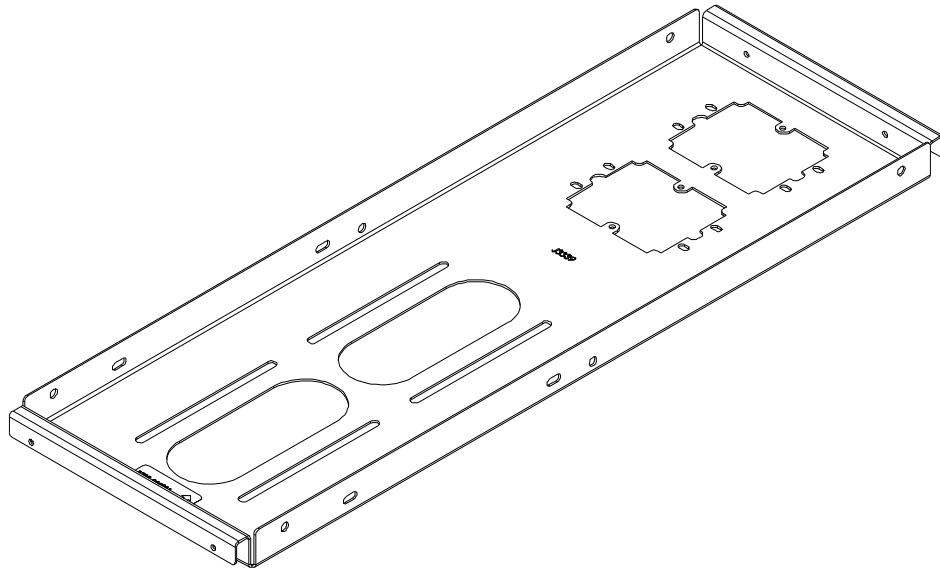


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# INSTALLATION INSTRUCTIONS

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## Above Tile Suspended Ceiling Kit

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## 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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## DEFINITIONS

**MOUNTING SYSTEM:** A MOUNTING SYSTEM is the primary Chief product to which an accessory and/or component is attached.

**ACCESSORY:** AN ACCESSORY is the secondary Chief product which is attached to a primary Chief product, and may have a component attached or setting on it.

**COMPONENT:** A COMPONENT is an audiovisual item designed to be attached or resting on an accessory or mounting system such as a video camera, CPU, screen, display, projector, etc.



**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.



## IMPORTANT SAFETY 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 mounting systems are properly assembled and installed using the instructions provided.



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



**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 all components attached to the CMA440 does not exceed 50 lbs (22.68 kg).

- The weight capacity of the CMA440 may be LIMITED to the lowest weight capacity of any other component located between the CMA440 and the supporting structure!



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



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



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

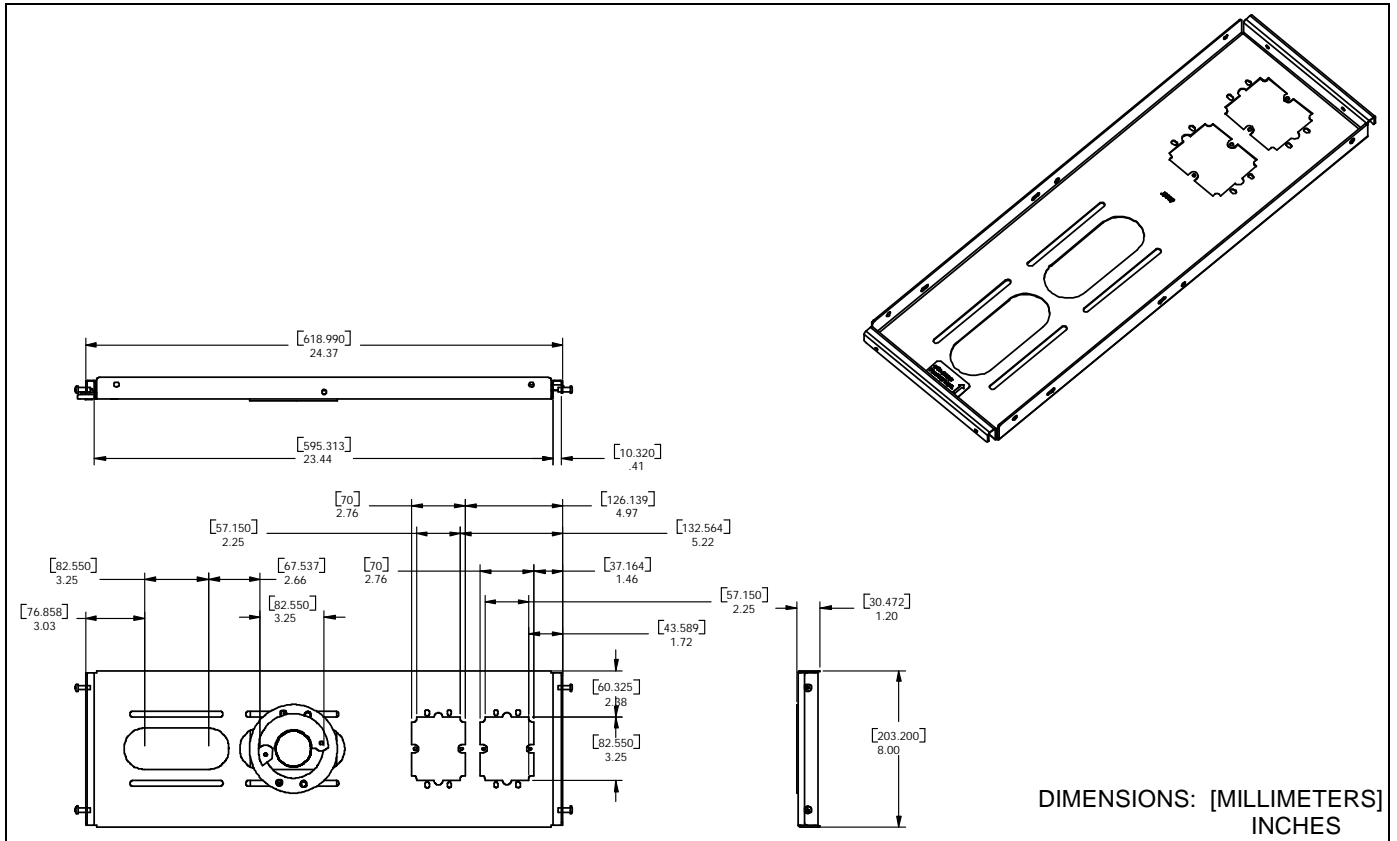
**IMPORTANT ! :** The CMA440 is designed for installation above existing suspended ceiling tile.

**IMPORTANT ! :** The CMA440 has been designed to support a single UL Listed electrical receptacle, a double UL Listed electrical receptacle or both.






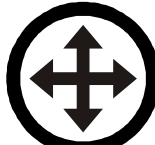


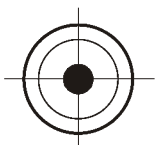



**NOTE:** It is the installer's responsibility to ensure that the enclosure is bonded to the ground in the switch box, in accordance with the National Electric Code, ANSI/NFPA 70 or Canadian Electrical Code, CSA C22.1.

**--SAVE THESE INSTRUCTIONS--**

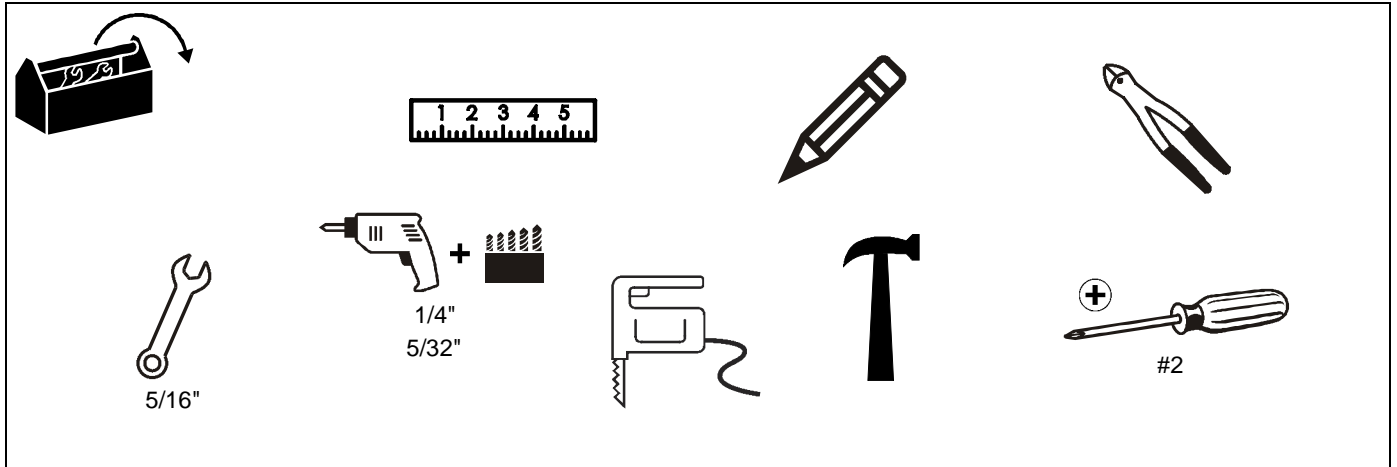
**DIMENSIONS**



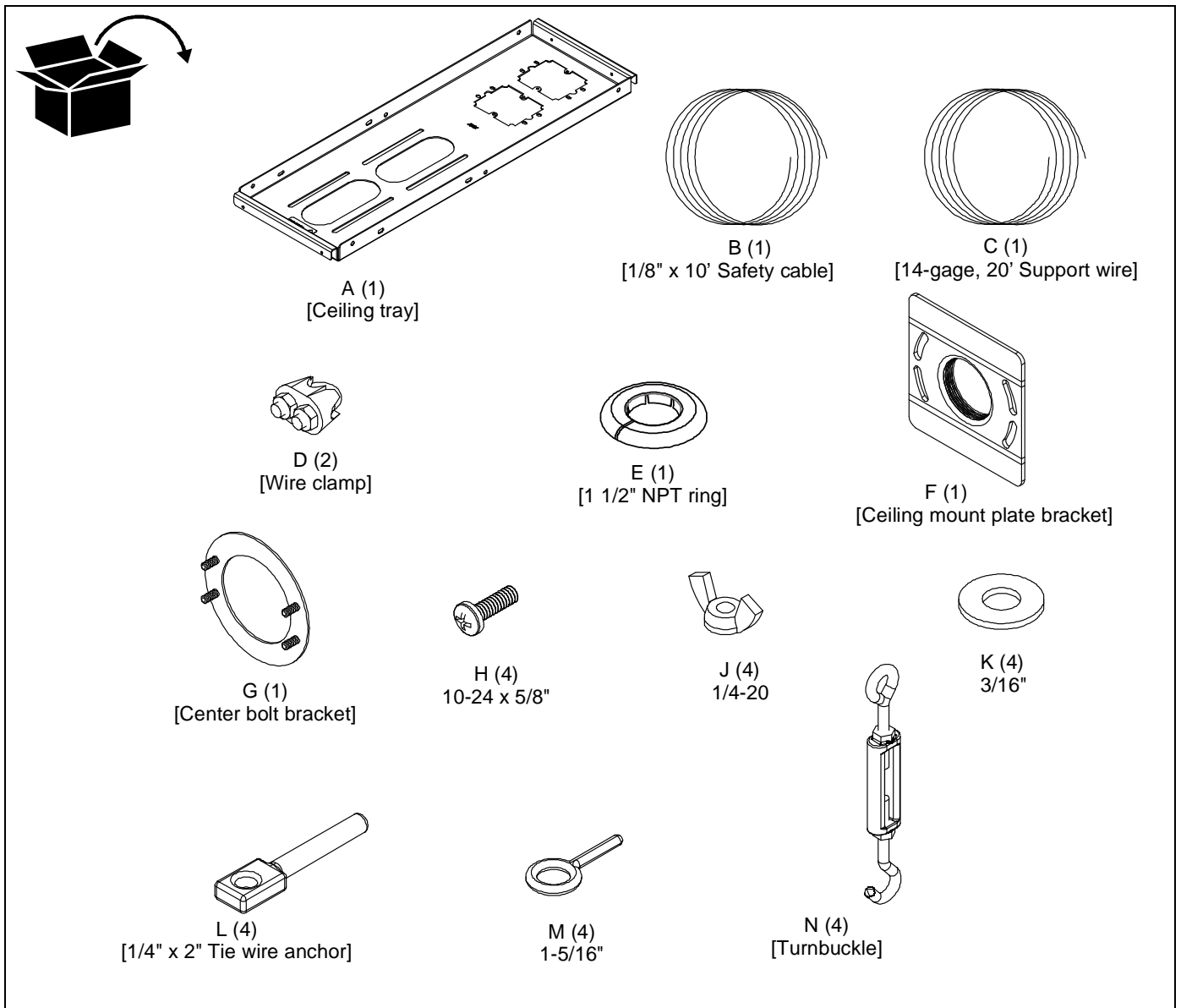
## LEGEND

	<b>Tighten Fastener</b> Apretar elemento de fijación Befestigungsteil festziehen Apertar fixador Serrare il fissaggio Bevestiging vastdraaien Serrez les fixations		<b>Pencil Mark</b> Marcar con lápiz Stiftmarkierung Marcar com lápis Segno a matita Potloodmerkten Marquage au crayon
	<b>Measure</b> Medir Messen Medir Misurare Meten Mesurer		<b>Drill Hole</b> Perforar Bohrloch Fazer furo Praticare un foro Gat boren Percez un trou
	<b>Phillips Screwdriver</b> Destornillador Phillips Kreuzschlitzschraubendreher Chave de fendas Phillips Cacciavite a stella Kruiskopschroevendraaier Tournevis à pointe cruciforme		<b>Adjust</b> Ajustar Einstellen Ajustar Regolare Afstellen Ajuster
	<b>By Hand</b> A mano Von Hand Com a mão A mano Met de hand À la main		<b>Optional</b> Opcional Optional Opcional Opzionale Optie En option
	<b>Target of Projector</b> Punto de enfoque del proyector Ziel des Projektors Mira do projector Punto di proiezione Doel van de projector Cible du projecteur		<b>Security Wrench</b> Llave de seguridad Sicherheitsschlüssel Chave de segurança Chiave di sicurezza Veiligheidssleutel Clé de sécurité
	<b>Hammer</b> Martillo Hammer Martelo Martello Hamer Marteau		<b>Open-Ended Wrench</b> Llave de boca Gabelschlüssel Chave de bocas Chiave a punte aperte Steeksleutel Clé à fourche

**TOOLS REQUIRED FOR INSTALLATION**



**PARTS**



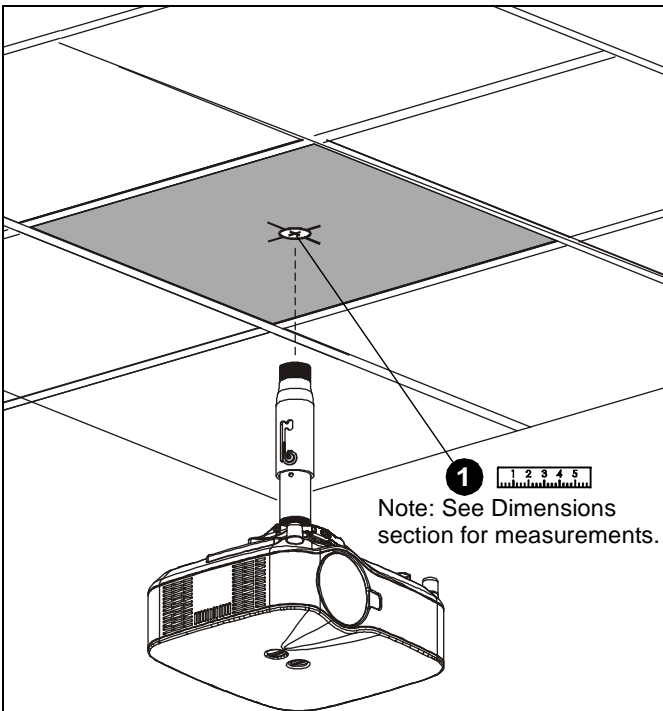
**SITE PREPARATION / ASSEMBLY**



**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.

**NOTE:** The CMA440 is designed for installation *on top of* an existing suspended ceiling tile.

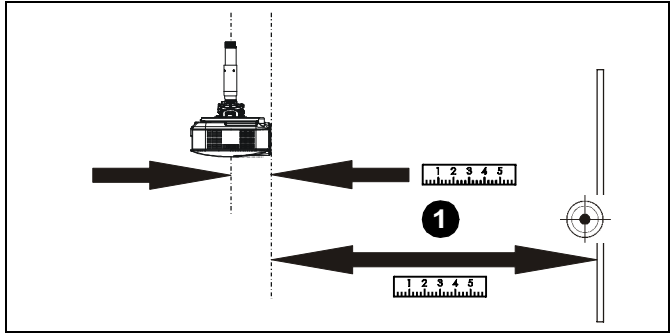
The CMA440 can accommodate one 1-1/2" NPT or NPSM following ANSI/ASME B1.20.1 (Schedule 40, 0.154" minimum thickness steel or aluminum - ASTM B221) threaded extension column (not included).



**Figure 1**

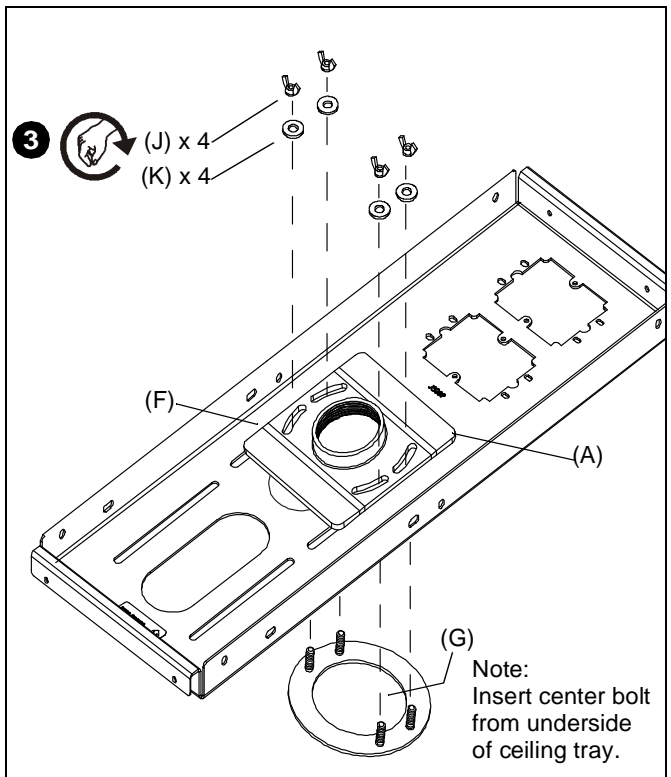
1. Select the best mounting location based upon the following items (See Figure 2):
  - Dimensional offset of display/projector relative to column (due to mount and/or interface).
  - For Projectors: Any recommended dimensions of projector relative to target (see installation instructions included with the projector).

**NOTE:** Refer to the Dimensions section and consider which of the two possible mounting holes will be used for the extension column.



**Figure 2**

2. Remove adjacent ceiling tiles for access. Do NOT remove tile affected by installation of extension column.
3. Assemble ceiling plate bracket (F) and center bolt bracket (G) to ceiling tray (A) with four wing nuts (J) and four flat washers (K). (See Figure 3)
4. Lay ceiling tray (A) on top of ceiling tile so that extension column support is aligned with location noted in Step 1.



**Figure 3**

5. Mark the following locations on ceiling tile with pencil (See Figure 4):

- A. Extension column hole
- B. **OPTIONAL:** Electrical cutout

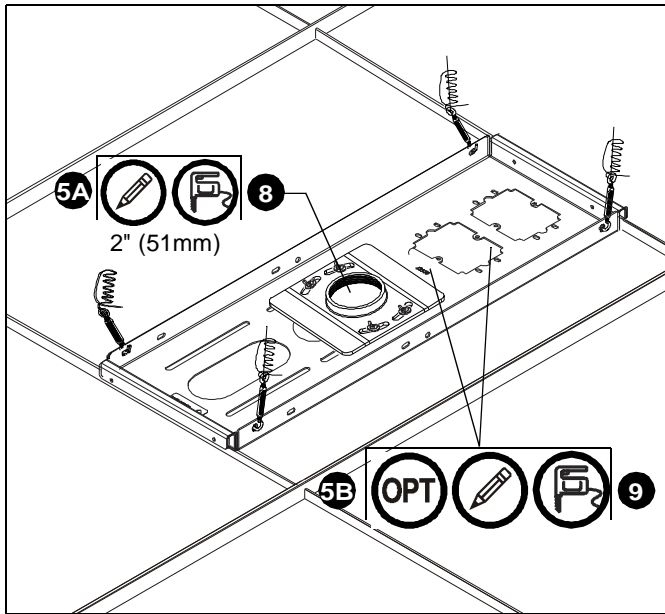


Figure 4

6. Examine ceiling structure (concrete, steel truss, or wood) above tray (A) to identify the following (See Figure 5):

- Four support wire anchor locations, each approximately 15° outboard of corresponding hanger bracket (G). Mark locations with pencil.
- One safety cable anchor location directly above center of tray (A). Mark location with pencil.

7. Remove ceiling tray (A) and affected ceiling tile.

8. Cut extension column hole in tile at the marked location, 2" (51mm) minimum diameter.

9. **OPTIONAL:** Cut electrical box opening in tile at marked location. Install UL Listed electrical box (not included) to ceiling tray (A) following instructions included with electrical box.

10. Temporarily clamp ceiling tray (A) to the ceiling track.

11. Mount the ceiling tray (A) above the ceiling tile. (See Figure 5) for SAE applications and (See Figure 6) for Metric applications.

12. Attach ceiling tray (A) to ceiling track using four 10-24 x 5/8" Phillips head self-tapping screws (H) in the inside four holes of tray for SAE applications (See Figure 5) or in the outside four holes of tray for metric applications. (See Figure 6).

13. Hook turnbuckles (N) into holes on sides of ceiling tray. (See Figure 5) and (See Figure 6)

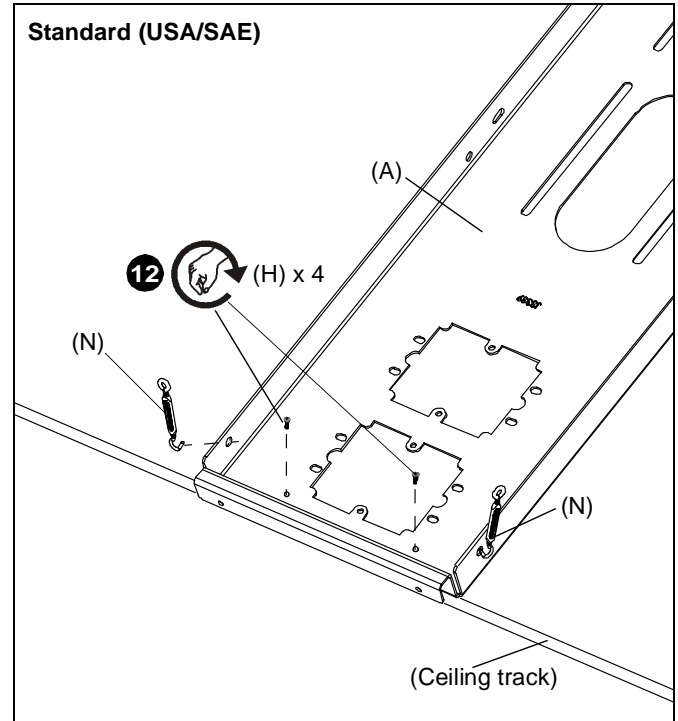


Figure 5

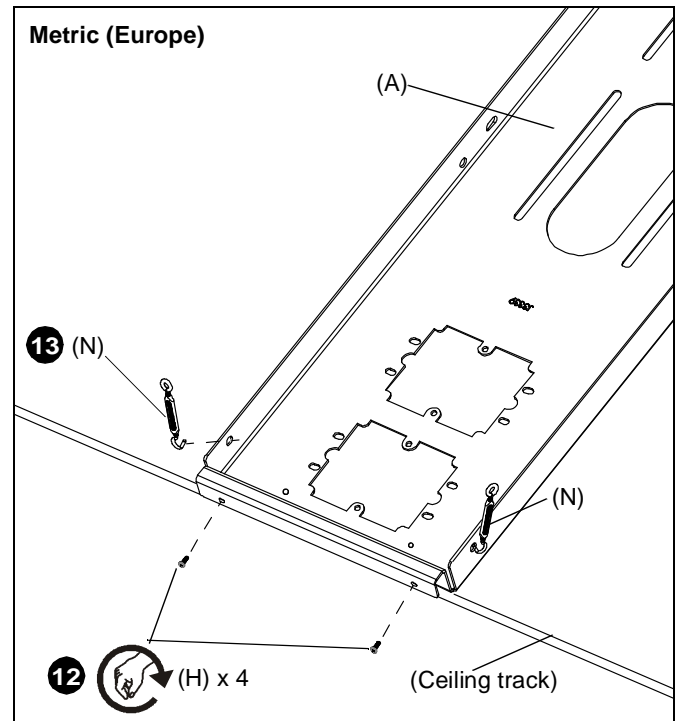


Figure 6

## SUPPORT WIRE INSTALLATION



**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.

**NOTE:** If the true ceiling is more than 36" (914mm) above the suspended ceiling, you must obtain additional anchoring wire. Use 14-gauge soft galvanized wire. A longer safety cable may also be required. Contact Chief Manufacturing for assistance in determining your specific requirements.

### Wood Ceiling Structure



**WARNING:** Anchors must be installed into wood with a minimum thickness of 1-1/2" (3.81cm) and a minimum depth of 3-1/2" (8.89cm) or greater.

1. Drill 5/32" (4.0mm) diameter x 2" (51mm) deep hole at each of the four marked wire anchor support locations. (See Figure 7) Remove debris from holes.

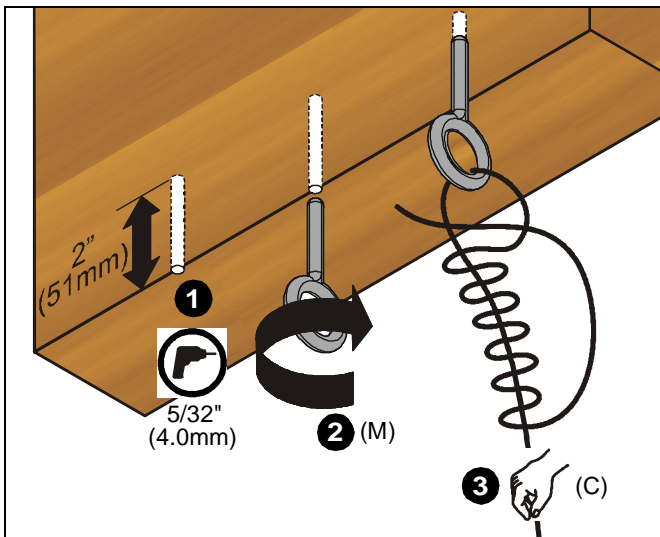


Figure 7

2. Fully thread 1-5/16" eye lag screws (M) into each of the four holes. (See Figure 7)
3. Cut the 20' (6.1mm) support wire (C) into four pieces of equal length and insert support wire (C) through eye lag (M). Twist wire tightly around itself at least four complete turns, and then thread loose end between eye and first turn. (See Figure 7) Repeat for three remaining support locations.

### Solid Concrete Ceiling Structure



**WARNING:** Anchors must be installed into structurally sound solid concrete with a minimum thickness of 1.75" (44.5mm) or greater. Installation into concrete that exhibits cracking, spalling, or other defects may result in failure of anchor and serious personal injury or damage to equipment!

1. Drill 1/4" (6.4mm) diameter x 1-3/8" (35mm) deep hole at each of the four marked wire anchor support locations. (See Figure 8) Ensure hole is at least 2-1/2" (64mm) from nearest concrete edge. Remove debris from hole.
2. Tap anchor (L) into each hole to a depth of at least 1" (25.4mm). (See Figure 8)

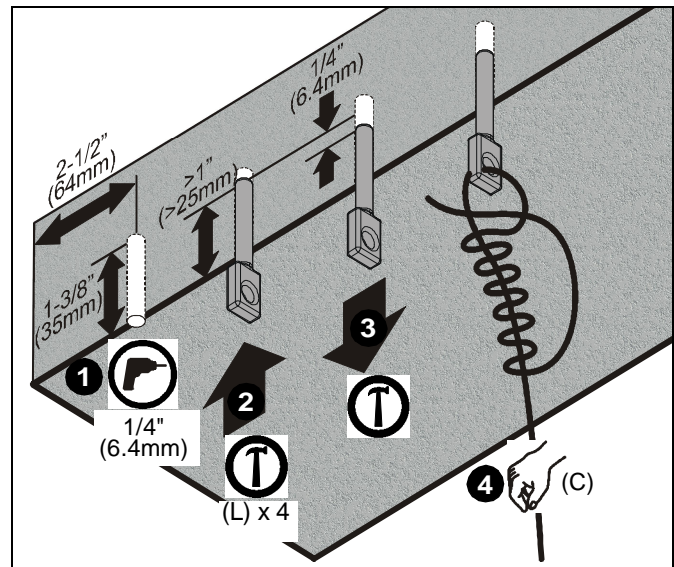


Figure 8



**WARNING:** Failure to properly set anchor may result in failure of anchor and serious personal injury or damage to equipment!

3. Using claw portion of hammer, set each anchor (L) by pulling it out of hole approximately 1/4" (6.4mm). (See Figure 8)
4. Insert support wire (C) through hole in anchor. Twist wire tightly around itself at least four complete turns, and then thread loose end between anchor and first turn. (See Figure 8).
5. Repeat for three remaining support locations.



### Steel Truss Ceiling Structure

1. Route end of support wire (C) over truss at marked wire anchor support location. Twist wire tightly around itself at least four complete turns, and then thread loose end between truss and first turn. (See Figure 9)
2. Repeat for three remaining support locations.

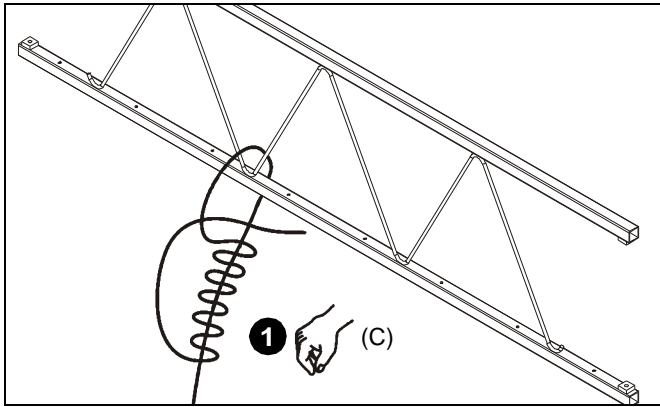


Figure 9

### Ceiling Tray Installation

1. Reinstall ceiling tile (if applicable) and ceiling tray (A). Ensure proper orientation for location of hole.
2. Tighten the four 10-24 x 5/8" Phillips head screws (H) previously installed (SAE or Metric). (See Figure 10)

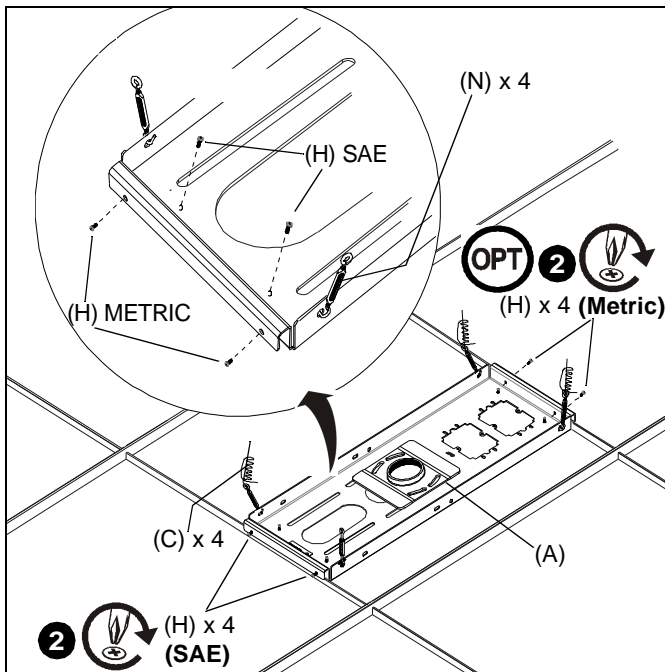


Figure 10

3. Adjust hooks and eyes on turnbuckles (N) so that approximately 1/4" - 1/2" (6.4mm - 12.7mm) of threads show on *inside* of turnbuckles (See Figure 11).
4. Attach the hook end of each turnbuckle (N) to the corresponding hole on the ceiling tray. (See Figure 11)

5. Insert corresponding support wire (C) through eye in each of the four turnbuckles (N). Pull wire tight and twist back around itself at least 4 complete turns, then thread loose end between eye and first turn. (See Figure 11)

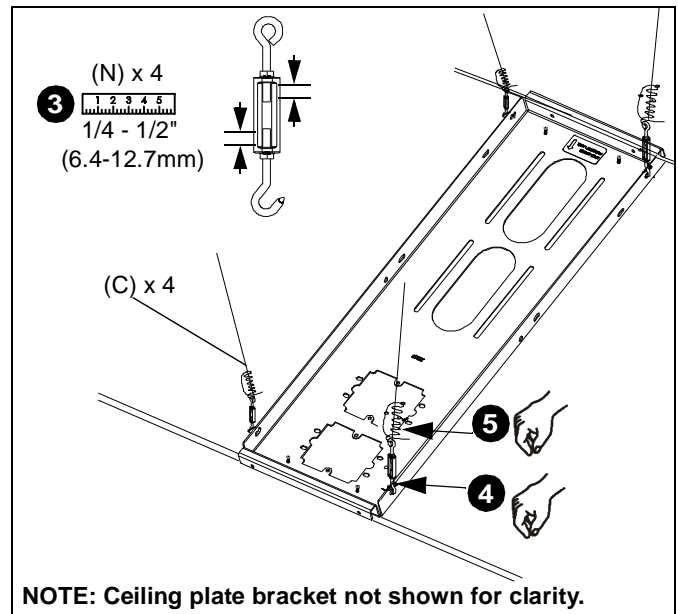


Figure 11



**CAUTION:** Failure to properly tension cables (C) may result in damage to ceiling tile framework!

6. Adjust turnbuckles (N) until tray (A) is supported *entirely* and *evenly* by all four support wires (C), but not so tight as to distort suspended ceiling framework (See Figure 11).

## SAFETY CABLE INSTALLATION

1. Attach safety cable (B) to steel truss ceiling structure at marked location.

**NOTE:** If no suitable steel truss structure exists, install concrete anchor (Simpson Tie-Wire concrete anchor #TWD25112, not included) or wood eye lag as required (hardware not included) per manufacturer's installation instructions.

- A. For ceiling structure less than 4' (1.2m) from ceiling tray (A) (See Figure 12):
  - Attach one end of cable (B) to channel in tray (A). Secure with wire clamp (D).
  - Route opposite end of cable (B) over truss, and attach to opposite channel in tray (A). Remove cable slack and secure with wire clamp (D).
- B. For ceiling structure from 4 - 7' (1.2 - 2.1m) from ceiling tray (A) (See Figure 13):
  - Route one end of safety cable (B) over truss and secure to itself with wire clamp (D).
  - Route opposite end of safety cable (B) through *both* channels in tray (A). Remove cable slack and secure to itself with wire clamp (D).
- C. For ceiling structure more than 7' above tray (A):
  - Additional 1/8" diameter steel safety cable will be required (not included).
  - Attach cable to tray (A) per step 1.A. or 1.B. above. (See Figure 12) and (See Figure 13)

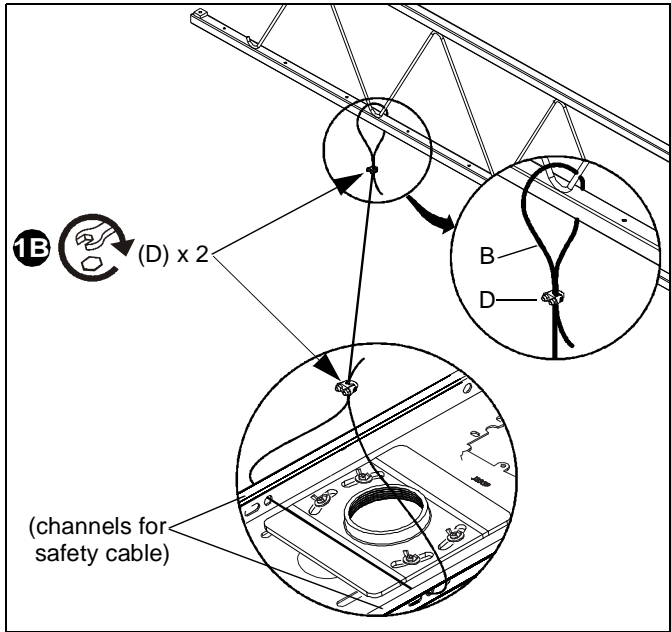


Figure 13

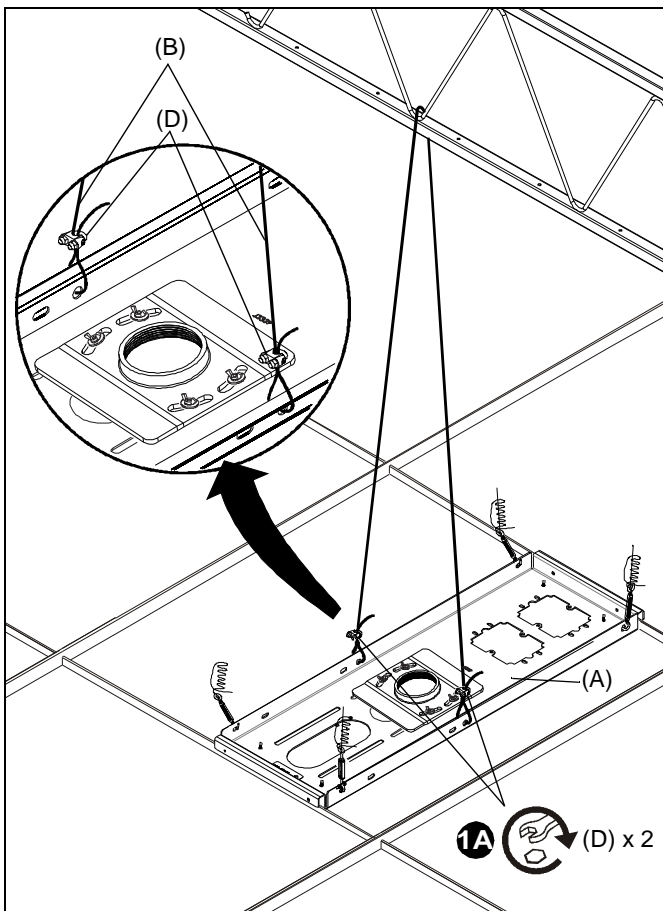


Figure 12

## EXTENSION COLUMN INSTALLATION

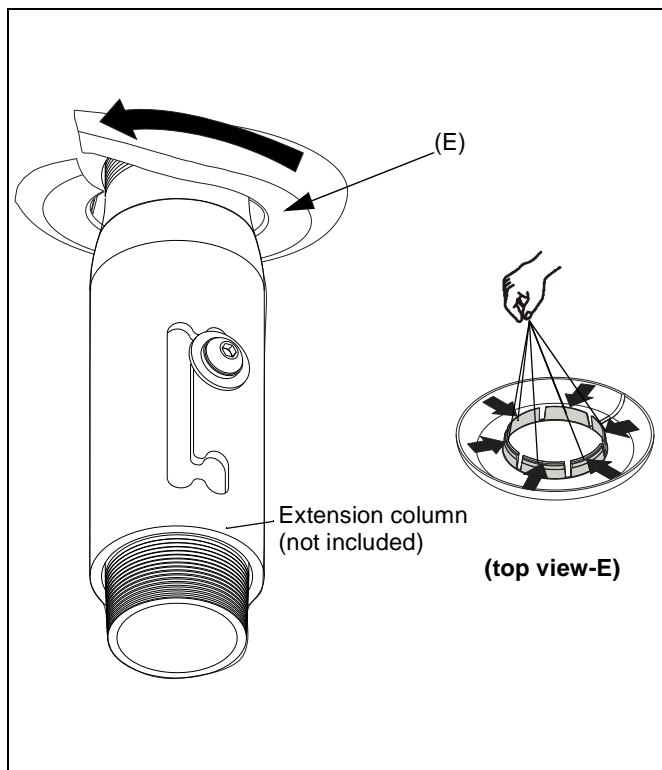


**WARNING:** Exceeding the weight capacity can result in serious personal injury or damage to equipment! It is the installer's responsibility to make sure the combined weight of all components attached to the CMA440 does not exceed 50 lbs (22.68 kg).

1. Install 1-1/2" NPT or NPSM following ANSI/ASME B1.20.1 (Schedule 40, 0.154" minimum thickness steel or aluminum - ASTM B221) threaded extension column (not included) into extension column support until tight, with a minimum of four threads engaged, using instructions provided with extension column accessory.

**NOTE:** If installation instructions are not available, contact Chief Manufacturing for assistance.

2. Install NPT ring (E) on extension column below ceiling tile (See Figure 14). If necessary, bend six tabs inward to secure ring to column.



**Figure 14**

3. Reinstall remaining ceiling tiles as required.



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