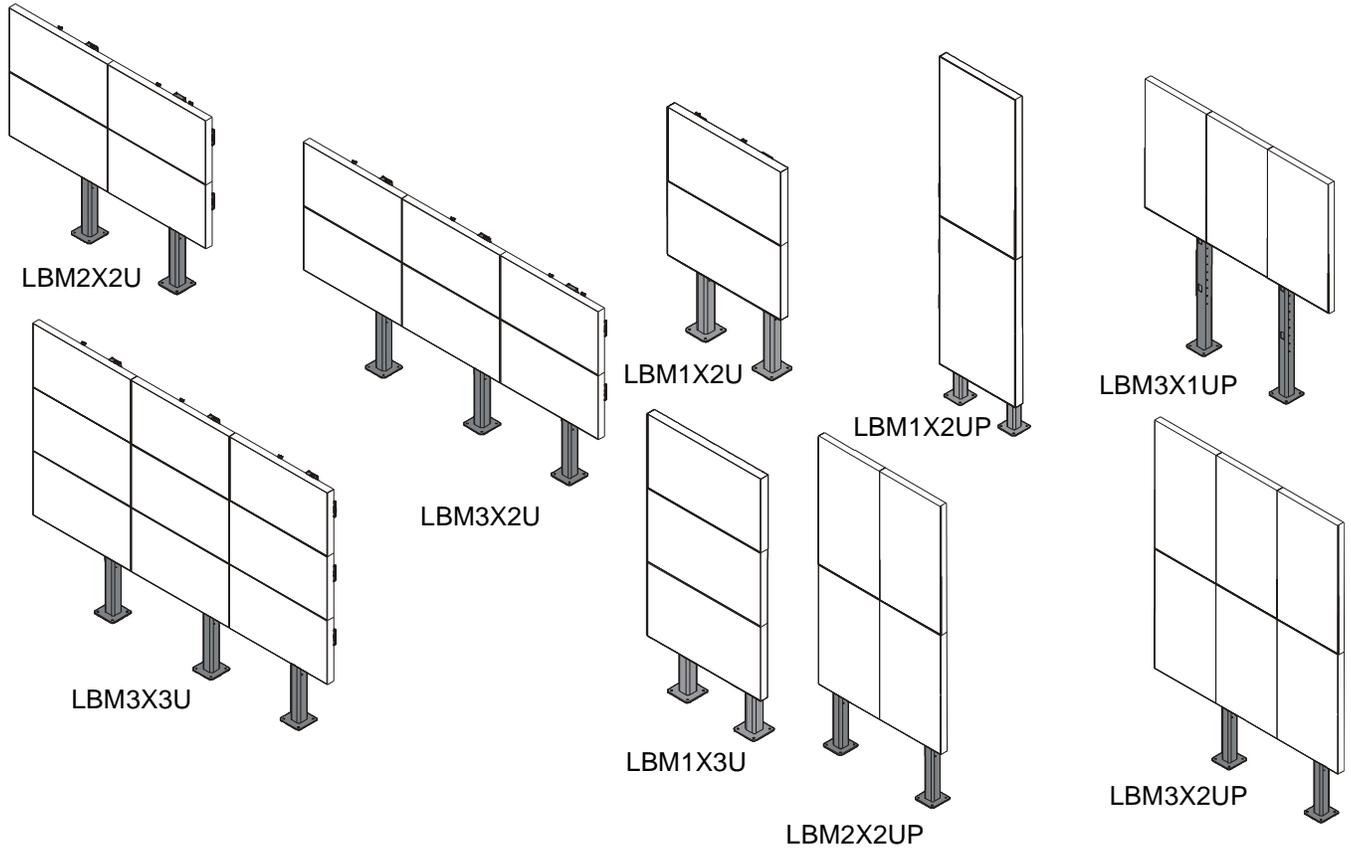


# INSTALLATION INSTRUCTIONS



## Bolt Down Video Wall

**DISCLAIMER**

Milestone AV Technologies and its affiliated corporations and subsidiaries (collectively “Milestone”), intend to make this manual accurate and complete. However, Milestone makes no claim that the information contained herein covers all details, conditions or variations, nor does it provide for every possible contingency in connection with the installation or use of this product. The information contained in this document is subject to change without notice or obligation of any kind. Milestone makes no representation of warranty, expressed or implied, regarding the information contained herein. Milestone assumes no responsibility for accuracy, completeness or sufficiency of the information contained in this document.

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**! IMPORTANT SAFETY INSTRUCTIONS**

**! WARNING:** A WARNING alerts you to the possibility of serious injury or death if you do not follow the instructions.

**! CAUTION:** A CAUTION alerts you to the possibility of damage or destruction of equipment if you do not follow the corresponding instructions.

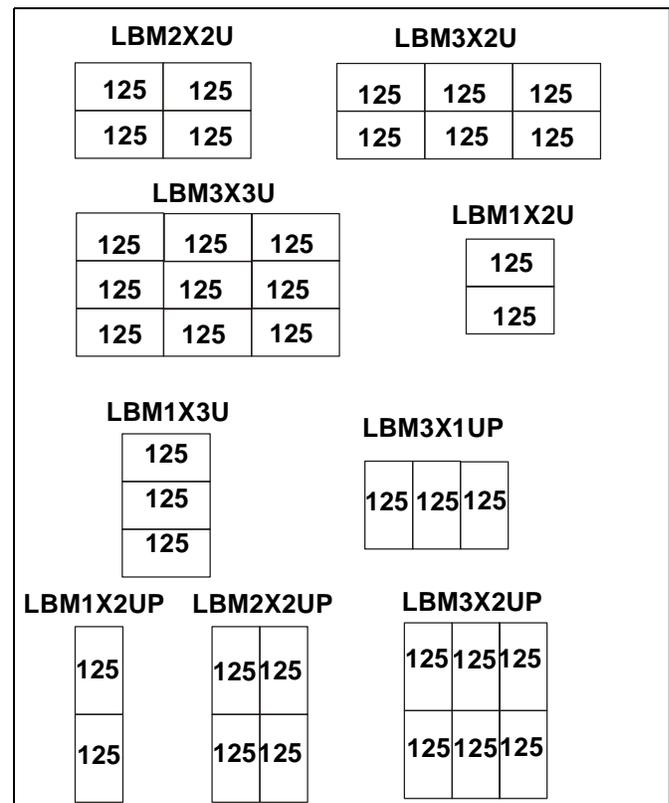
**! WARNING:** Failure to read, thoroughly understand, and follow all instructions can result in serious personal injury, damage to equipment, or voiding of factory warranty! It is the installer’s responsibility to make sure all components are properly assembled and installed using the instructions provided.

**! WARNING:** Failure to provide adequate structural strength for this component can result in serious personal injury or damage to equipment! It is the installer’s responsibility to make sure the structure to which this component is attached can support five times the combined weight of all equipment. Reinforce the structure as required before installing the component.

**! WARNING:** Do NOT stack multiple accessories on the same display wall! Do NOT connect wall add-on accessories to LBM3X3U, LBM3X2U, LBM2X2U, LBM1X2U and LBM1X3U that are already three display high. Display mounts may NOT be stacked higher than three displays high on non-portrait models! Portrait versions - LBM3X2UP, LBM1X2UP, LBM2X2UP AND LBM3X1UP - may NOT be stacked higher than two displays high!

**! WARNING:** Exceeding the weight capacity can result in serious personal injury or damage to equipment! It is the installer’s responsibility to make sure the combined weight of each display and attached accessories mounted to the LBM mount does not exceed the limits listed in table.

MODEL	Max Weight Allowed for EACH Display	Max Weight Capacity of Mounting System
LBM2X2U	125 lbs (56.7 kg)	500 lbs (226.8 kg)
LBM3X2U	125 lbs (56.7 kg)	750 lbs (340.2 kg)
LBM3X3U	125 lbs (56.7 kg)	1125 lbs (510.3 kg)
LBM1X2U	125 lbs (56.7 kg)	250 lbs (113.4 kg)
LBM1X3U	125 lbs (56.7 kg)	375 lbs (170.1 kg)
LBM1X2UP	125 lbs (56.7 kg)	250 lbs (113.4 kg)
LBM3X1UP	125 lbs (56.7 kg)	375 lbs (170.1 kg)
LBM2X2UP	125 lbs (56.7 kg)	500 lbs (226.8 kg)
LBM3X2UP	125 lbs (56.7 kg)	750 lbs (340.2 kg)

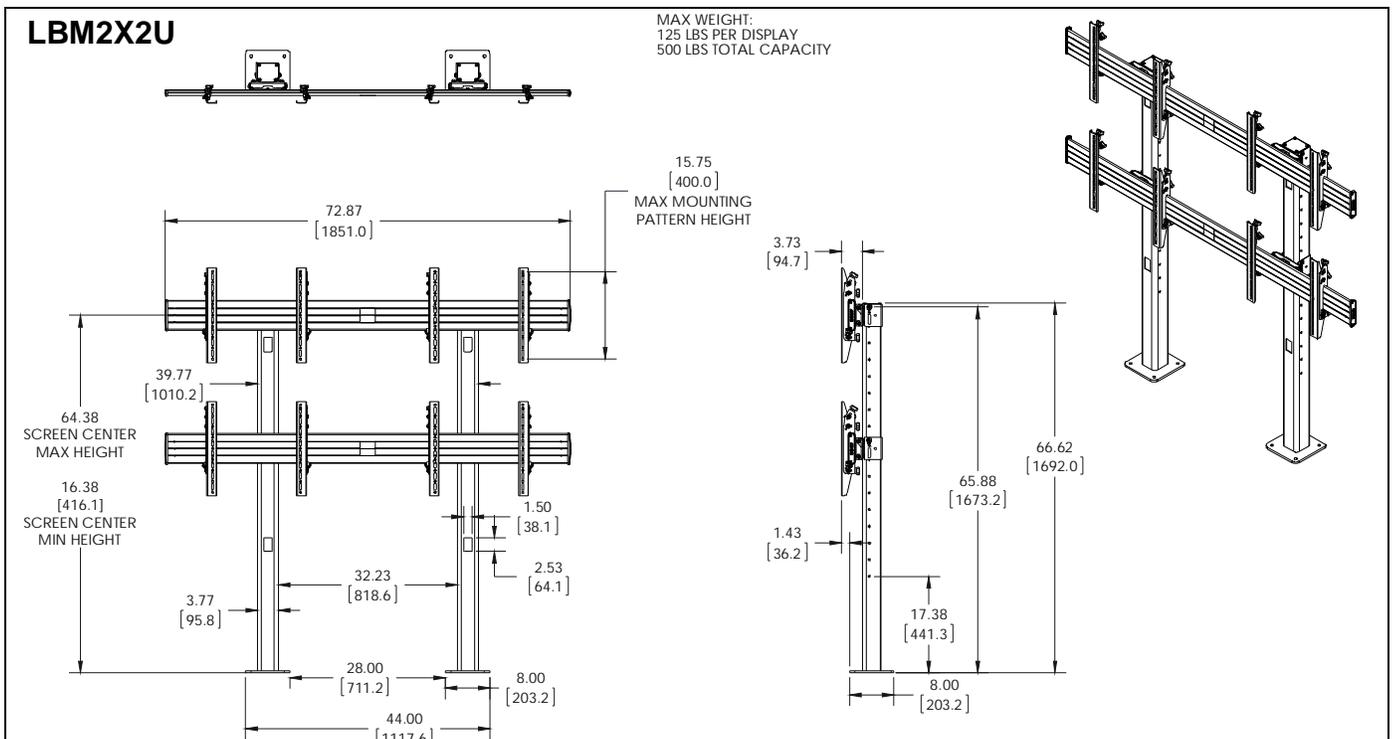


**NOTE:** The UL Listed LBM Series video walls may be used with the following Listed video wall extension accessories:

MODEL	Models of Associated Listed Accessories
LBM2X2U	Width Extension: FCAX20, FCAX14, FCAX08 Height Extension: FCA2X1U, FCABX18, FCABX36
LBM3X2U	Width Extension: FCAX20, FCAX14, FCAX08 Height Extension: FCA3X1U, FCABX18, FCABX36
LBM3X3U	Width Extension: FCAX20, FCAX14, FCAX08 Height Extension: FCABX36*
LBM1X2U	Width Extension: none Height Extension: FCABX18, FCABX36
LBM1X3U	Width Extension: none Height Extension: FCABX36*
LBM1X2UP	Width Extension: none Height Extension: FCABX36*
LBM3X1UP	Width Extension: FCAX20, FCAX14, FCAX08 Height Extension: FCA3X1UP, FCABX18, FCABX36
LBM2X2UP	Width Extension: FCAX20, FCAX14, FCAX08 Height Extension: FCABX36*
LBM3X2UP	Width Extension: FCAX20, FCAX14, FCAX08 Height Extension: FCABX36*

\*FCABX36 will be used in place of existing height extension.

**DIMENSIONS**



**WARNING:** Do NOT install LBM Series mounts to any surface other than concrete! Concrete flooring must be at least 4" in thickness and NOT be covered with any other type of flooring material. Concrete anchors must be installed directly into concrete surface.

**WARNING:** Use this mounting system only for its intended use as described in these instructions. Do not use attachments not recommended by the manufacturer.

Never operate this mounting system if it is damaged. Return the mounting system to a service center for examination and repair.

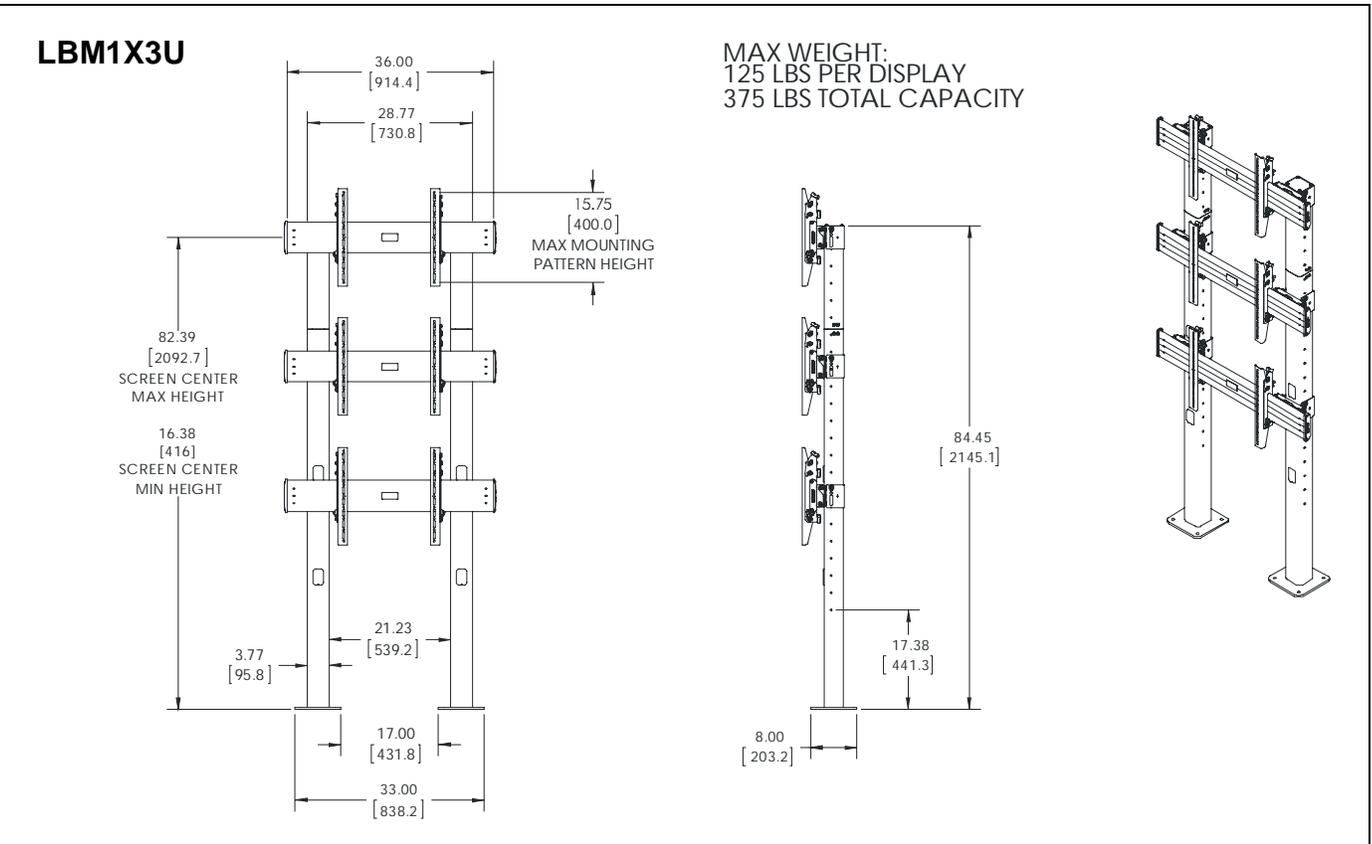
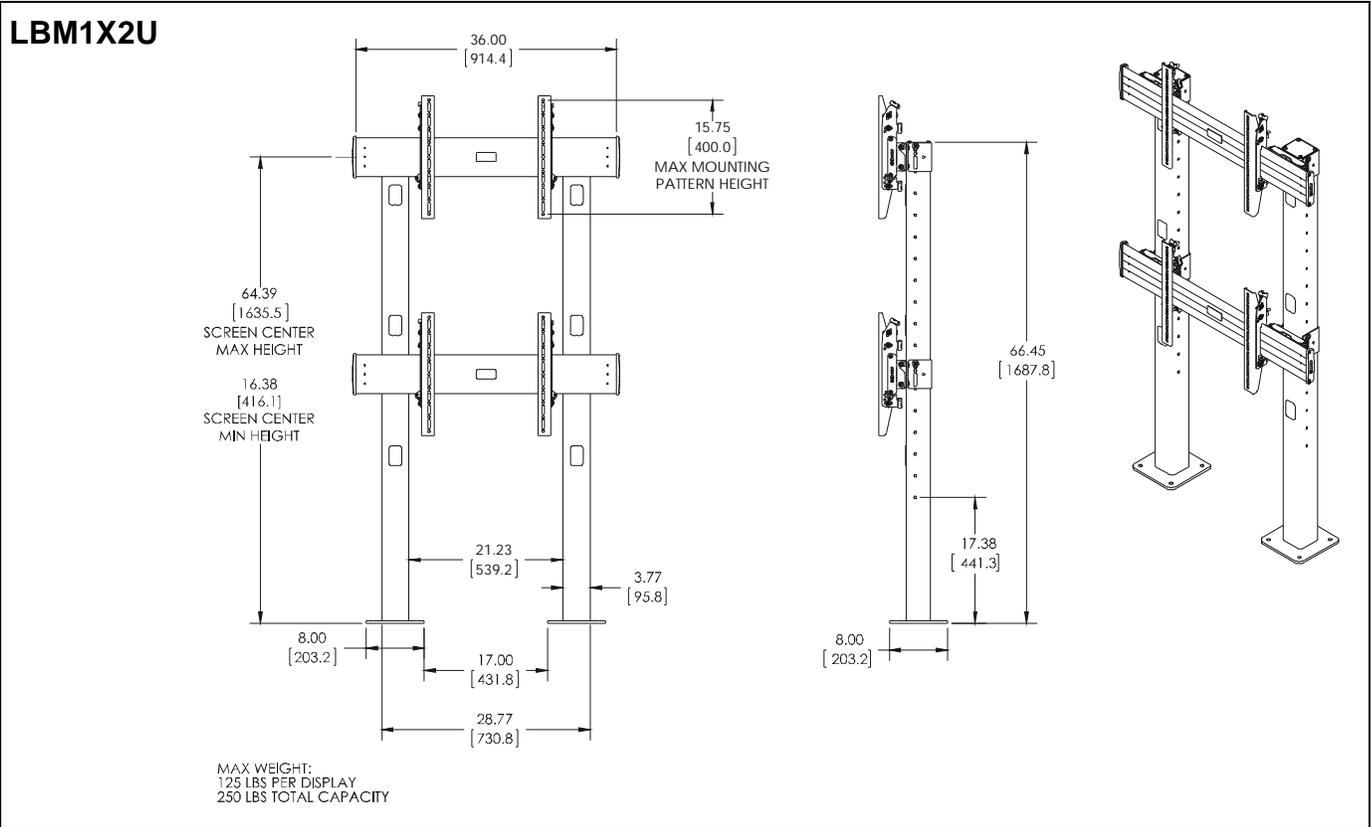
**NOTE:** Refer to UL Listed accessories manuals for installation instructions.

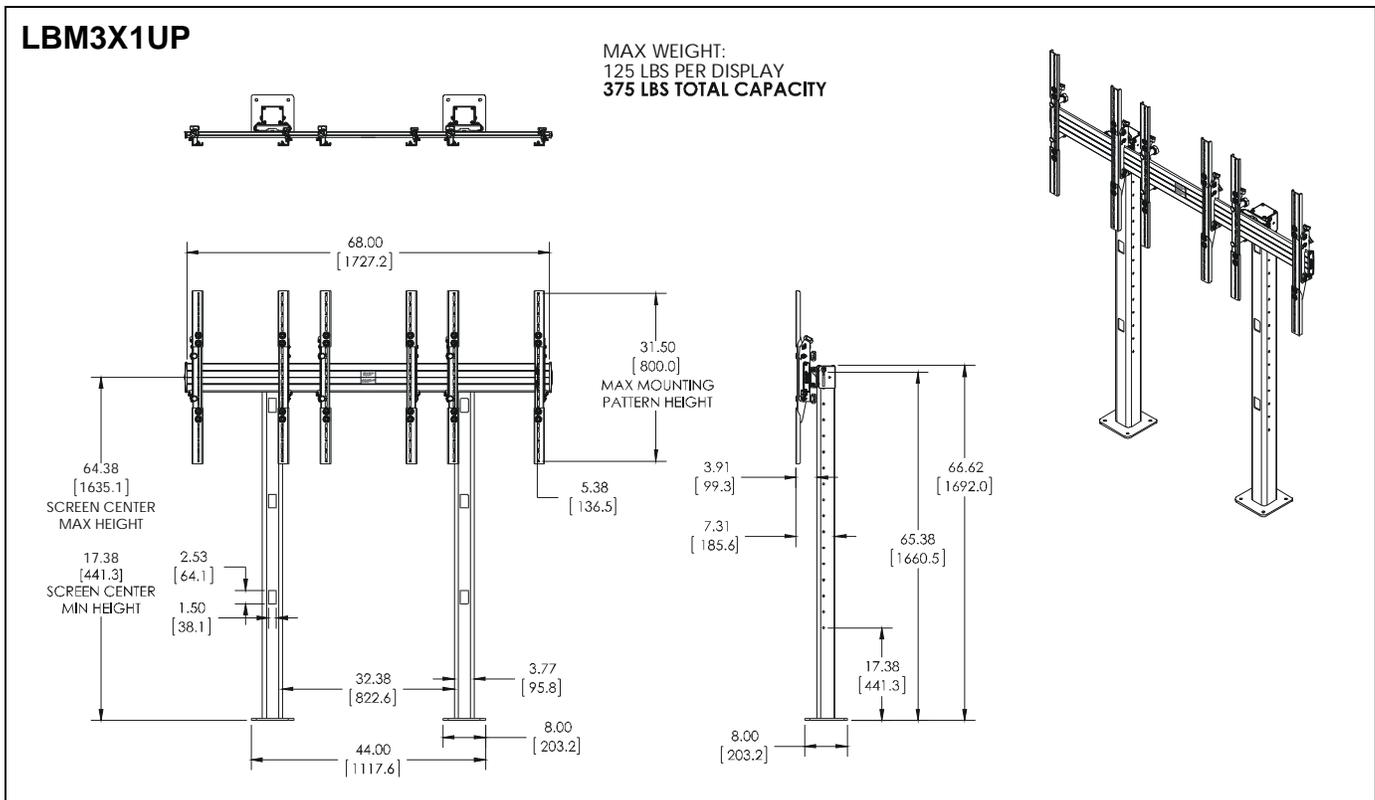
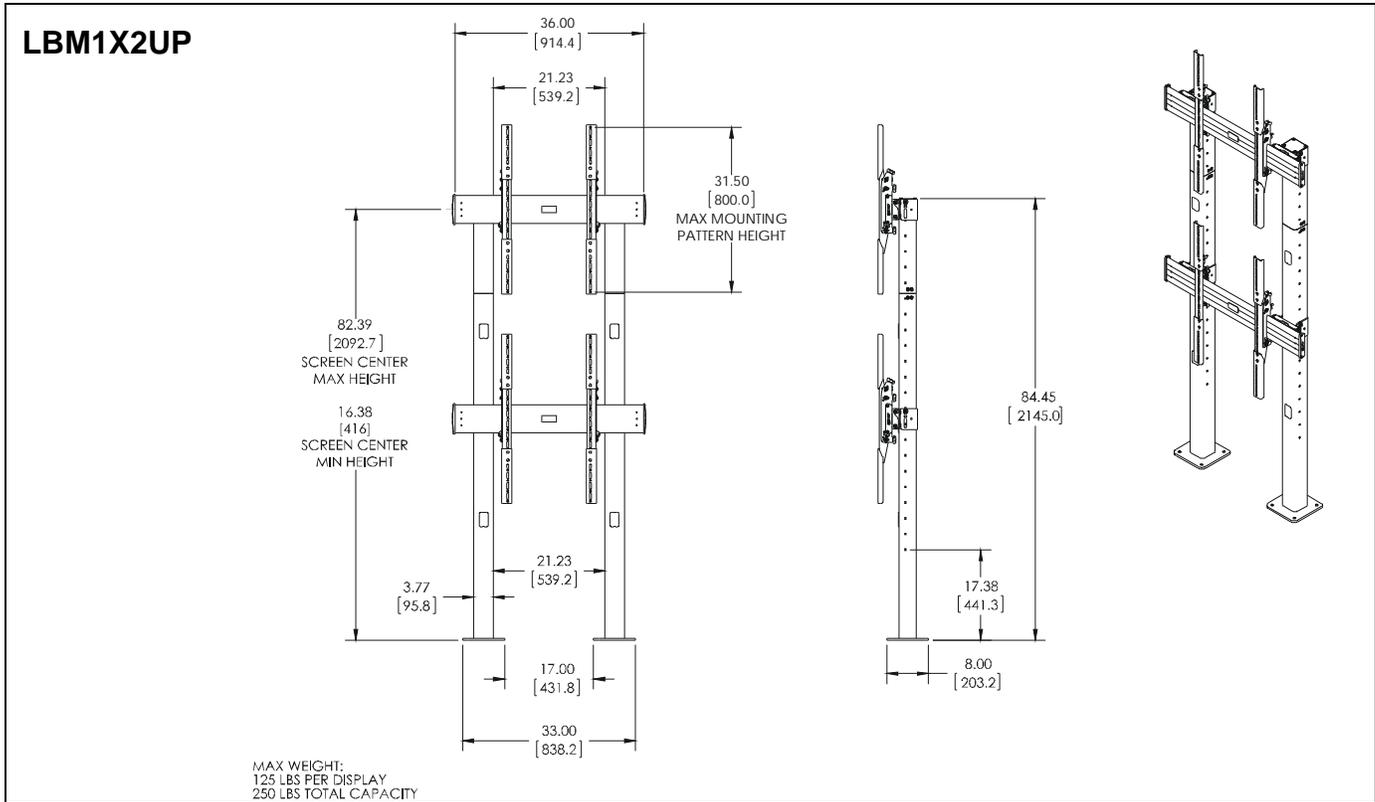
**NOTE:** The LBM Series video walls have no user serviceable parts.

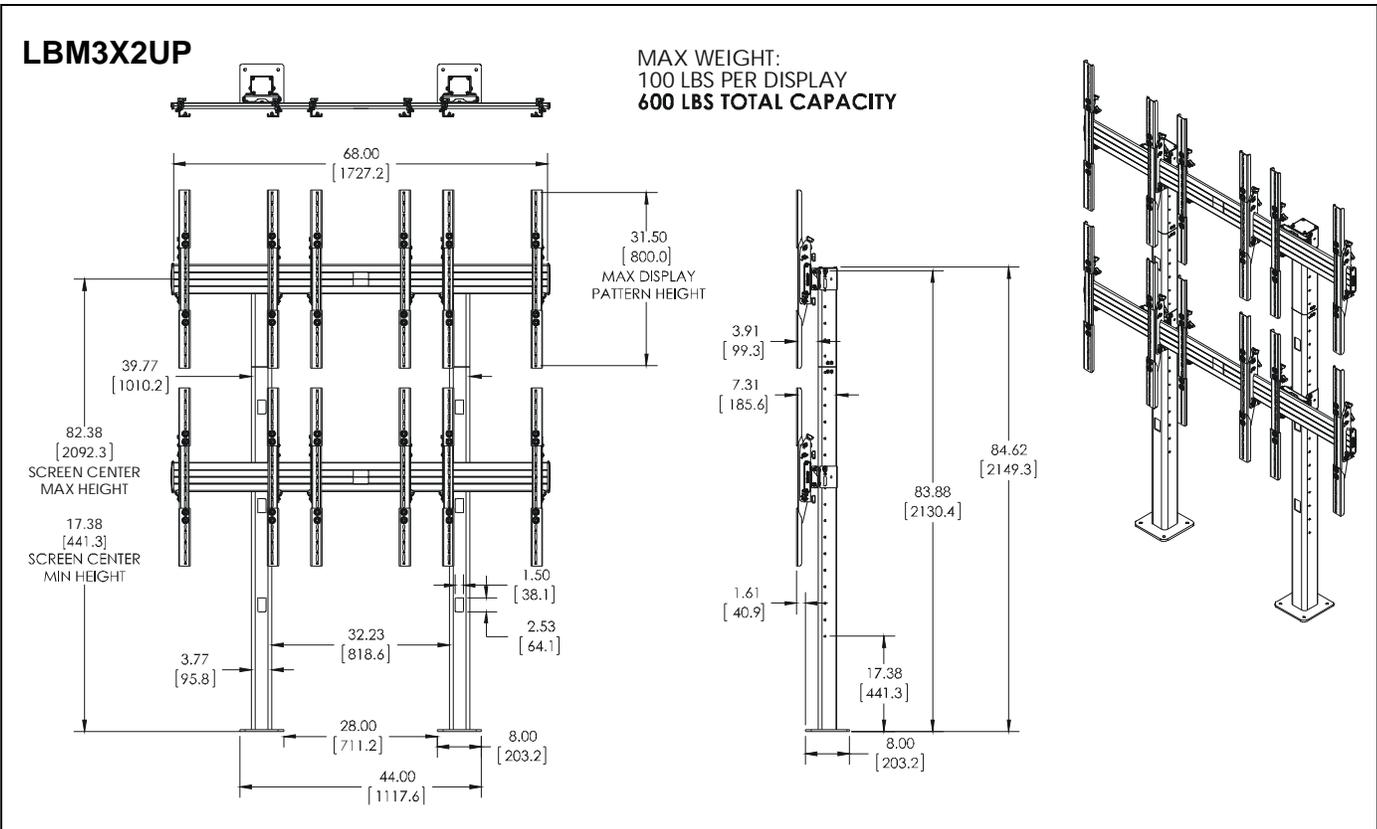
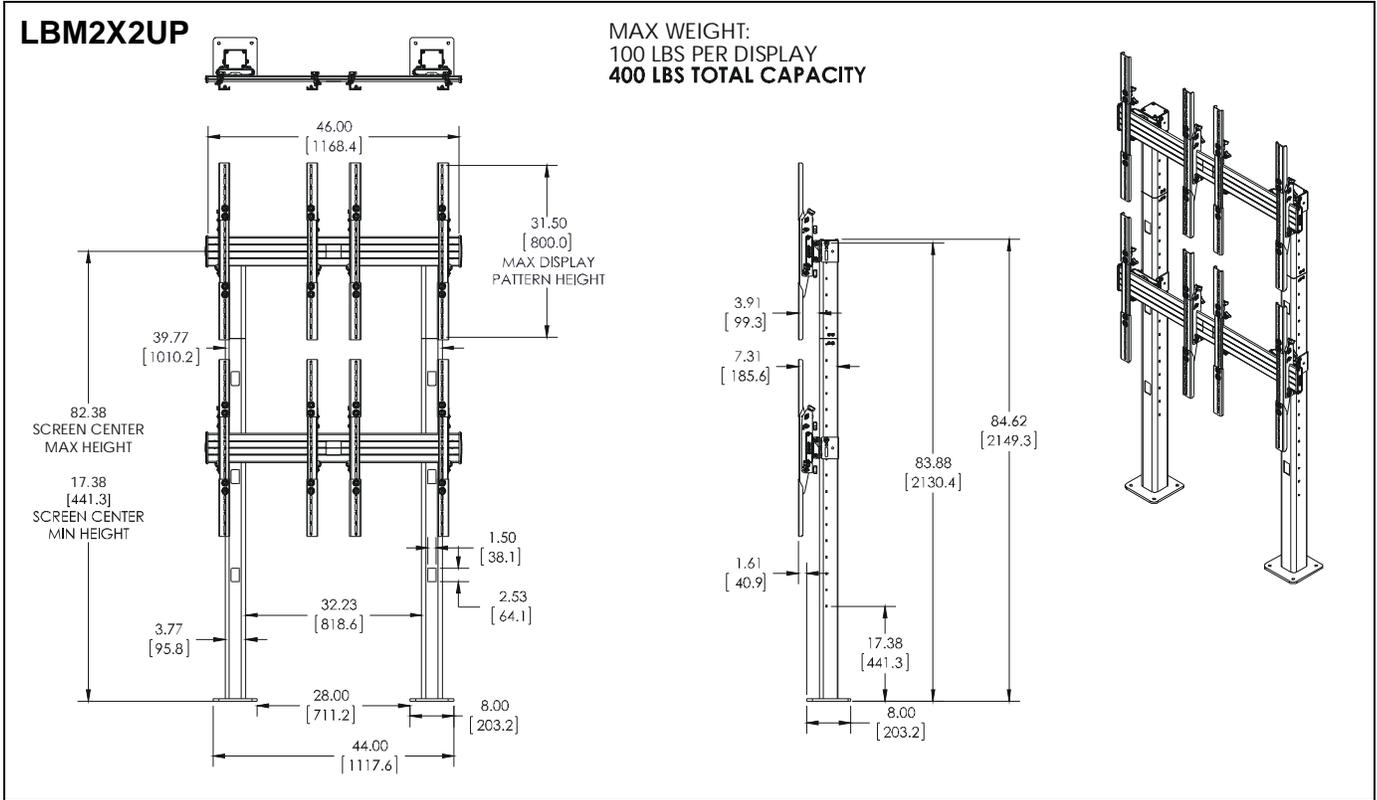
**WARNING:** Do not use this product outdoors.

**--SAVE THESE INSTRUCTIONS--**





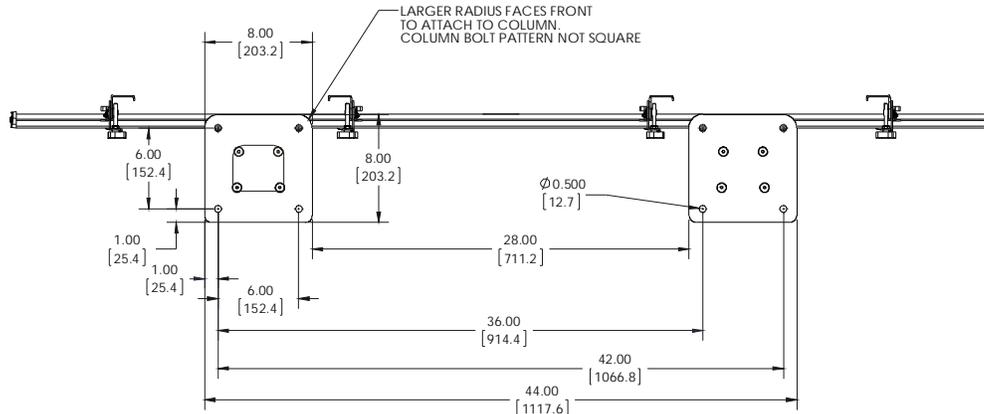




**Bolt Down Dimensions**

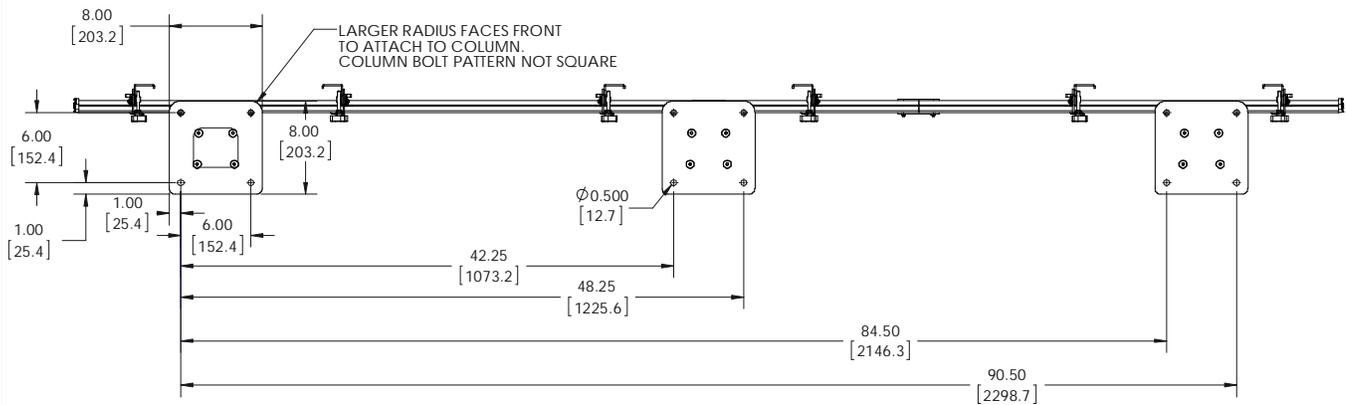
**LBM2X2U/LBM3X1UP  
LBM2X2UP/LBM3X2UP**

**BOTTOM VIEW  
FOR BOLT DOWN INSTALLATION**



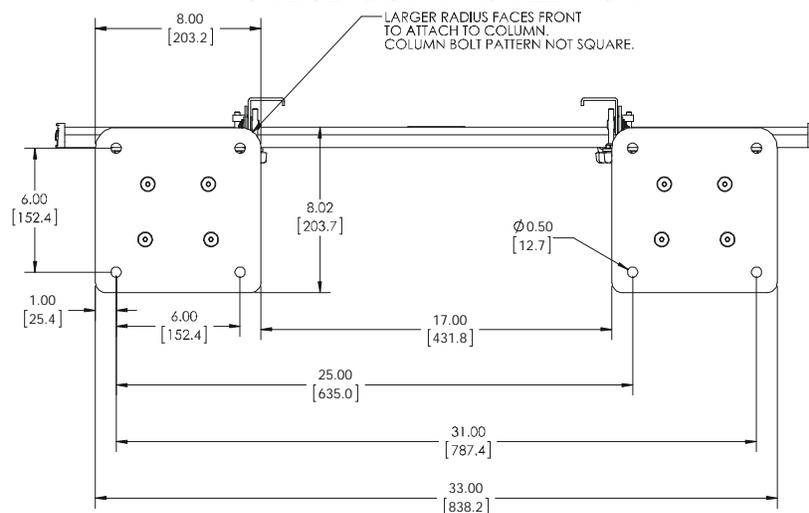
**LBM3X2U/LBM3X3U**

**BOTTOM VIEW  
FOR BOLT DOWN INSTALLATION**

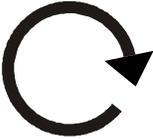
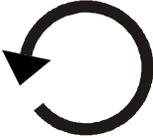


**LBM1X2U/LBM1X3U/LBM1X2UP**

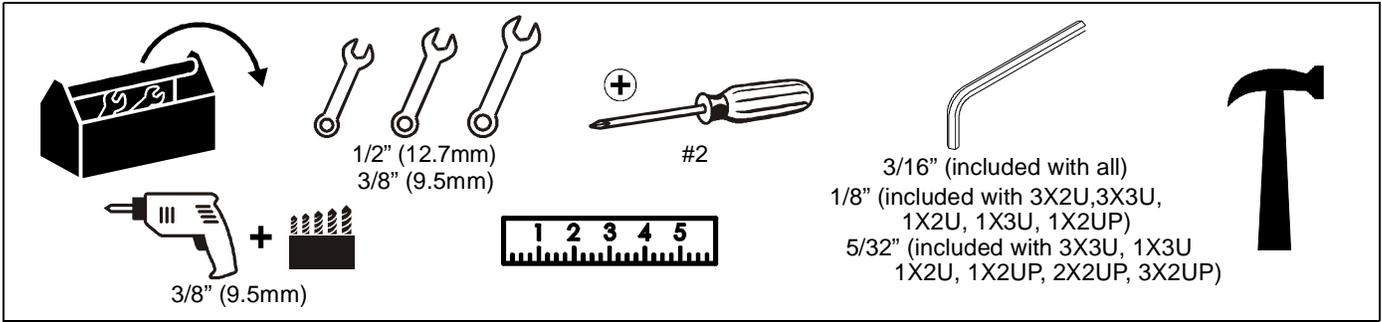
**BOTTOM VIEW  
FOR BOLT DOWN INSTALLATION**



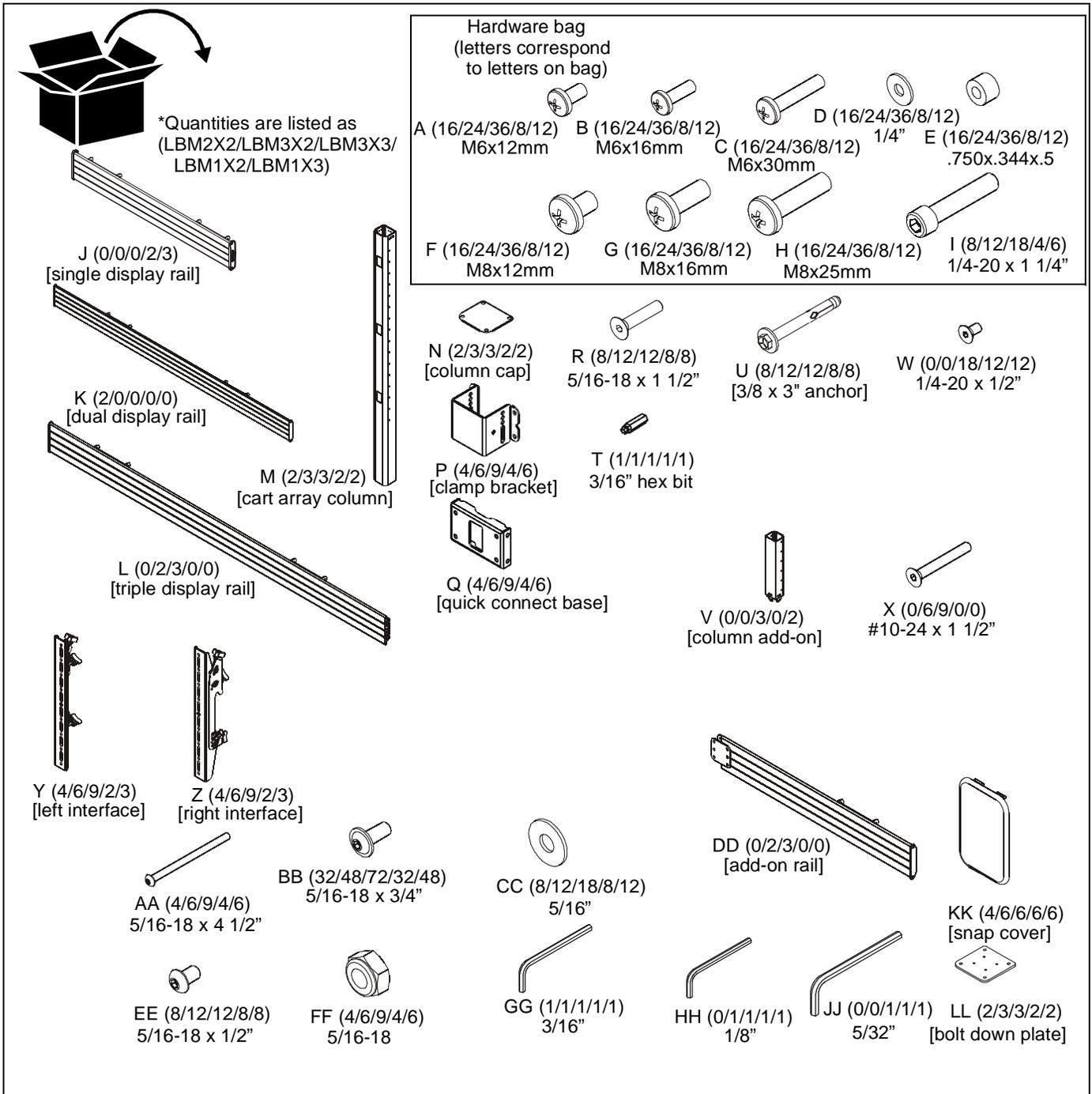
**LEGEND**

	<p><b>Tighten Fastener</b></p> <p>Apretar elemento de fijación</p> <p>Befestigungsteil festziehen</p> <p>Apertar fixador</p> <p>Serrare il fissaggio</p> <p>Bevestiging vastdraaien</p> <p>Serrez les fixations</p>		<p><b>Pencil Mark</b></p> <p>Marcar con lápiz</p> <p>Stiftmarkierung</p> <p>Marcar com lápis</p> <p>Segno a matita</p> <p>Potloodmerkten</p> <p>Marquage au crayon</p>
	<p><b>Loosen Fastener</b></p> <p>Aflojar elemento de fijación</p> <p>Befestigungsteil lösen</p> <p>Desapertar fixador</p> <p>Allentare il fissaggio</p> <p>Bevestiging losdraaien</p> <p>Desserrez les fixations</p>		<p><b>Drill Hole</b></p> <p>Perforar</p> <p>Bohrloch</p> <p>Fazer furo</p> <p>Praticare un foro</p> <p>Gat boren</p> <p>Percez un trou</p>
	<p><b>Phillips Screwdriver</b></p> <p>Destornillador Phillips</p> <p>Kreuzschlitzschraubendreher</p> <p>Chave de fendas Phillips</p> <p>Cacciavite a stella</p> <p>Kruiskopschroevendraaier</p> <p>Tournevis à pointe cruciforme</p>		<p><b>Adjust</b></p> <p>Ajustar</p> <p>Einstellen</p> <p>Ajustar</p> <p>Regolare</p> <p>Afstellen</p> <p>Ajuster</p>
	<p><b>Open-Ended Wrench</b></p> <p>Llave de boca</p> <p>Gabelschlüssel</p> <p>Chave de bocas</p> <p>Chiave a punte aperte</p> <p>Steeksleutel</p> <p>Clé à fourche</p>		<p><b>Remove</b></p> <p>Quitar</p> <p>Entfernen</p> <p>Remover</p> <p>Rimuovere</p> <p>Verwijderen</p> <p>Retirez</p>
	<p><b>By Hand</b></p> <p>A mano</p> <p>Von Hand</p> <p>Com a mão</p> <p>A mano</p> <p>Met de hand</p> <p>À la main</p>		<p><b>Optional</b></p> <p>Opcional</p> <p>Optional</p> <p>Opcional</p> <p>Opzionale</p> <p>Optie</p> <p>En option</p>
	<p><b>Hex-Head Wrench</b></p> <p>Llave de cabeza hexagonal</p> <p>Sechskantschlüssel</p> <p>Chave de cabeça sextavada</p> <p>Chiave esagonale</p> <p>Zeskantsleutel</p> <p>Clé à tête hexagonale</p>		<p><b>Security Wrench</b></p> <p>Llave de seguridad</p> <p>Sicherheitsschlüssel</p> <p>Chave de segurança</p> <p>Chiave di sicurezza</p> <p>Veiligheidsleutel</p> <p>Clé de sécurité</p>

**TOOLS REQUIRED FOR INSTALLATION**



**PARTS -Non-portrait Models- LBM2X2U/LBM3X2U/LBM3X3U/LBM1X2U/LBM1X3U (Portrait next page)**



**Parts - Portrait Models - LBM1X2UP/LBM3X1UP/LBM2X2UP/LBM3X2UP**



\*Quantities are listed as (LBM1X2UP/LBM3X1UP/LBM2X2UP/LBM3X2UP)

**J (2/0/0/0)**  
[single portrait display rail]

**K (0/1/2/2)**  
[portrait display rail]

**M (2/2/2/2)**  
[cart array column]

**L (0/0/0/0)**  
[triple display rail]

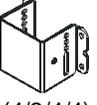
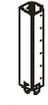
**Y (2/3/4/6)**  
[left interface]

**Z (2/3/4/6)**  
[right interface]

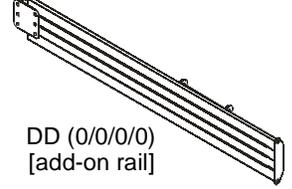
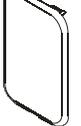
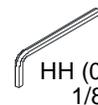
Hardware bag  
(letters correspond to letters on bag)

 <b>A (8/12/16/24)</b> M6x12mm	 <b>B (8/12/16/24)</b> M6x16mm	 <b>C (8/12/16/24)</b> M6x30mm	 <b>D (8/12/16/24)</b> 1/4"	 <b>E (8/12/16/24)</b> .750x.344x.5
 <b>F (8/12/16/24)</b> M8x12mm	 <b>G (8/12/16/24)</b> M8x16mm	 <b>H (8/12/16/24)</b> M8x25mm	 <b>I (4/6/8/12)</b> 1/4-20 x 1 1/4"	

 <b>N (2/2/2/2)</b> [column cap]	 <b>R (8/8/8/8)</b> 5/16-18 x 1 1/2"	 <b>U (8/8/8/8)</b> [3/8 x 3" anchor]	 <b>W (12/0/12/12)</b> 1/4-20 x 1/2"
 <b>P (4/2/4/4)</b> [clamp bracket]	 <b>T (1/1/1/1)</b> 3/16" hex bit		
 <b>Q (4/2/4/4)</b> [quick connect base]	 <b>V (2/0/2/2)</b> [column add-on]	 <b>X (0/0/0/0)</b> #10-24 x 1 1/2"	

 <b>AA (2/2/4/4)</b> 5/16-18 x 4 1/2"	 <b>BB (16/16/32/32)</b> 5/16-18 x 3/4"	 <b>CC (4/4/8/8)</b> 5/16"	 <b>DD (0/0/0/0)</b> [add-on rail]	 <b>KK (6/4/4/4)</b> [snap cover]
 <b>EE (8/8/8)</b> 5/16-18 x 1/2"	 <b>FF (2/4/4)</b> 5/16-18"	 <b>GG (1/1/1)</b> 3/16"	 <b>HH (0/0/0)</b> 1/8"	 <b>JJ (0/1/1)</b> 5/32"
		 <b>LL (2/2/2)</b> [bolt down plate]		

## Assembly And Installation

### Bolt Down Columns to Floor

1. Lay array columns (M) down on a flat surface.
2. Use four 5/16-18 x 1 1/2" flat head cap screws (R) to connect each bolt down plate (LL) to each columns (M). (See Figure 1)

**IMPORTANT !** : Inside bolt pattern is NOT square!  
Corners of front of plate have larger radii than corners on back of plate. Plate must be properly aligned in order to attach to column.

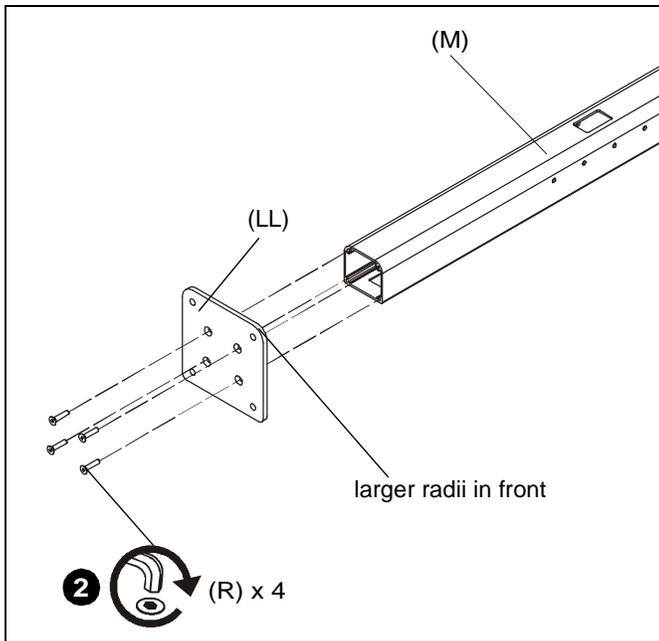


Figure 1

3. Using bolt down plates (LL) as templates, mark four holes at outside hole locations for each column. (See Figure 2)

**WARNING**: Do NOT install LBM Series mounts to any surface other than concrete! Concrete flooring must be at least 4" in thickness and NOT be covered with any other type of flooring material. Concrete anchors must be installed directly into concrete surface.

**IMPORTANT !** : See Bolt Down Dimensions on page 6 to measure distances between each bolt down plate.

**IMPORTANT !** : Make sure columns will be installed far enough away from any walls so that displays may be installed.

4. Using a 3/8" drill bit, drill a hole 3 1/2" in depth at each marked location. (See Figure 2) and (See Figure 3)
5. Blow each hole clean of any concrete debris with a large air hose or compressed air in a can. (See Figure 3)

**IMPORTANT !** : Do NOT modify the anchors or advance the bolt in the anchors prior to installation!

6. Place each bolt down plate (LL) on top of drilled holes making sure holes on plate are aligned with drilled holes. (See Figure 3)

7. Use a hammer to drive anchors (U) through plate holes into the drilled holes until the bolt head is firmly seated against the plate. (See Figure 2) and (See Figure 3)
8. Tighten each anchor by turning the head three to four turns past finger tight. (See Figure 3)

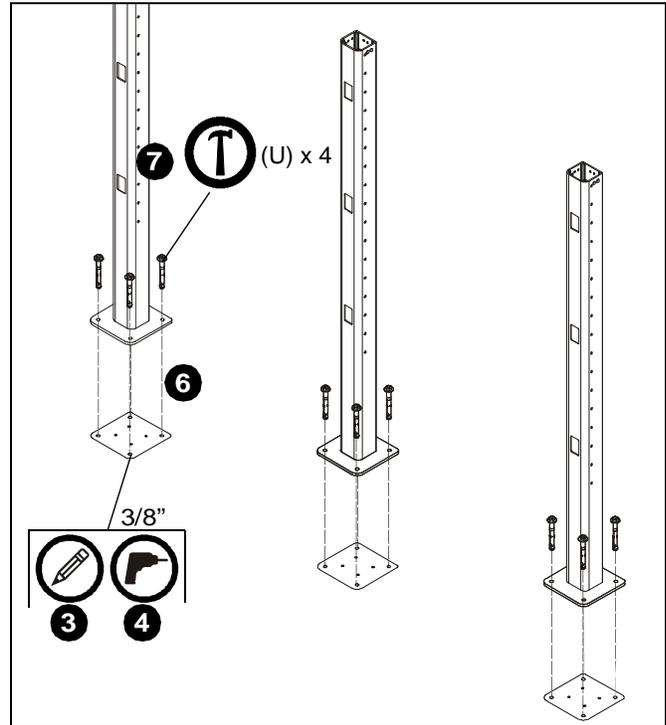


Figure 2

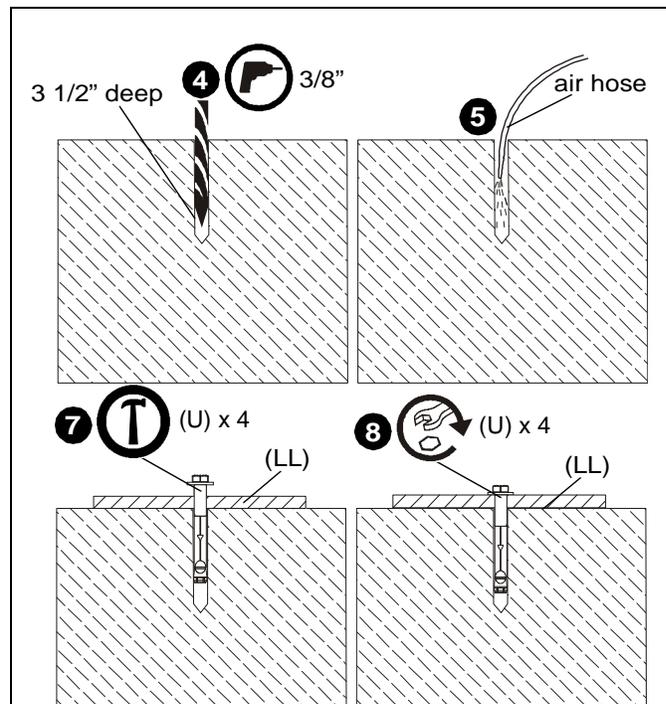


Figure 3

9. Repeat Steps 4-8 for additional column(s).

**Column Add-On Installation (LBM3X3U/  
LBM1X3U/LBM2X2UP/LBM3X2UP only)**

1. Insert one column add-on (V) to each column (M) making sure holes are lined up on each side. (See Figure 4)
2. Use 5/32" hex key (JJ) and six 1/4-20 x 1/2" flat head cap screws (W) to secure each column add-on (V) to each column (M). (See Figure 4)

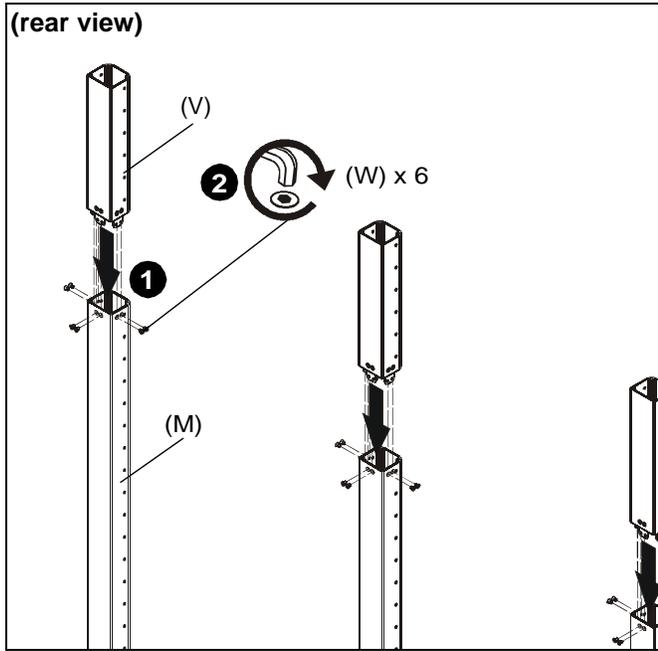


Figure 4

**Rails Installation**

1. Using display dimensions, determine where the center of the top displays will be on the cart.

**IMPORTANT !** : Install all column add-ons (V), if applicable, prior to installing rails to columns.

2. Place clamp brackets (P) on columns in the position of where the center of the top displays will be on the cart with the diamond on the brackets being placed at the exact center location. (See Figure 5)

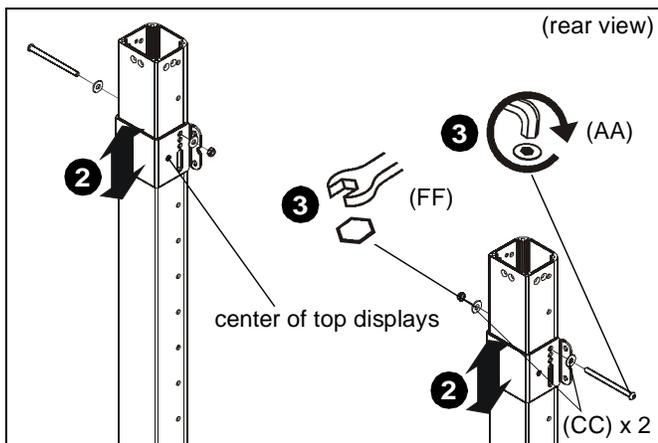


Figure 5

3. Use 5/16-18 x 4 1/2" button head cap screw (AA), two 5/16" washers (CC) and 5/16-18" lock nut (FF) to secure each clamp bracket (P) to column. (See Figure 5)

**NOTE:** Clamp brackets (P) may be flipped in order to use long slots for installation if necessary. (See Figure 6)

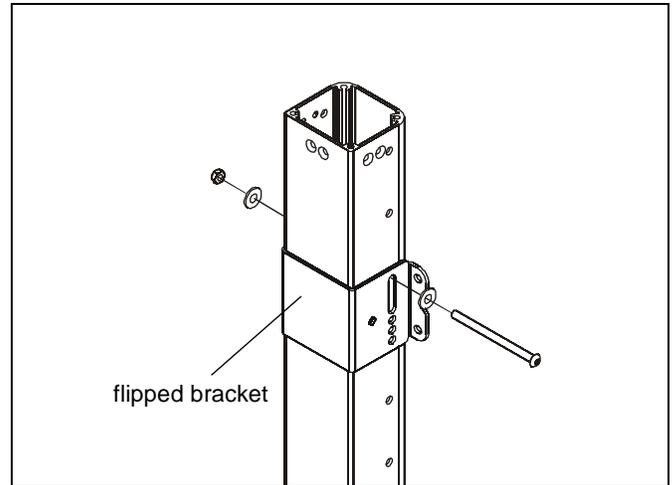


Figure 6

**NOTE:** If installing LBM3X1UP, proceed ahead to Step 6.

4. Measure one screen height down from center point on installed clamp brackets to determine mounting location of lower clamp brackets. (See Figure 7)
5. Use 5/16-18 x 4 1/2" button head cap screw (AA), two 5/16" washers (CC) and 5/16-18" lock nut (FF) to install clamp brackets for lower displays with center diamond one screen height below center diamond of upper installed brackets. (See Figure 7)

**NOTE:** If some clearance is desired in between displays, install lower brackets slightly more than one screen height below upper brackets.

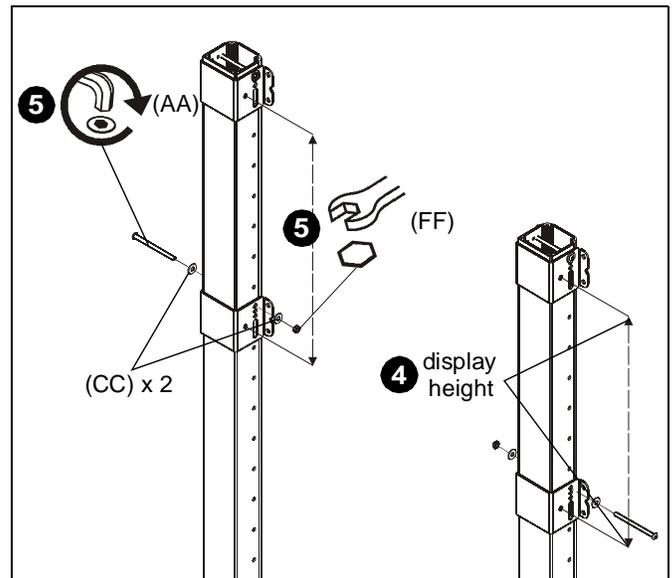


Figure 7

- Use four 5/16-18 x 3/4" button head flange screws (BB) to secure each attached clamp bracket (P) to each quick connect base (Q). (See Figure 8)

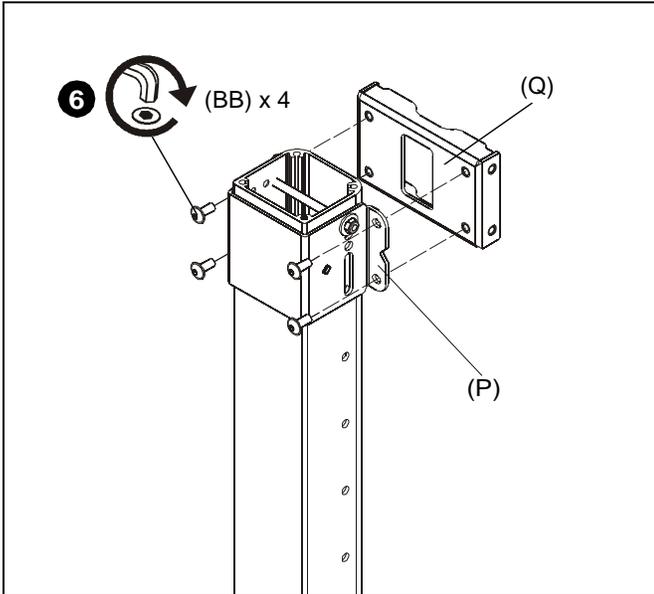


Figure 8

**NOTE:** If rails must be installed over cable management holes on column, cables must be routed prior to installing rails onto quick connect bases. See Cable Management section for details.

- Install two 5/16-18 x 3/4" button head flange screws (BB) into the top holes on each quick connect base (Q). (See Figure 9)

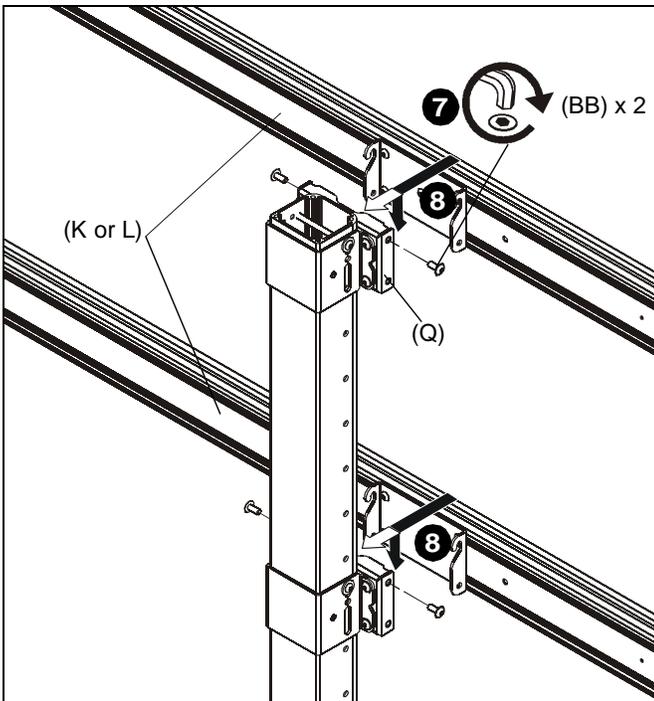


Figure 9

- Hang rails (K or L) into screws installed in previous step to quick connect bases (Q). (See Figure 9)

**IMPORTANT ! :** If installing the triple display rail (L), install rail to left and center columns so that add-on rail can be installed to right column. See Add-On Rail Installation section for details.

- Install two 5/16-18 x 3/4" button head flange screws (BB) into the lower holes on each quick connect base (Q) to secure rails to quick connect bases. (See Figure 10)
- Tighten all 5/16-18 x 3/4" button head flange screws (BB).

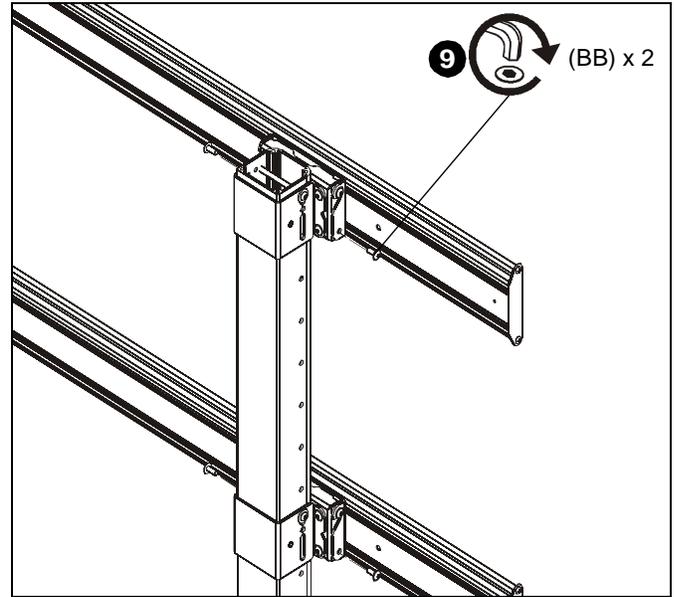


Figure 10

**Add-On Rail Installation (LBM3X2U/LBM3X3U/LBM1X3U/LBM1X2UP/LBM2X2UP/LBM3X2UP only)**

- Install add-on rails (DD) to right column following instructions in Rails Installation section.
- Use three #10-24 x 1 1/2" flat head cap screws (X) to attach each add-on rail (DD) to display rail (L). (See Figure 11)

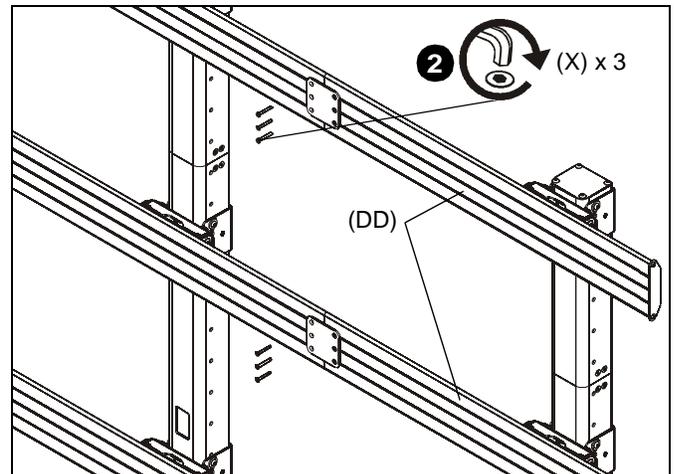


Figure 11

## Display Installation

1. Place display face down on a soft, non-abrasive surface.

**NOTE:** For best access, route display cables through columns prior to display installation. See Cable Management section for details.



**CAUTION:** Using screws of improper diameter may damage your display! Proper screws will easily thread into display mounting holes.

2. Select screw *diameter* by examining hardware (A-C and F-H) (6mm or 8mm) and comparing with mounting holes on display. (See Figure 12) or (See Figure 13)
3. Select spacers:
  - If mounting holes are not recessed and interface brackets (Y and Z) can lay flat against display, then no spacers are required.
  - If mounting holes are recessed, or if protrusions prevent brackets (Y and Z) from laying flat, then spacers (E) must be used.



**CAUTION:** Using screws of improper length may damage your display! Proper screws will have adequate thread engagement without contacting bottom of display mounting holes.

4. Select screw *length*: (See Figure 12) and (See Figure 13)
  - Using your hand, insert **SHORTEST** length screw of selected diameter (A or F) through 1/4" washer (D), bracket (Y or Z), selected spacer (E, if required), into display mounting hole. Do **NOT** thread screw into hole at this time.
  - Proper screw length requires base of screw head to protrude above flat washer a *distance equal to or greater than the screw diameter*. If screw length is inadequate, select longer screw. Select *shortest* screw which will protrude the required distance.
5. Use selected screws (A-C or F-H), washers (D) and spacers (E), if necessary, to connect interface brackets (Y and Z) to back of display. Make sure diamond on interface brackets is even with center of display. (See Figure 12)

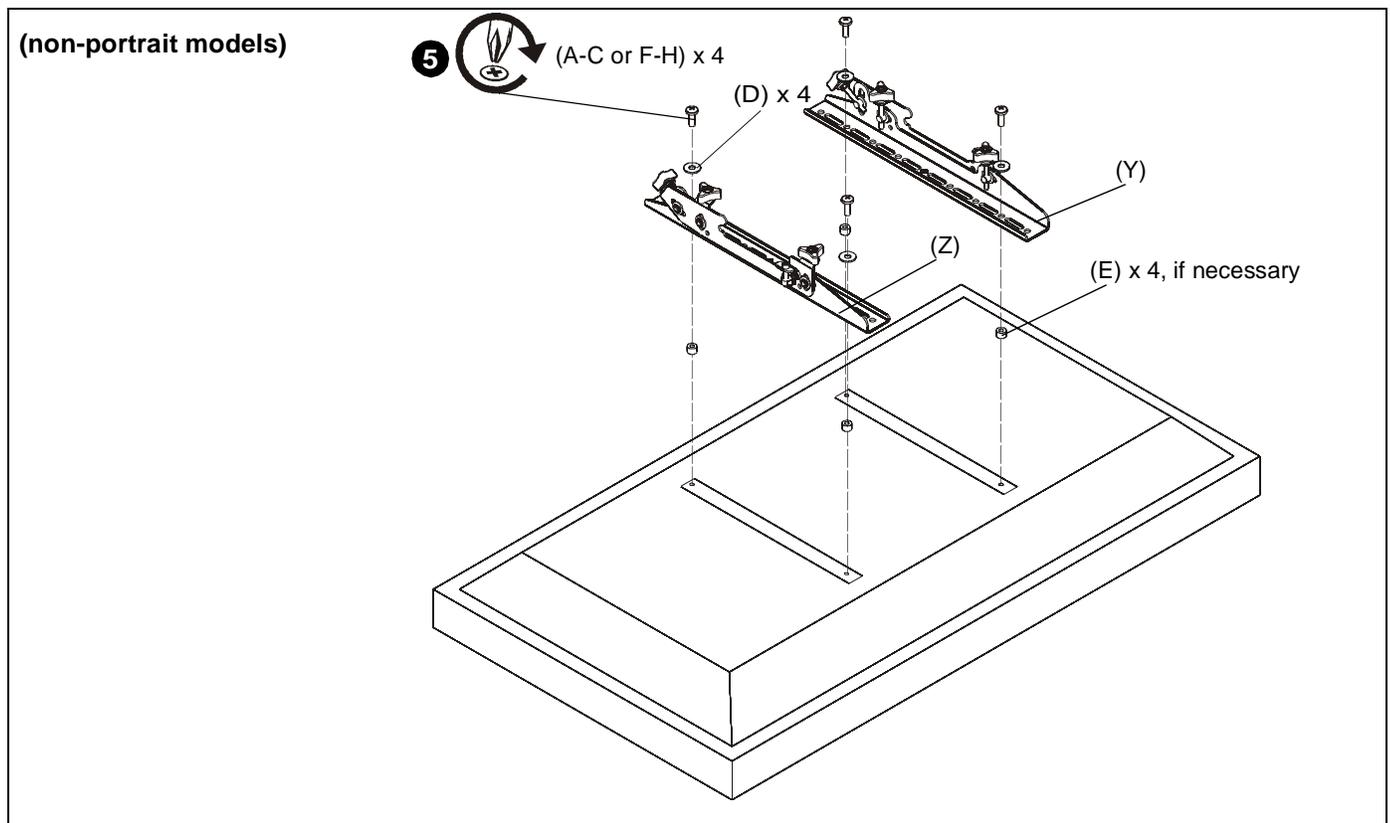


Figure 12

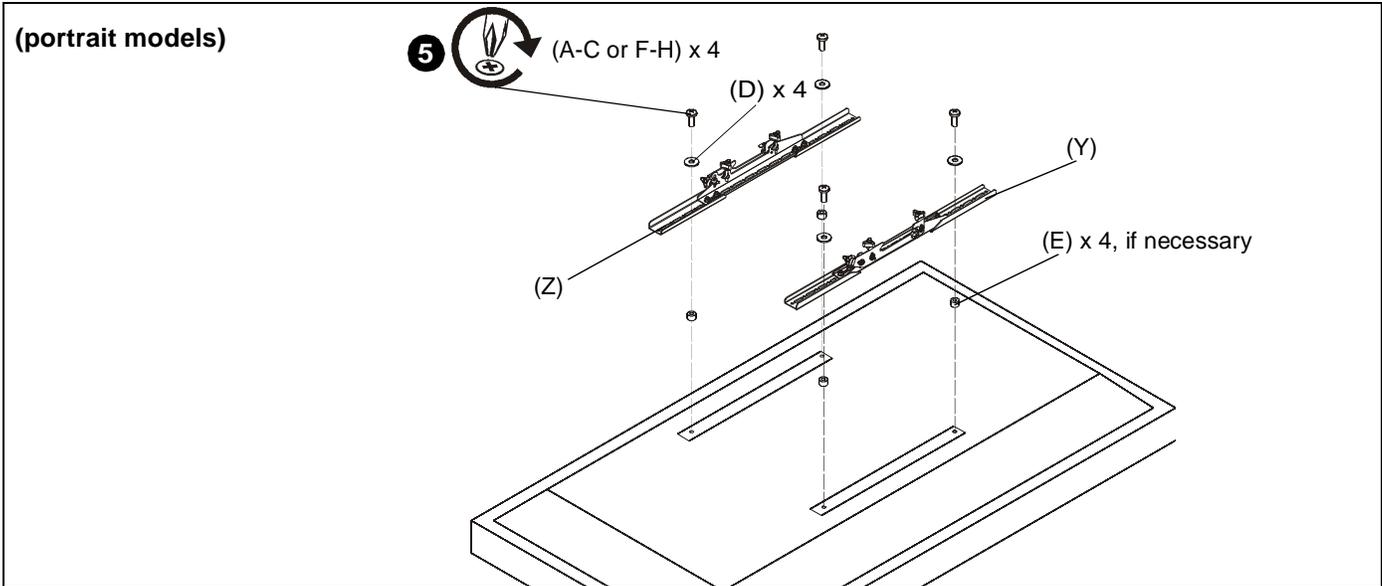
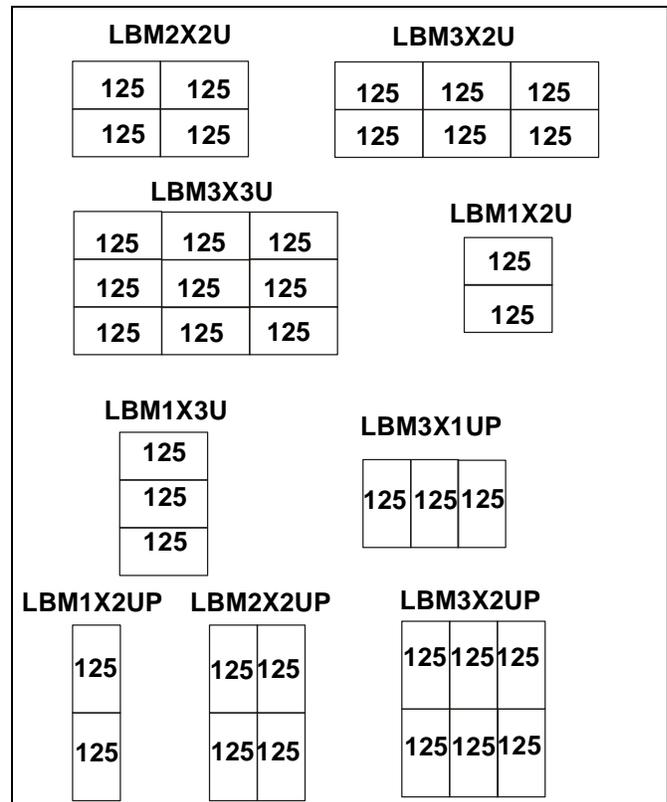


Figure 13

**WARNING:** Exceeding the weight capacity can result in serious personal injury or damage to equipment! It is the installer's responsibility to make sure the combined weight of each display and attached accessories mounted to the LBM mount does not exceed the limits listed below.

MODEL	Max Weight Allowed for <u>EACH</u> Display	Max Weight Capacity of Mounting System
LBM2X2U	125 lbs (56.7 kg)	500 lbs (226.8 kg)
LBM3X2U	125 lbs (56.7 kg)	750 lbs (340.2 kg)
LBM3X3U	125 lbs (56.7 kg)	1125 lbs (510.3 kg)
LBM1X2U	125 lbs (56.7 kg)	250 lbs (113.4 kg)
LBM1X3U	125 lbs (56.7 kg)	375 lbs (170.1 kg)
LBM1X2UP	125 lbs (56.7 kg)	250 lbs (113.4 kg)
LBM3X1UP	125 lbs (56.7 kg)	375 lbs (170.1 kg)
LBM2X2UP	125 lbs (56.7 kg)	500 lbs (226.8 kg)
LBM3X2UP	125 lbs (56.7 kg)	750 lbs (340.2 kg)



6. Starting from the bottom and working up, hang interface brackets (Y and Z) to display rails (K or L). (See Figure 14)
7. Use 1/4-20 x 1 1/4" socket head cap screws (I) to secure interface brackets (Y and Z) to rails for each display. Screws must engage through both holes to be fully secured. (See Figure 14)

**NOTE:** Display positions may need to be adjusted after height and/or plumb adjustments in order to maintain desired alignment.

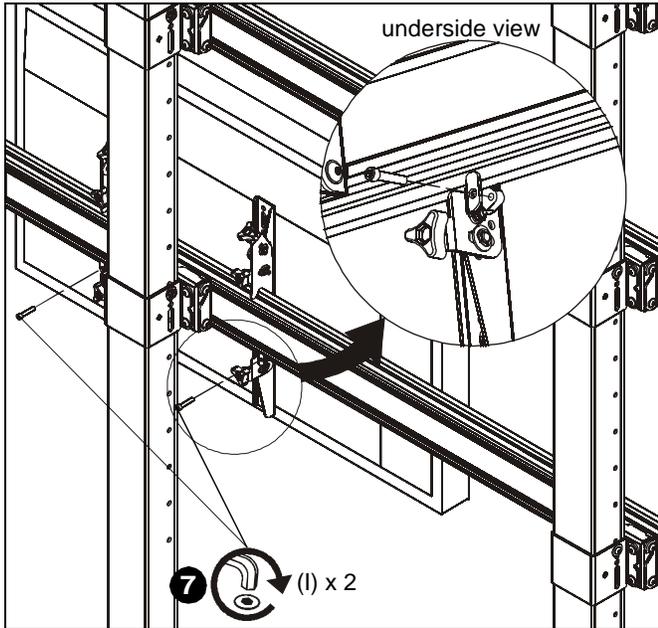


Figure 14

**Column Cap Installation**

**NOTE:** If the top holes on columns will be used for cable management, do NOT install column caps to columns as illustrated below. See Cable Management section for details.

1. Use four 5/16-18 x 1/2" button head cap screws (EE) to install each column cap (N) to each column. (See Figure 15)

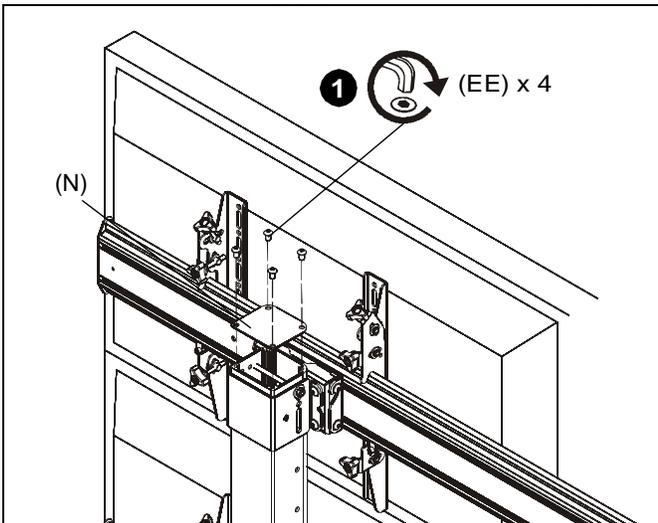


Figure 15

**Adjustments**

**Height Adjustment**

1. Use upper knob on back of interface brackets (Y and Z) to adjust the height of each display. (See Figure 16)

**NOTE:** Adjust both brackets in order to maintain a level mount.

**Plumb Adjustment**

2. Use middle and lower knobs on back of interface brackets (Y and Z) to make plumb adjustments to each display. (See Figure 16)

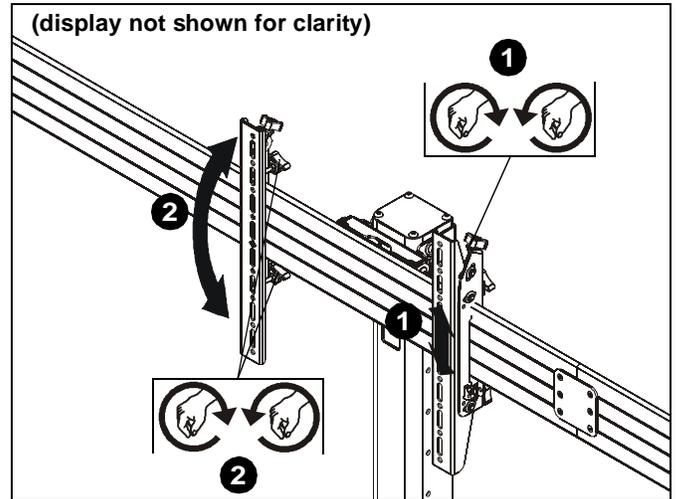


Figure 16

**Cable Management**

1. Route cables from displays through nearest holes on front of columns and out through back cable management hole. (See Figure )

**NOTE:** For best access, route display cables through columns prior to display installation.

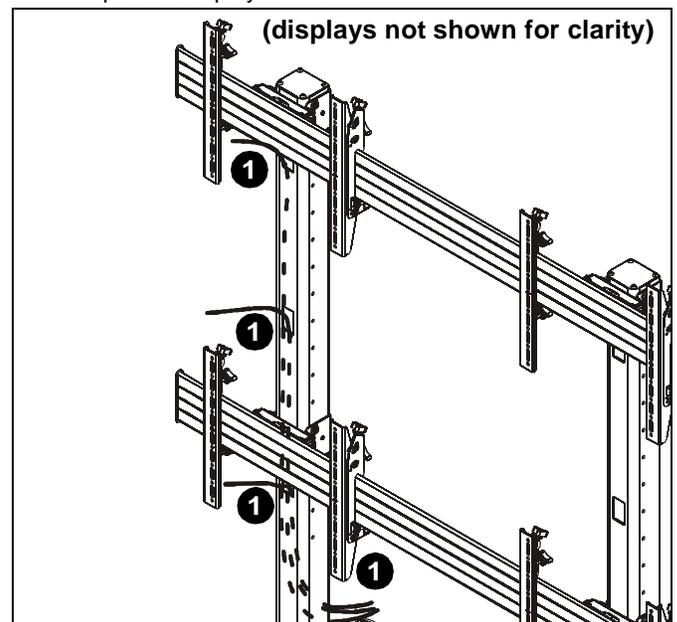
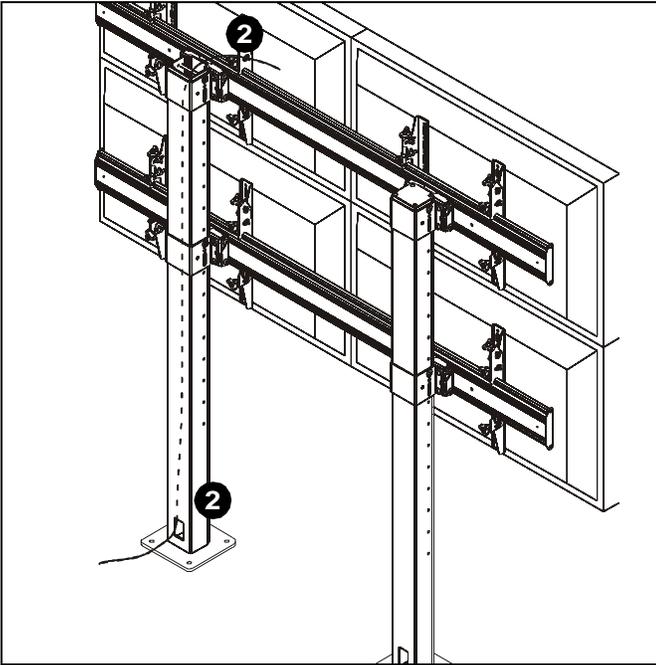


Figure 17

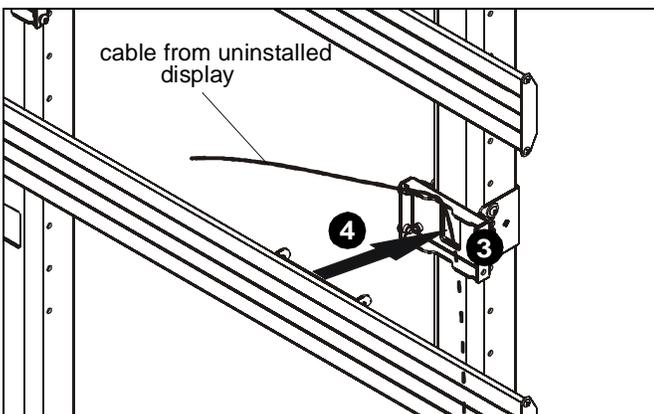
## Additional Cable Management Options

2. Cables may be routed through tops of columns and out through the back cable management hole. (See Figure 18)



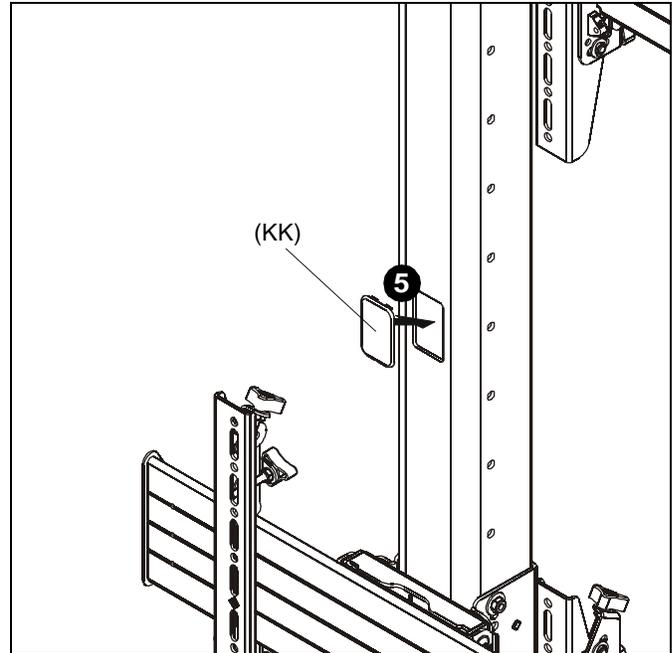
**Figure 18**

3. If rails needed to be installed on top of cable management holes, cables may be routed through quick connect bases (Q) prior to the rails being installed. (See Figure 19)
4. Install rails according to Rails Installation section making sure cable is routed through cable opening on quick connect base (Q). (See Figure 19)



**Figure 19**

5. For any cable management holes that are not used, snap covers (KK) may be used to cover holes as desired. (See Figure 20)



**Figure 20**





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