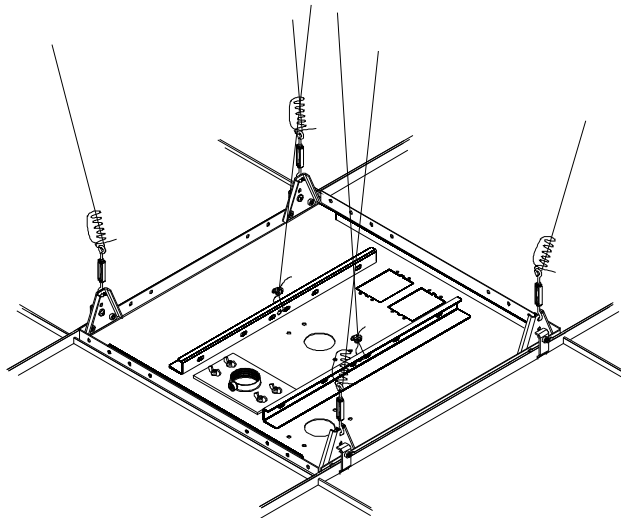
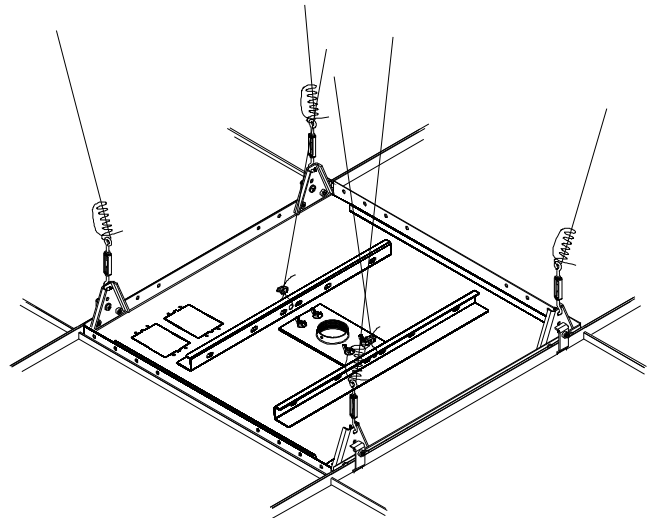

INSTALLATION INSTRUCTIONS



CMA450



CMA455

Suspended Ceiling Kit

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 CMA450/455 does not exceed the following:

- **CMA450:** Extension column installation to **center** hole: 250 lbs (113 kg)
- **CMA450:** Extension column installation to **side or corner** hole: 125 lbs (56 kg)
- **CMA455:** 250 lbs (113 kg)



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 CMA450/455 mounts are designed to be mounted to as follows:

- The CMA450 is designed for installation *on top of* an existing suspended ceiling tile.
- The CMA455 may either be installed *on top of*, or *in place of*, an existing ceiling tile.

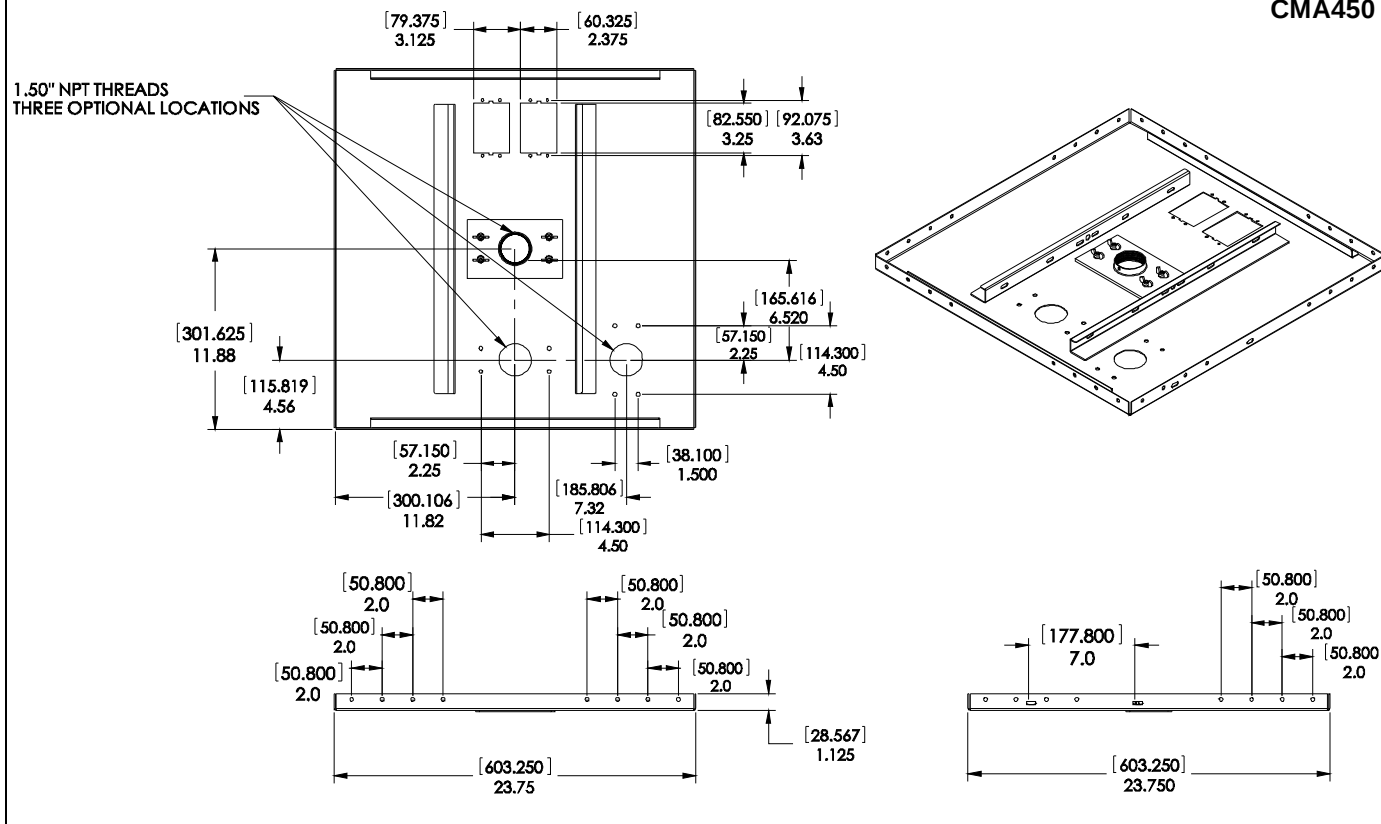
IMPORTANT ! : The CMA450/455 has been designed to support a single UL Listed electrical receptacle, a double UL Listed electrical receptacle or both.

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.

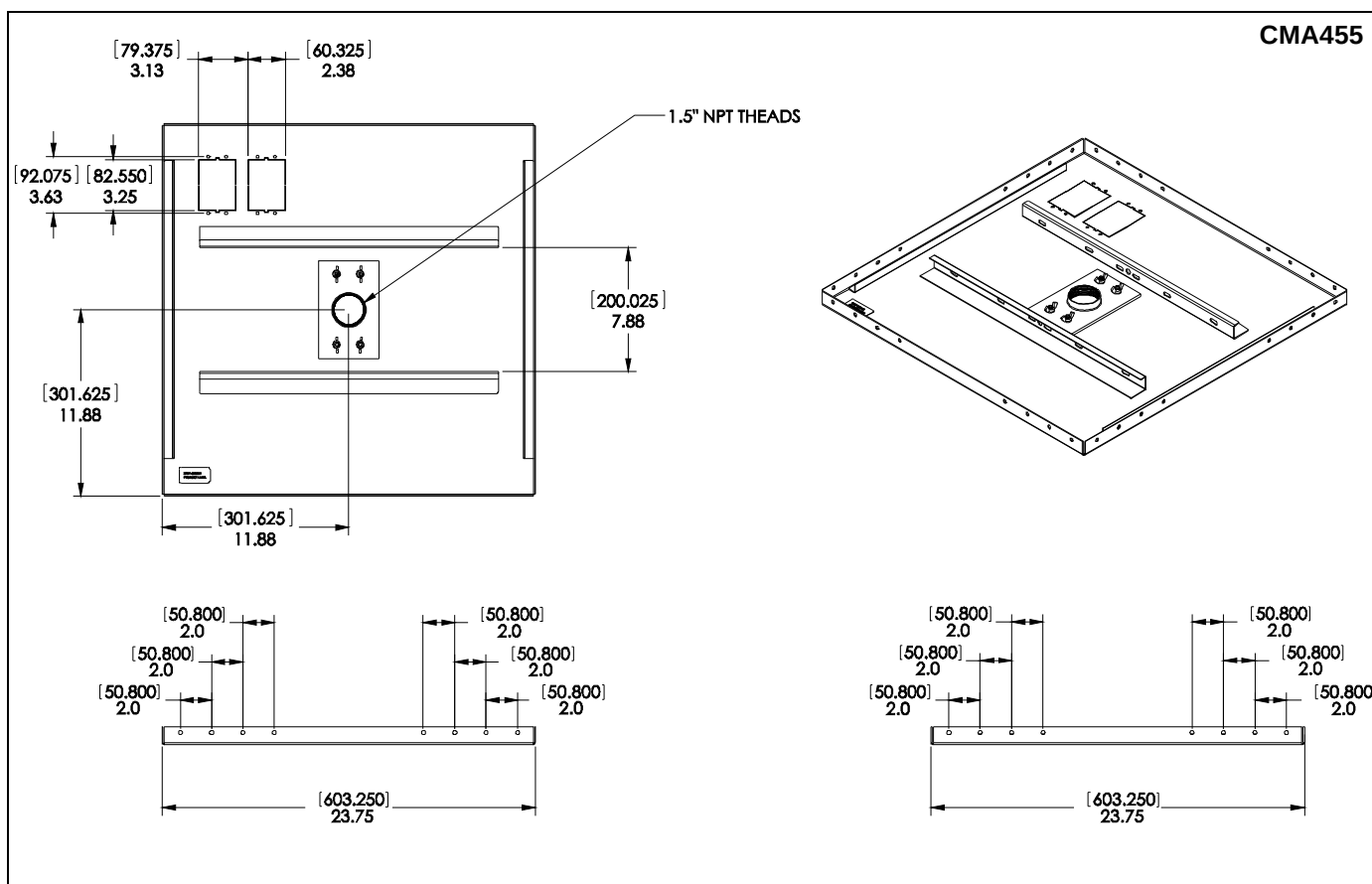
--SAVE THESE INSTRUCTIONS--

DIMENSIONS

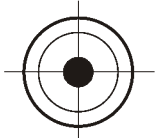
CMA450



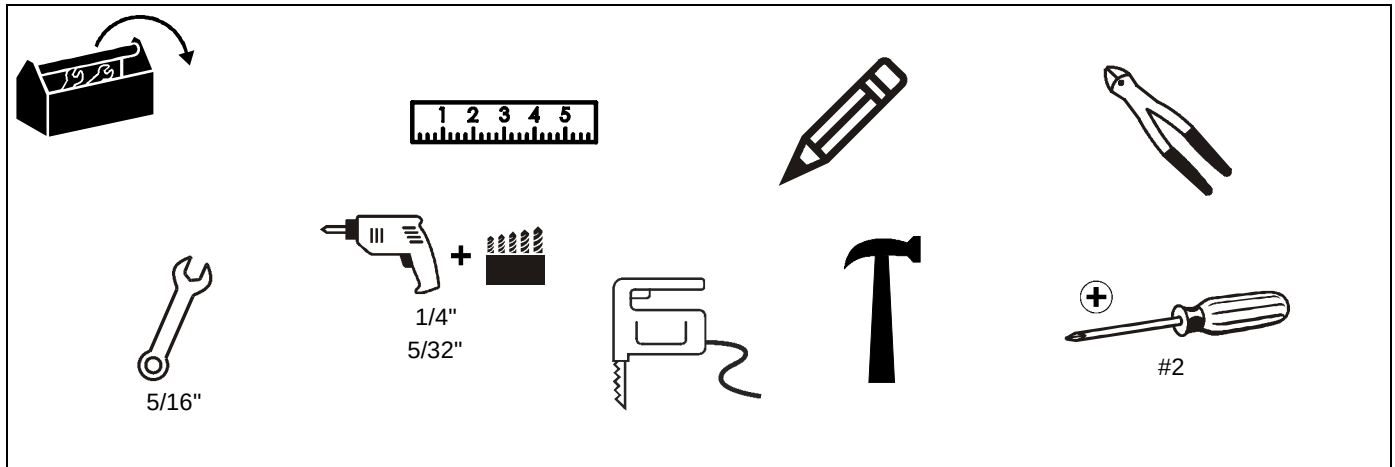
CMA455



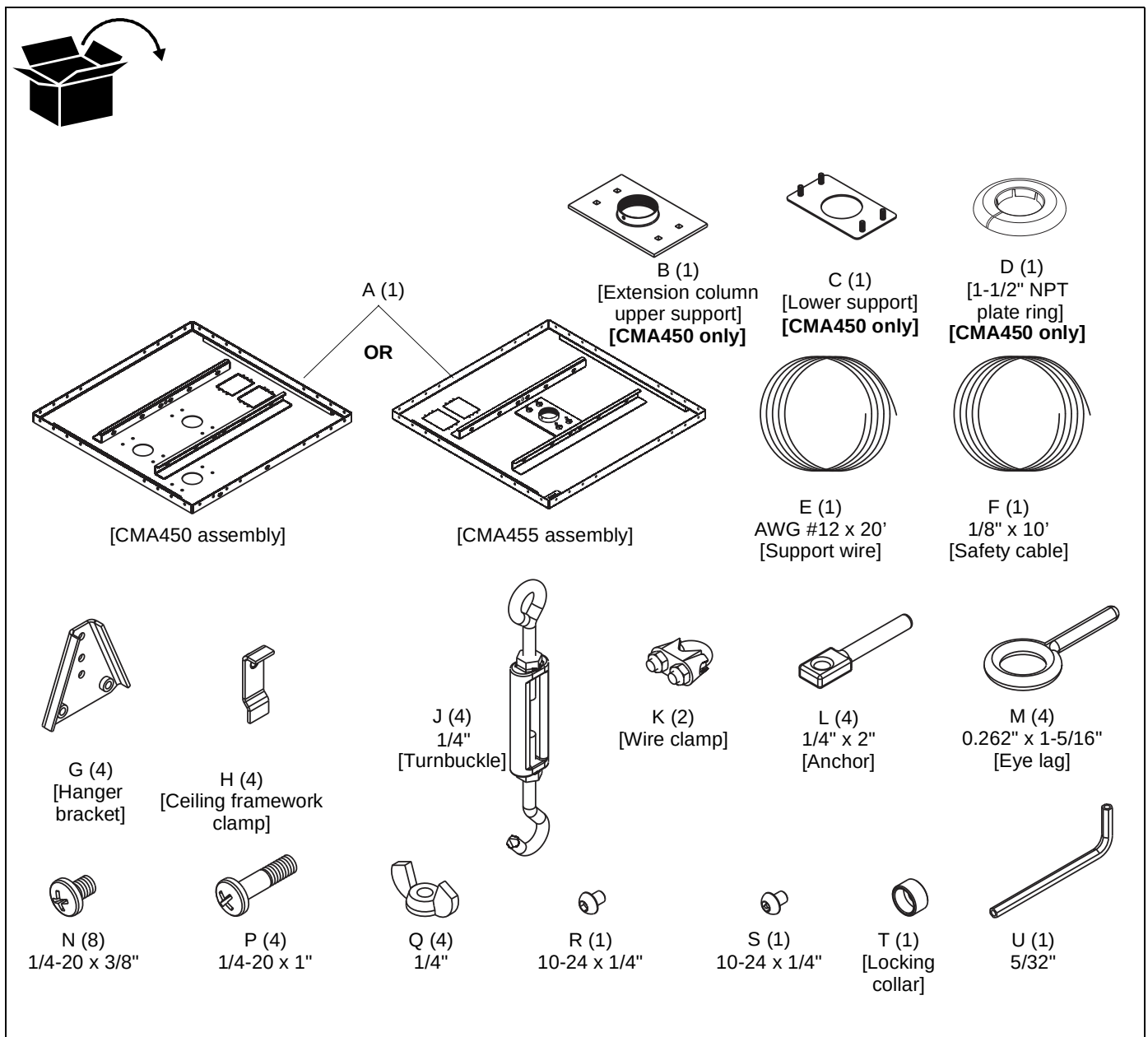
LEGEND

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

TOOLS REQUIRED FOR INSTALLATION



PARTS



SITE PREPARATION / ASSEMBLY

NOTE: Instructions apply to both CMA450 and CMA455 unless specifically noted.

The CMA450 and CMA455 are nearly identical except for the following items:

- The CMA450 is designed for installation *on top of* an existing suspended ceiling tile, while the CMA455 may either be installed *on top of*, or *in place of*, an existing ceiling tile.
- The CMA450 can accommodate any one of nine 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) locations (See Figure 1), while the CMA455 can only accommodate a single column location (center). Threaded extension column must have a minimum of four threads engaged.
- The CMA450 is shipped with the upper and lower extension column supports (B, C) unassembled, while the CMA455 is shipped with center column support pre-assembled.

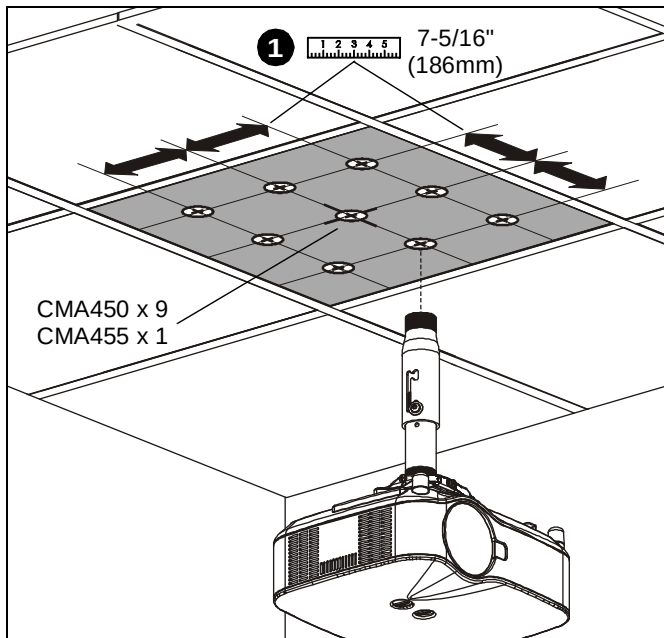


Figure 1

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: If installing CMA455, proceed to **Step 3**.

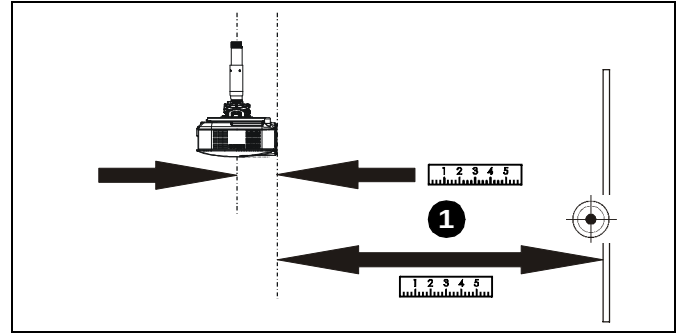


Figure 2

2. **CMA450 ONLY:** Use four 1/4" wing nuts (Q) to assemble extension column upper support (B) and lower support (C) to center, side, or corner of CMA450 assembly (A) (as required). (See Figure 3)

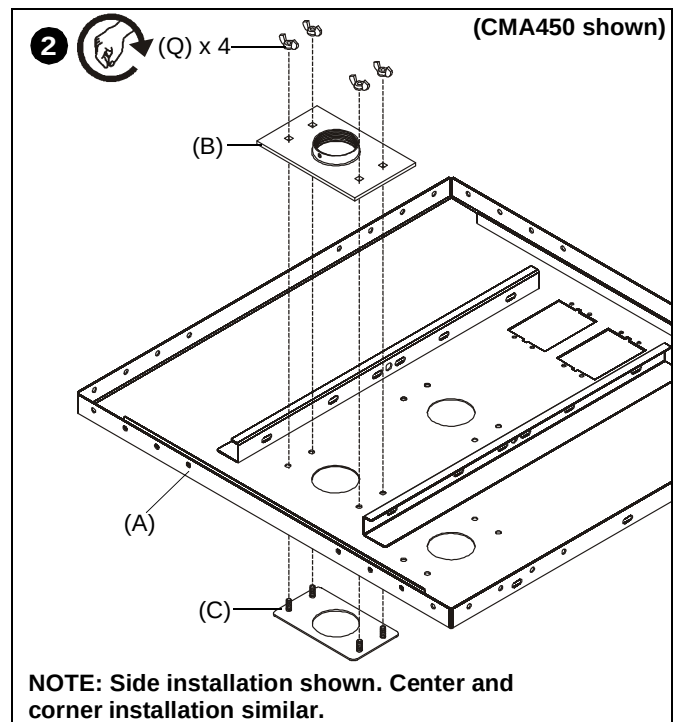


Figure 3

3. Remove adjacent ceiling tiles for access. Do NOT remove tile affected by installation of extension column.
4. Lay assembly (A) on top of ceiling tile so that extension column support is aligned with location noted in Step 1.

5. Mark locations for hanger brackets (G) on tray (A) with pencil (See Figure 4). Each hanger bracket (G) may be installed in one of 3 locations in each corner of tray (A), dependent upon specific installation requirements. Ensure brackets (G) are located as follows:

- On sides of tray (A) adjacent to primary (1-1/2" (38mm) high) rails of ceiling framework.
- As close to corner of tray (A) as installation allows.

NOTE: Proceed to the appropriate installation situation.

6. **Installation on Top of Existing Tile only:** Mark the following locations on ceiling tile with pencil (See Figure 4):

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

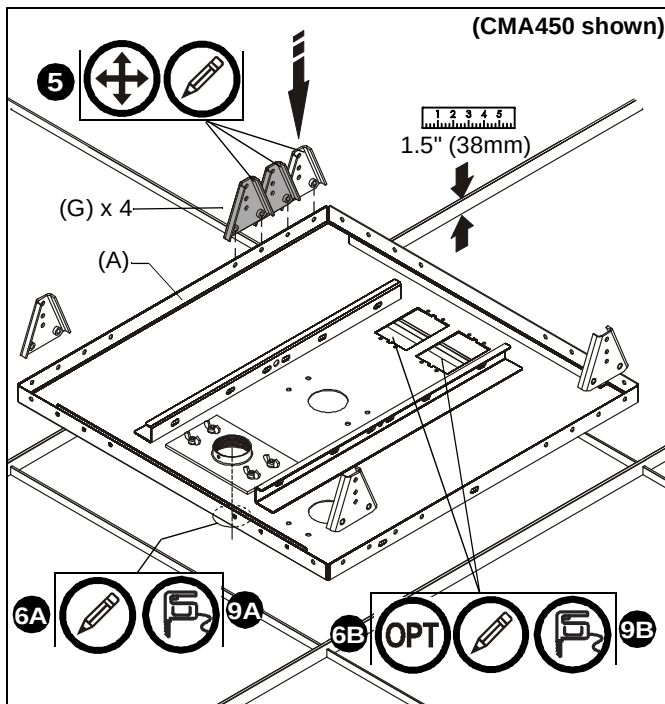


Figure 4

7. 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.

NOTE: Hanger brackets (G) and turnbuckles (J) are installed later; they are shown in Figure 5 for reference only. (See Figure 5)

NOTE: CMA450 shown; CMA455 similar.

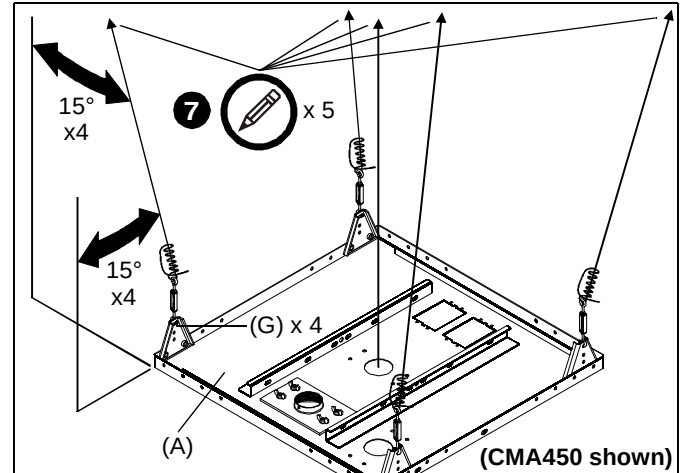


Figure 5

8. Remove tray (A) and affected ceiling tile.
9. **Installation on Top of Existing Tile only:** Cut the following holes in ceiling tile (See Figure 4):
- A. Cut extension column hole in tile at marked location, 2" (51mm) minimum diameter.
 - B. **OPTIONAL:** Cut electrical box opening in tile at marked location. Install UL Listed electrical box (not included) to tray (A) following instructions included with electrical box.
10. Install four hanger brackets (G) to tray (A) with eight 1/4-20 x 3/8" Phillips head screws (N) at marked locations (See Figure 6). Ensure brackets (G) are installed against *inside* flanges of tray (A).

NOTE: Some installations may require that one or more brackets (G) be installed *after* tray (A) is in positioned in suspended ceiling framework.

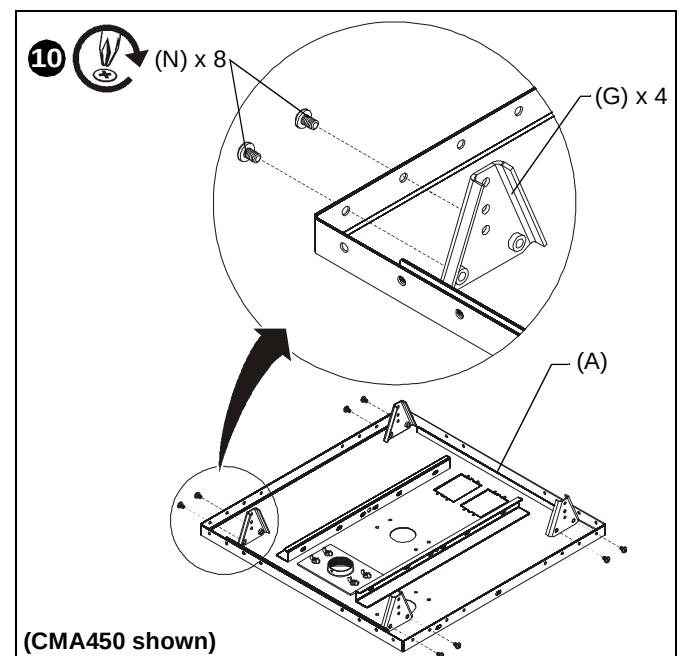


Figure 6

11. Loosely install ceiling framework clamps (H) to hanger brackets (G) using 1/4-20 x 1" Phillips head screws (P) (See Figure 7).

- **FOR INSTALLATION ON TOP OF EXISTING TILE:**
Use **lower** hole on bracket (G).
- **FOR REPLACEMENT OF EXISTING TILE:**
Use **middle** hole on bracket (G).

NOTE: **Top** hole reserved for installation of turnbuckle (J).

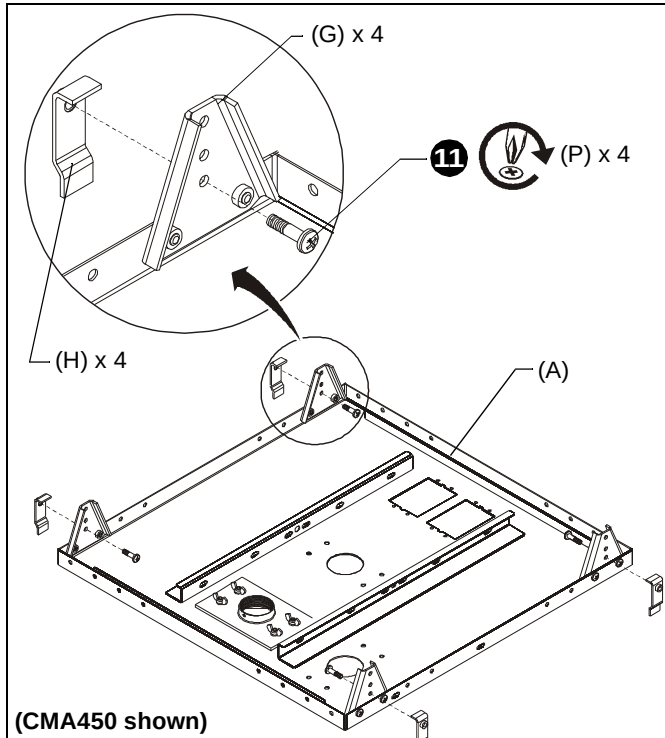


Figure 7

12. Cut support wire (E) into 4 pieces of equal length.

NOTE: Ceiling structure more than 3' (0.91m) above tray (A) will require additional #12 annealed steel wire.

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.

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 marked wire anchor support location. (See Figure 8) Ensure hole is at least 2-1/2" (64mm) from nearest concrete edge. Remove debris from hole.

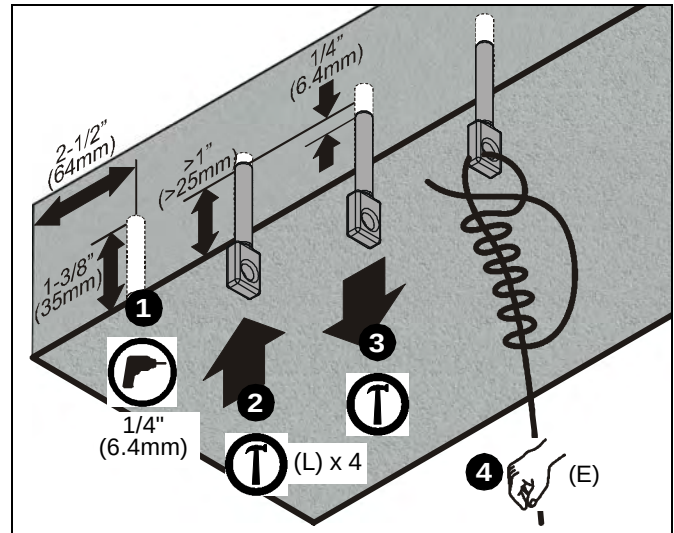


Figure 8

2. Tap anchor (L) into each hole to a depth of at least 1" (25mm). (See 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 (E) 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). Repeat for three remaining support locations.

Steel Truss Ceiling Structure

1. Route end of support wire (E) 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) Repeat for three remaining support locations.

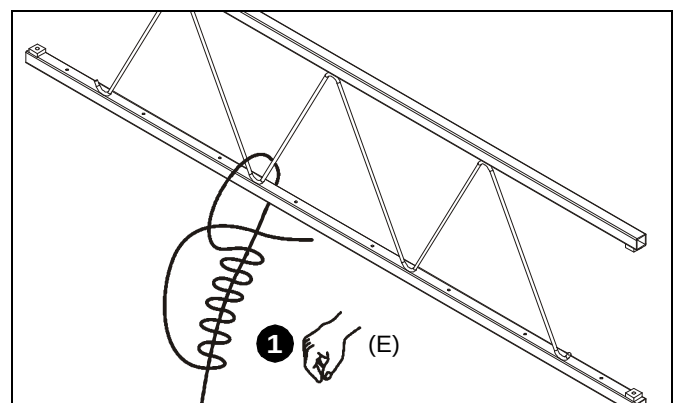


Figure 9

Wood Ceiling Structure



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

1. Drill 5/32" (4.0mm) diameter x 2" (51mm) deep hole at each marked wire anchor support location. (See Figure 10)
Remove debris from hole.

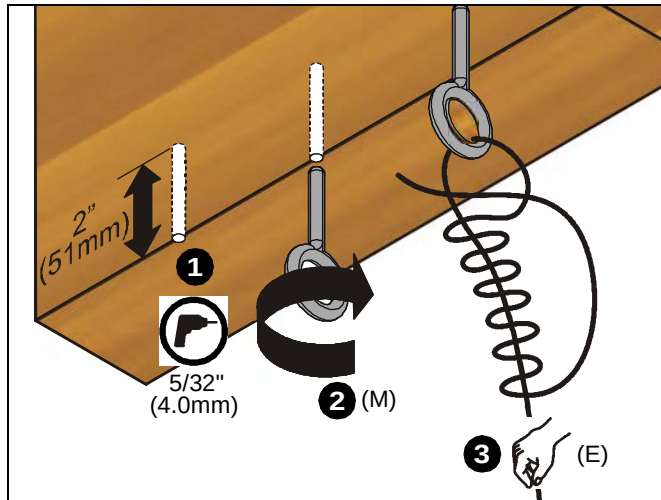


Figure 10

2. Fully thread eye lag (M) into each hole. (See Figure 10)
3. Insert support wire (E) 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 10)
Repeat for three remaining support locations.

TRAY INSTALLATION

1. Reinstall ceiling tile (if applicable) and assembly (A). Ensure proper orientation for location of hole.
2. Slip ceiling framework clamps (H) over primary (1-1/2" (38mm) high) rails of ceiling framework (See Figure 11). Tighten 1/4-20 x 1" Phillips head screws (P) previously installed.

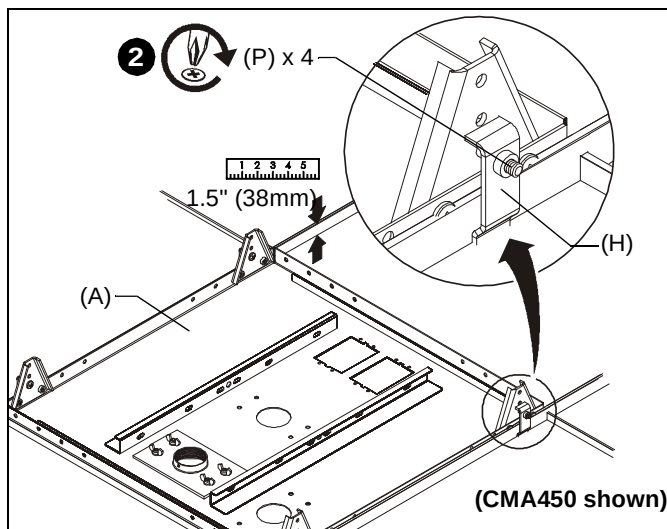


Figure 11

3. Adjust hooks and eyes on turnbuckles (J) so that approximately 1/4-1/2" (6.4-12.7mm) of threads show on inside of turnbuckles (See Figure 12).

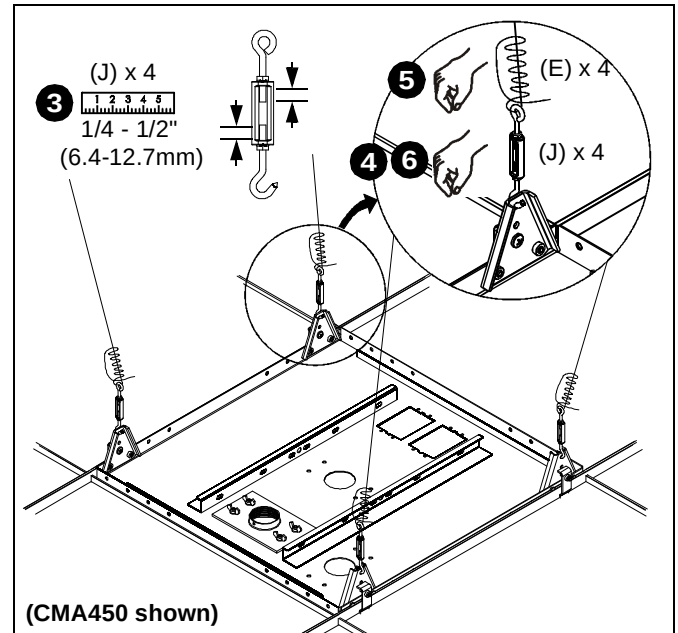


Figure 12

4. Attach the hook end of each turnbuckle (J) to the corresponding hanger bracket (G) upper hole. (See Figure 12)
5. Insert corresponding hanging wire (E) through eye in turnbuckle (J). Pull wire tight and twist back around itself at least 4 complete turns, then thread loose end between eye and first turn. (See Figure 12) Repeat for 3 remaining turnbuckles (J).



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

6. Adjust turnbuckles (J) until tray (A) is supported *entirely and evenly* by all four support wires (E), but not so tight as to distort suspended ceiling framework (See Figure 12).

SAFETY CABLE INSTALLATION

1. Attach safety cable (F) 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 screw (ASTM F541-12 .262x1 5/16 x 1.00 zinc plated steel eye-bolt, not included) per manufacturer's installation instructions.

NOTE: CMA450 shown; CMA455 similar.

- A. For ceiling structure less than 4' (1.2m) from ceiling tray (A) (See Figure 13):
 - Attach one end of cable (F) to channel in tray (A). Secure with wire clamp (K).
 - Route opposite end of cable (F) over truss, and attach to opposite channel in tray (A). Remove cable slack and secure with wire clamp (K).
- B. For ceiling structure from 4 - 7' (1.2 - 2.1m) from ceiling tray (A) (See Figure 14):
 - Route one end of cable (F) over truss and secure to itself with wire clamp (K).
 - Route opposite end of cable (F) through *both* channels in tray (A). Remove cable slack and secure to itself with wire clamp (K).
- C. For ceiling structure more than 7' above tray (A):
 - Additional 1/8" diameter steel safety cable will be required.
 - Attach cable to tray (A) per step 1.A. or 1.B. above.

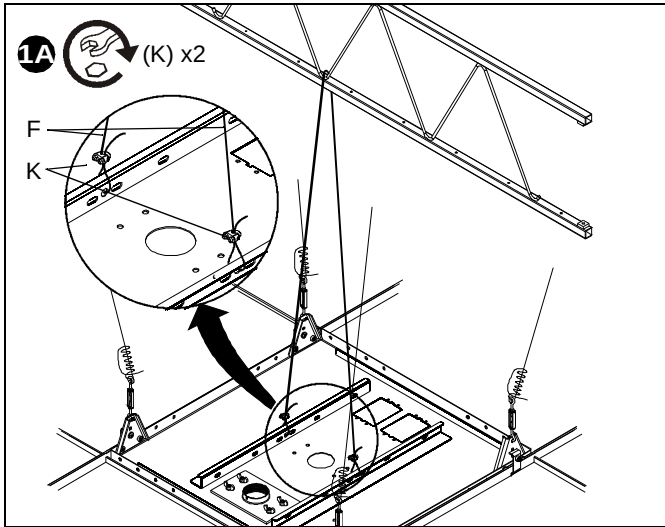


Figure 13

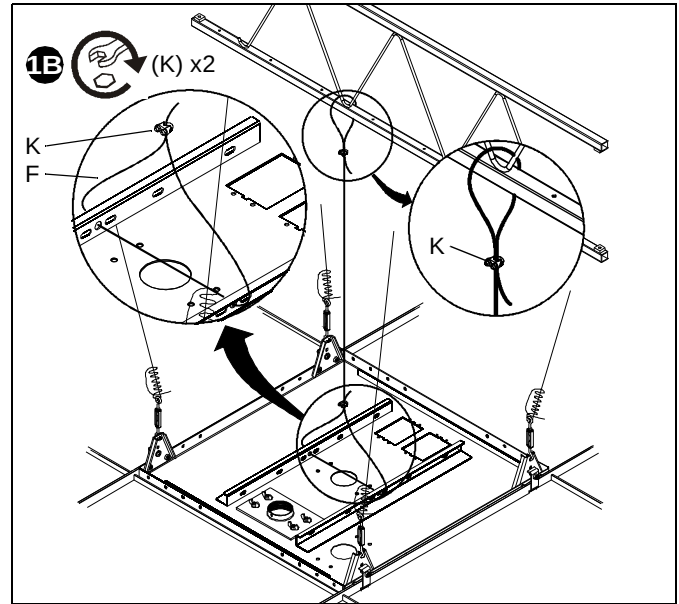


Figure 14

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 CMA450/455 does not exceed the following:

- **CMA450:** Extension column installation to *center* hole: 250 lbs (113 kg)
 - **CMA450:** Extension column installation to *side or corner* hole: 125 lbs (56 kg)
 - **CMA455:** 250 lbs (113 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.

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

2. Using hex key (U), secure extension column by *one* of the following methods (See Figure 15):

- Install screw (R) into extension column support, tightening firmly against column.
- **OPTIONAL:** Install security screw (S) through locking collar (T) into extension column support, tightening firmly against column.

NOTE: Locking collar (T) is designed to spin, even when screw (S) is tight.

NOTE: CMA450 shown; CMA455 similar.

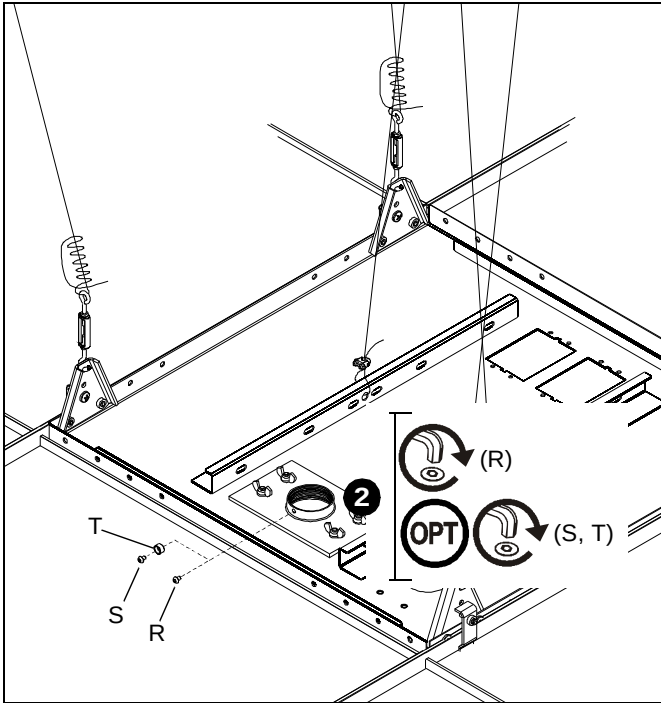


Figure 15

3. **CMA450 ONLY:** Install finishing ring (D) to extension column below ceiling tile (See Figure 16). If necessary, bend six tabs inward to secure ring to column.

NOTE: A 1-1/2" finishing ring is used, if desired, when the CMA450 is installed above an existing tile.

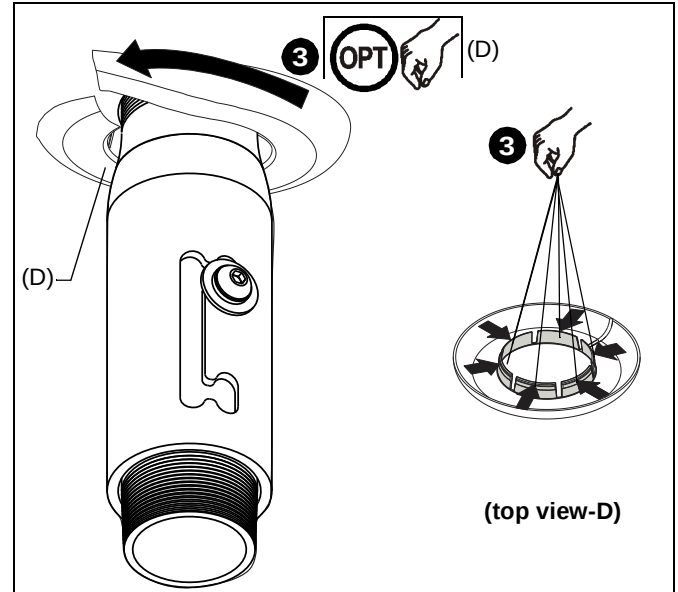


Figure 16

4. Reinstall remaining ceiling tiles as required.



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