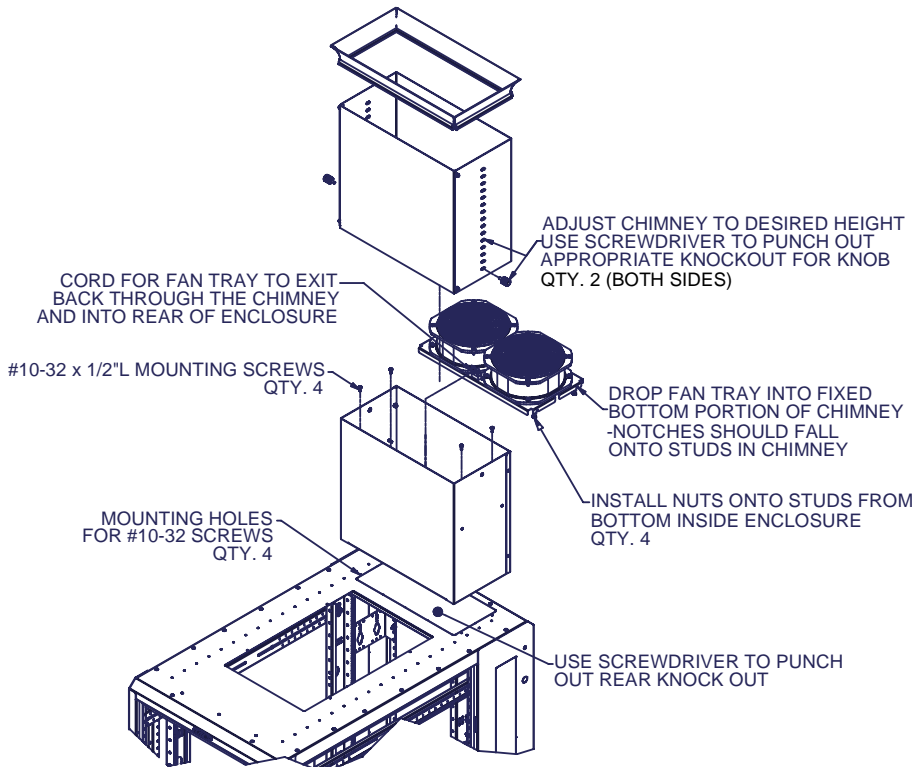
Before installation, remove the rear, top knockout from the enclosure. Place assembled chimney on top and attach from the top using #10-32 screws. Raise the outer section so the seal touches the opening in the ceiling. Several chimney options are available:

- | | |
|---------------|---|
| GL-EC-42-1832 | Chimney for 42"D enclosure with an adjustable range of 18" to 32" |
| GL-EC-42-3246 | Chimney for 42"D enclosure with an adjustable range of 32" to 46" |
| GL-EC-48-1832 | Chimney for 48"D enclosure with an adjustable range of 18" to 32" |
| GL-EC-48-3246 | Chimney for 48"D enclosure with an adjustable range of 32" to 46" |



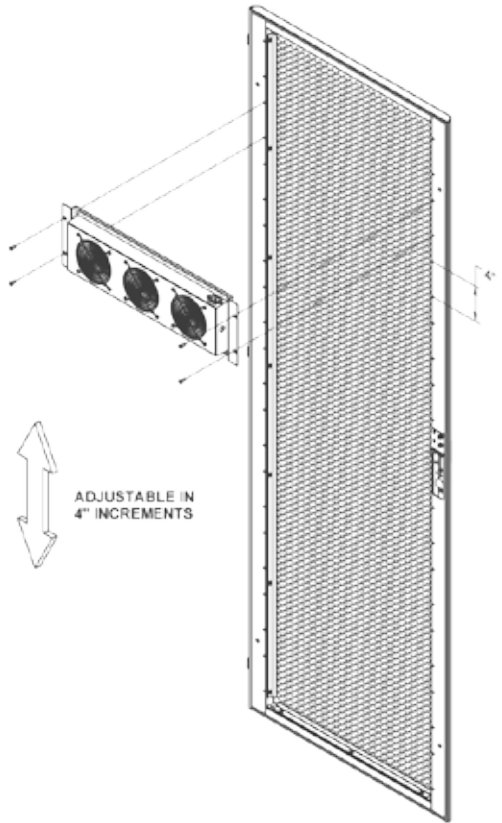
INSTALLATION OF FAN TRAY

Place fan tray (GL-ECFT42 or 48) onto fixed portion of the chimney. Make sure the fan cord is hanging down through the chimney and into the enclosure. There are four studs that will receive the fan. After the fan has been placed secure with #10-32 nuts from the inside of the enclosure.

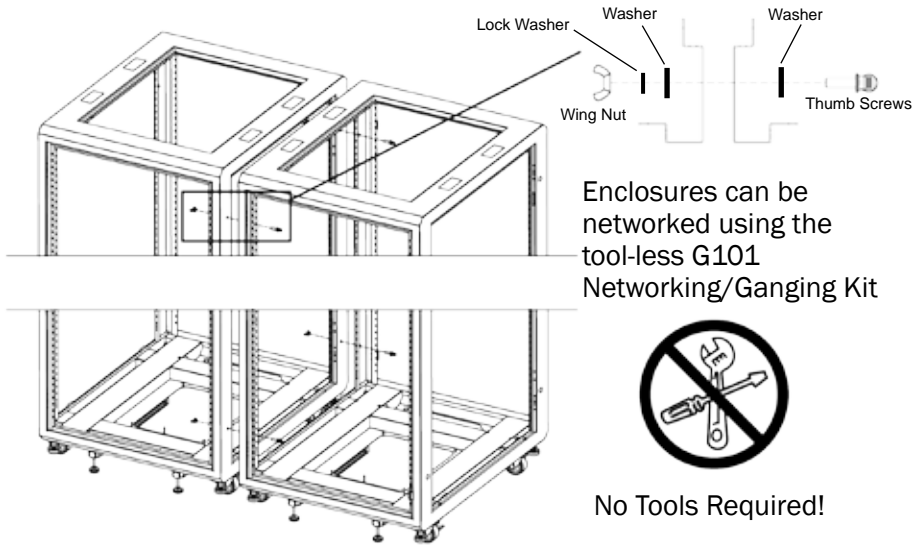


MESH CONTOUR DOOR

The mesh contour door for the 24" wide enclosures will accept a two (2) hole fan assembly, (7217LE2). The mesh contour door for the 30" and 29" wide enclosures will accept a three (3) hole fan assembly (7217LE3). Both of these fan assemblies simply need to be attached to the door using the supplied #10-32 hardware. The fans should be placed where you need to alleviate a hot spot.



NETWORKING/ GANGING



ACCESSORIES

STATIONARY SHELVES: 19" Rack Mount

PART NO.	WIDTH	DEPTH	MAX TAB PMT.*	WT. CAP.
7206-FM	17.25"	18.00"	-	60 lbs.
7206-EIA	17.46"	18.00"	-	80 lbs.
7206-FR-AHD	17.50"	22.25"	26.125"	200 lbs.
7206-FR-ADHD	17.50"	27.25"	32.250"	150 lbs.
7206-FR-A28HD	17.50"	28.00"	30.180"	300 lbs.
7206-FR-A32HD	17.50"	32.00"	36.000"	300 lbs.
7206-BT	17.00"	20.75"	25.250"	300 lbs.

SLIDING SHELVES: 19" Rack Mount

PART NO.	WIDTH	DEPTH	MAX TAB PMT. *	WT. CAP.
7206-FRSL-AHD	17.50"	22.00"	26.125"	110 lbs.
7206-FRSL-ADHD	17.50"	26.00"	32.125"	110 lbs.
7206-FRSLA300	14.33"	30.00"	36.12"	300 lbs.
7206-SL	16.34"	17.50"	-	40 lbs.
7206-DR	16.00"	18.875"	25.500"	100 lbs.

SPECIALTY SHELVES: 19" Rack Mount

PART NO.	WIDTH	DEPTH	MAX TAB PMT.*	WT. CAP.
7206-MKM	17.00"	24.00"	36.12"	200 lbs.
7206-PKB-MT	20.62"	9.50"	36.12"	N/A

VERTICAL POWER STRIPS

PART NO.	OUTLETS	LENGTH/FEATURES
7215	16	49" Circuit Breaker, 5-15P Plug, 5-15R Receptacle
7215-S	16	49" Surge Suppressor, C.B, 5-15P Plug, 5-15R Receptacle
7215-ARTLP	16	49" C.B., Twist Lock Plug L5-20P, 5-20R Receptacle
7215-20AR	16	49" Circuit breaker, 5-20P Plug, 5-20R Receptacle
7215-30A	24	48" Two banks of 12 NEMA 5-20R Receptacles, L5-30P Plug
7218-24	8	25" Circuit Breaker, 5-15P Plug, 5-15R Receptacle (for use with 48" and 60"H enclosures)

* Measure your vertical EIA rails front to back for shelf compatibility. Shelf mounting tabs are adjustable beyond the shelf surface depth for maximum flexibility.

Visit our web site at www.werackyourworld.com for a complete list of available accessories.
NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS



Great Lakes Case & Cabinet Co., Inc.

Thank
You
for your
business!

www.weRackyourWorld.com

