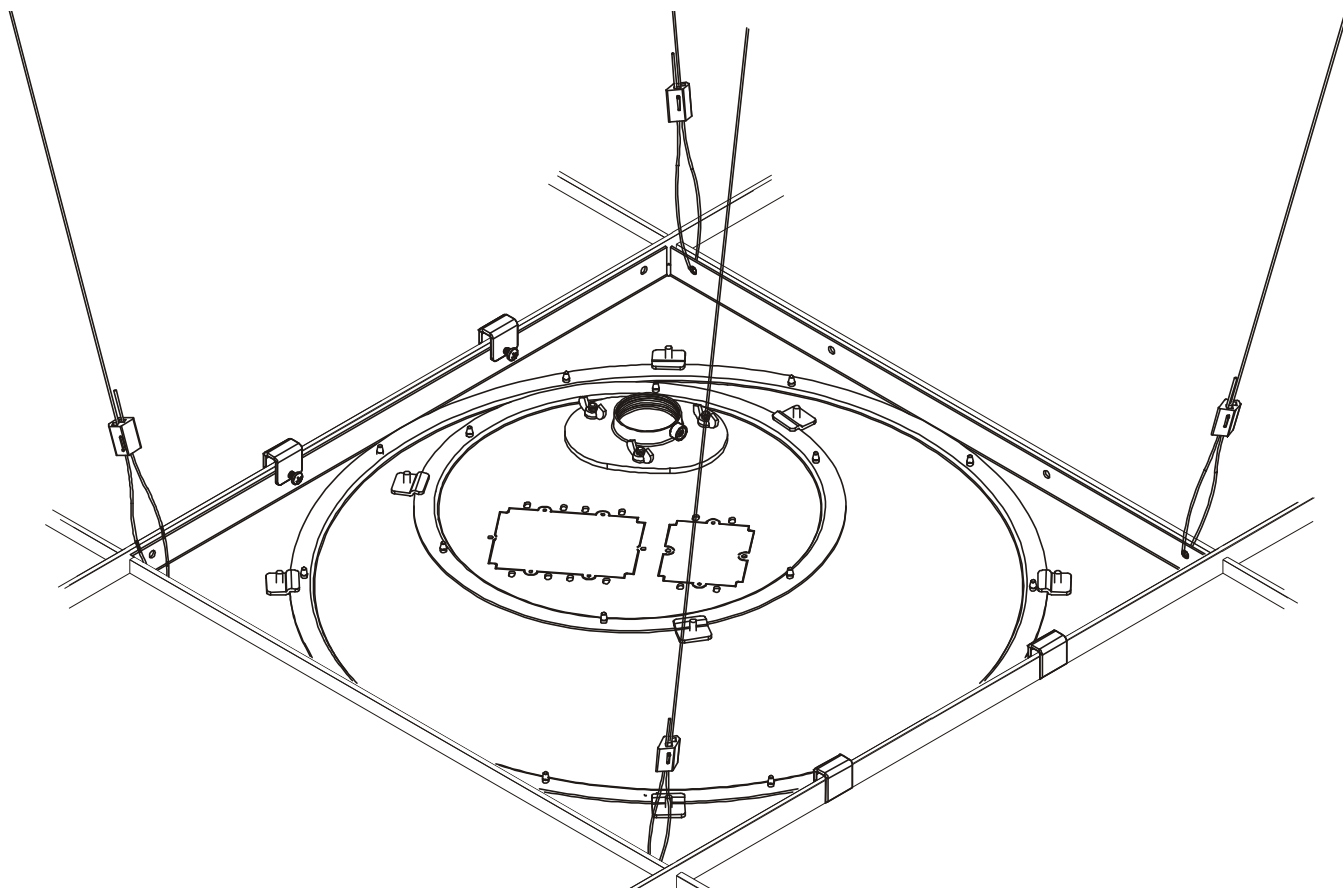

INSTALLATION INSTRUCTIONS



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 CMS445 does not exceed 50 lbs (22 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.



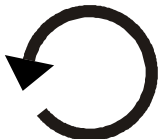





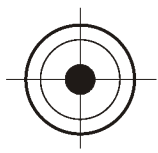


IMPORTANT ! : The CMS445 may either *replace* an existing suspended ceiling tile, or it may be installed *on top of* an existing suspended ceiling tile.

IMPORTANT ! : The CMS445 has been designed to support a single electrical receptacle, a double electrical receptacle or both.

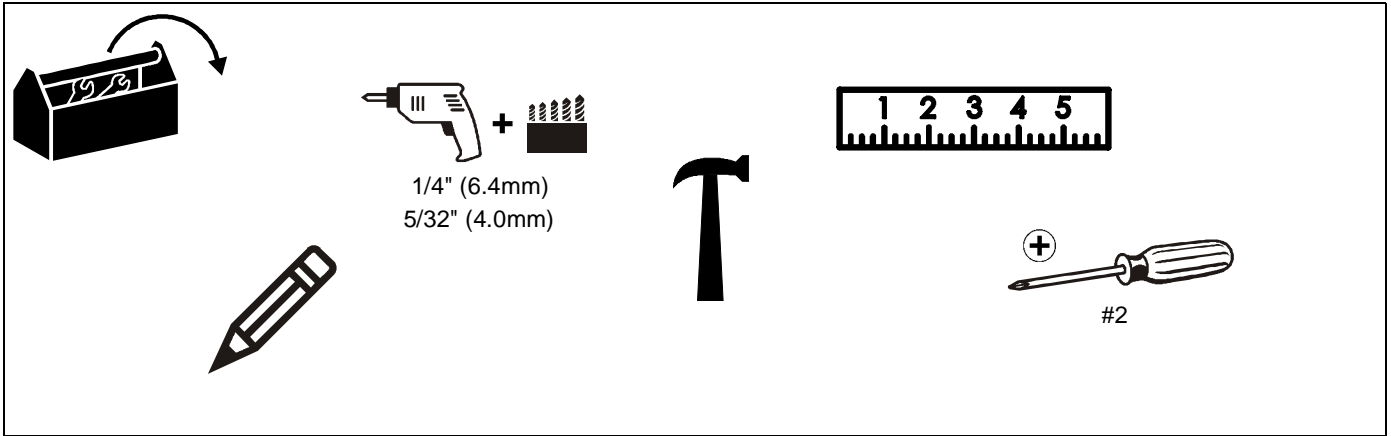
NOTE: It is the installer's responsibility to ensure that the enclosure is bonded to the ground in the switch box, in accordance with the National Electric Code, ANSI/NFPA 70 or Canadian Electrical Code, CSA C22.1.

--SAVE THESE INSTRUCTIONS--

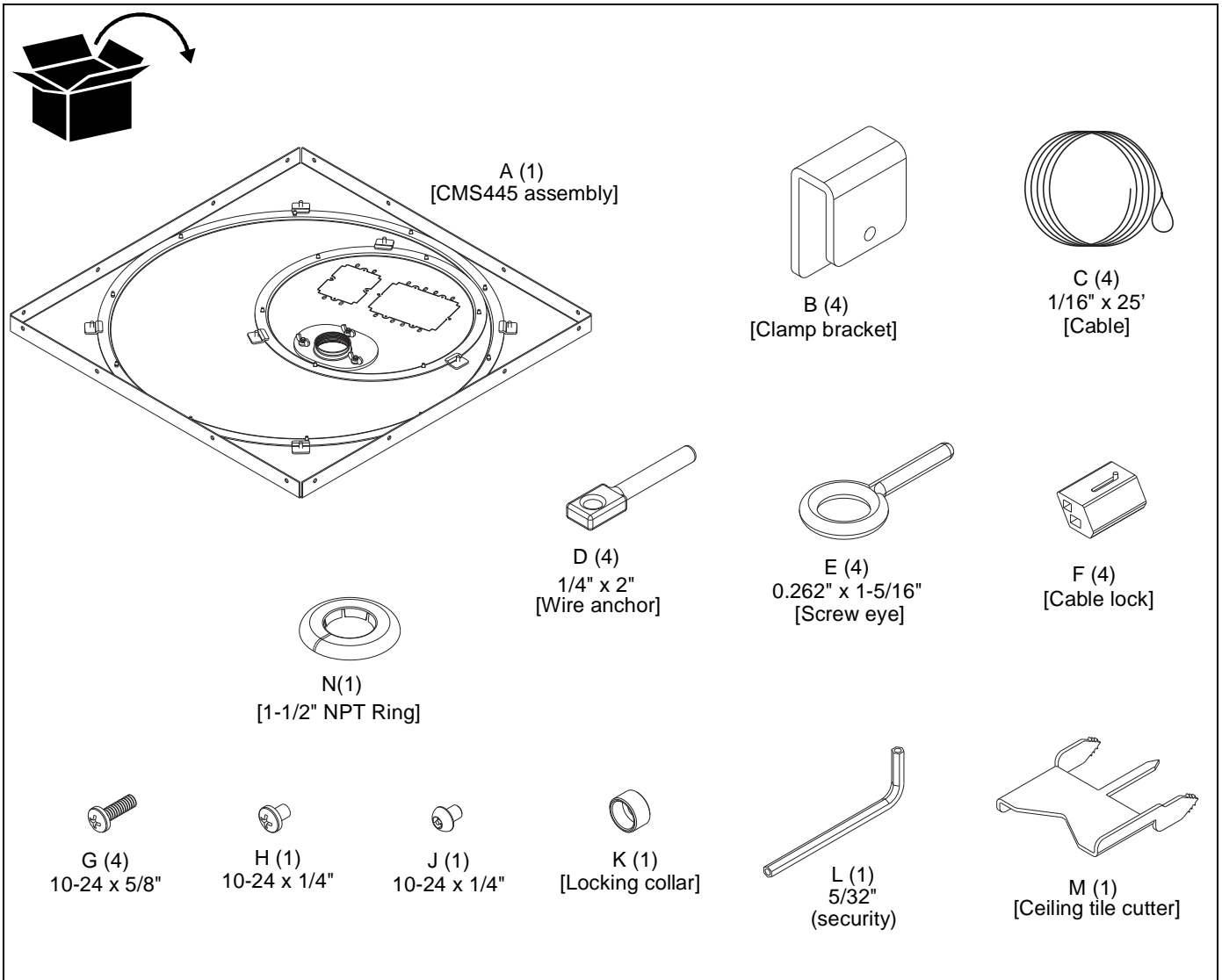
LEGEND

	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 Potloodmerkteken Marquage au crayon
	Loosen Fastener Aflojar elemento de fijación Befestigungsteil lösen Desapertar fixador Allentare il fissaggio Bevestiging losdraaien Desserrez les fixations		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		

TOOLS REQUIRED FOR INSTALLATION



PARTS



PREPARATION

NOTE: The CMS445 may either *replace* an existing suspended ceiling tile, or it may be installed *on top of* an existing suspended ceiling tile. Procedural differences are called out as applicable.

1. Determine exact location of extension column (not included) on suspended ceiling. Ensure column centerline falls within 8-1/2" radius of tile center point. (See Figure 1)

Be sure to consider the following items when determining column location (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).

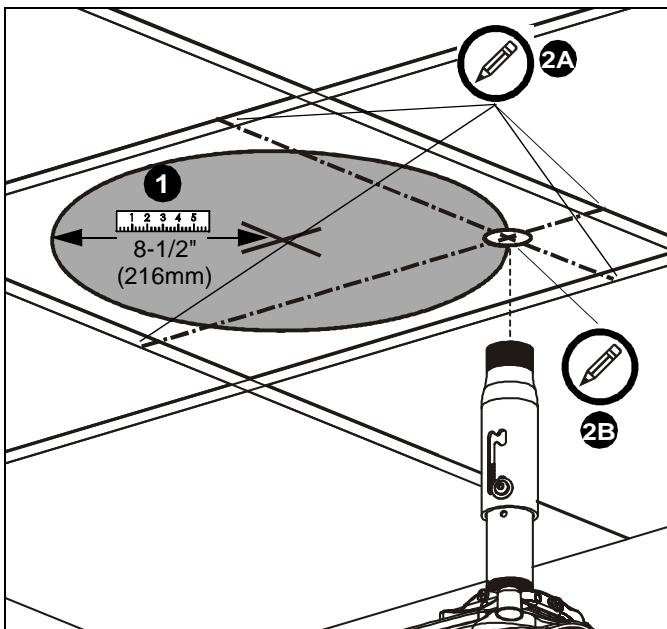


Figure 1

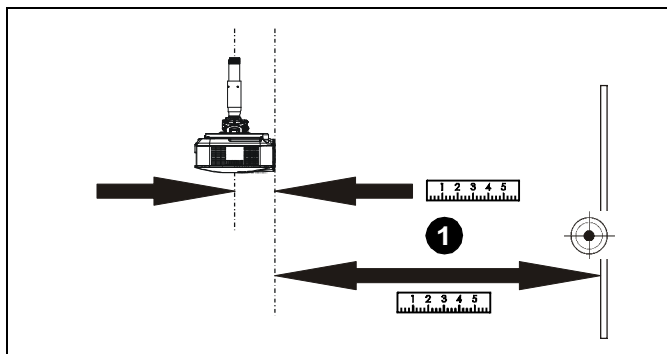


Figure 2

2. Mark location of column determined in Step 1 with pencil (See Figure 1):
 - A. REPLACEMENT OF EXISTING TILE:
Mark location on ceiling tile framework (4 places).
 - B. INSTALLATION ON TOP OF EXISTING TILE:
Mark location on lower (finished) side of ceiling tile (1 place).
3. Remove affected ceiling tile and any adjacent tiles required for access.
4. If you are replacing an existing tile, proceed to Step 7. Otherwise, continue below.
5. Press center tip of ceiling tile cutter (M) into *finished* side of ceiling tile at marked location. Cut extension column hole through tile using back and forth hand twisting motion.
6. Reinstall ceiling tile with extension column hole. Ensure tile is oriented for proper location of hole.
7. Loosen seven clamp screws in lower (finished) side of CMS445 assembly (A). (See Figure 3)

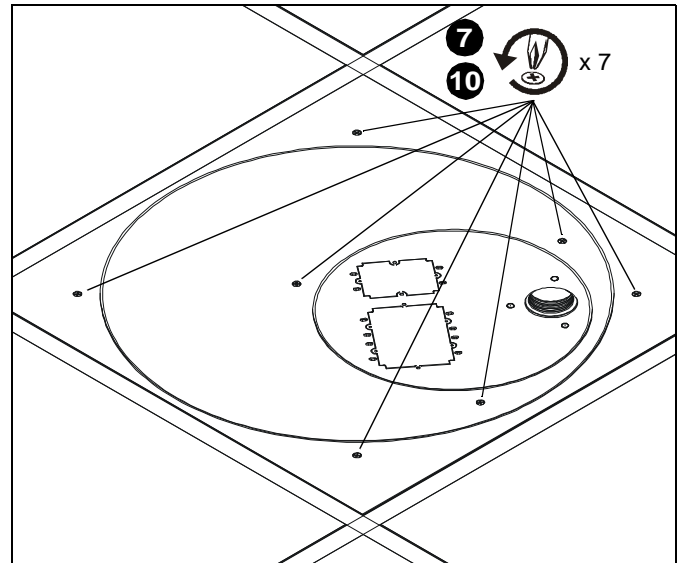


Figure 3

8. Insert CMS445 assembly (A) into suspended ceiling:
 - A. REPLACEMENT OF EXISTING TILE:
Lay directly on suspended ceiling framework.
 - B. INSTALLATION ON TOP OF EXISTING TILE:
Lay on top of suspended ceiling tile.

9. Rotate large and small circular plates to position extension column support to the following location (See Figure 4):

- A. REPLACEMENT OF EXISTING TILE:
Position according to marked framework.
- B. INSTALLATION ON TOP OF EXISTING TILE:
Position over ceiling tile hole.

13. Remove CMS445 assembly (A) and ceiling tile (if installed).

14. **OPTIONAL STEP FOR INSTALLATION ON TOP OF EXISTING TILE:**
Cut electrical box opening in ceiling tile at marked location. Install UL Listed Raco 560 or equivalent UL Listed electrical box (not included) to CMS445 (A) following instructions included with electrical box.

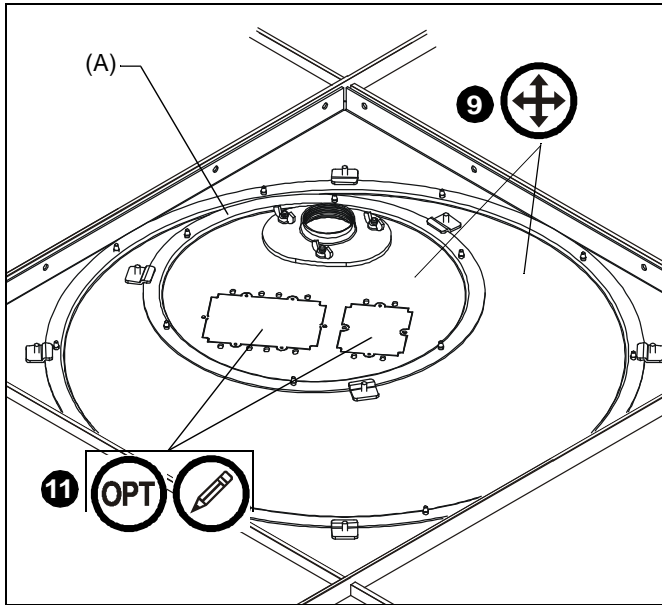


Figure 4

10. Tighten clamp screws (loosened in Step 7).
11. **OPTIONAL STEP FOR INSTALLATION ON TOP OF EXISTING TILE:**
Mark location of electrical cutout on ceiling tile with pencil. (See Figure 4)
12. Examine ceiling structure (concrete, steel truss, or wood) above CMS445 assembly (A) to identify four support cable anchor locations. Each location should be approximately 15° outboard of support holes in tray (A). (See Figure 5) Mark locations with pencil.

SUPPORT CABLE 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 hollow concrete block, mortar, or 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" diameter x 1-3/8" deep hole at each marked cable anchor support location (See Figure 6). Ensure hole is at least 2-1/2" from nearest concrete edge. Remove debris from hole.

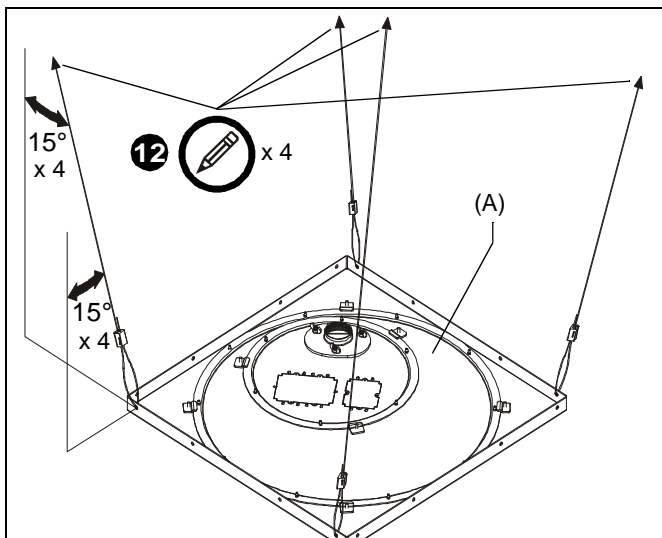


Figure 5

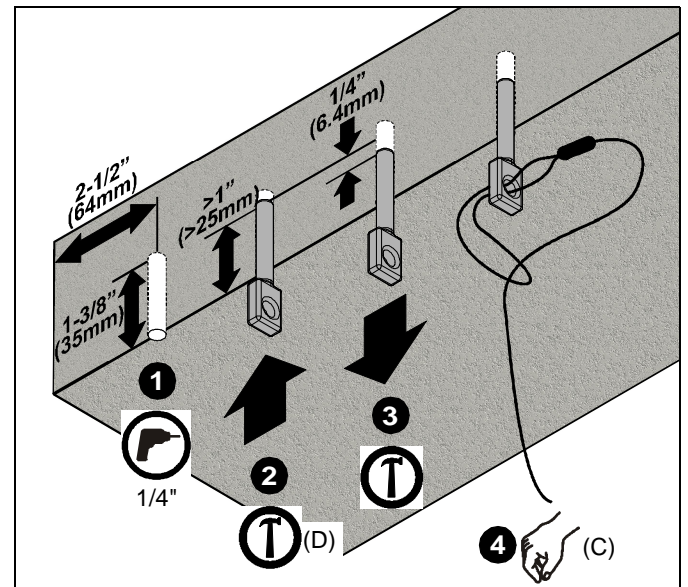


Figure 6

2. Tap anchor (D) into each hole to a depth of at least 1". (See Figure 6).

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

- Using claw portion of hammer, set each anchor (D) by pulling it out of hole approximately 1/4". (See Figure 6)
- Insert portion of manufactured loop on cable (C) through hole in anchor (D) (See Figure 6). Insert end of cable (C) through loop. Repeat for remaining support locations.

Steel Truss Ceiling Structure

- Route end of cable (C) over truss at marked cable anchor support location and then through cable loop. (See Figure 7) Repeat for remaining support locations.

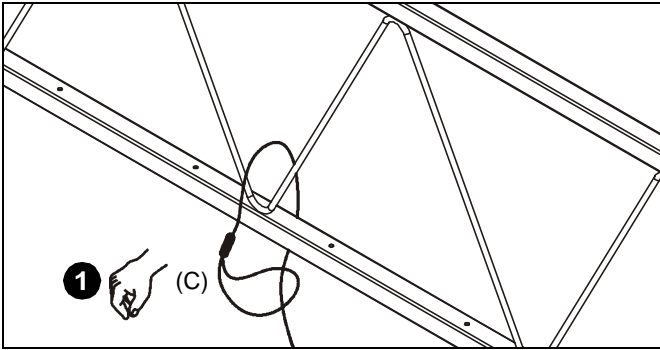


Figure 7

Wood Ceiling Structure



WARNING: Anchors must be installed into wood with a minimum thickness of 1-1/2" (38.1 mm) or greater.

- Drill 5/32" (4.0mm) diameter x 2" (51mm) deep hole at each marked cable anchor support location. (See Figure 8) Remove debris from hole.

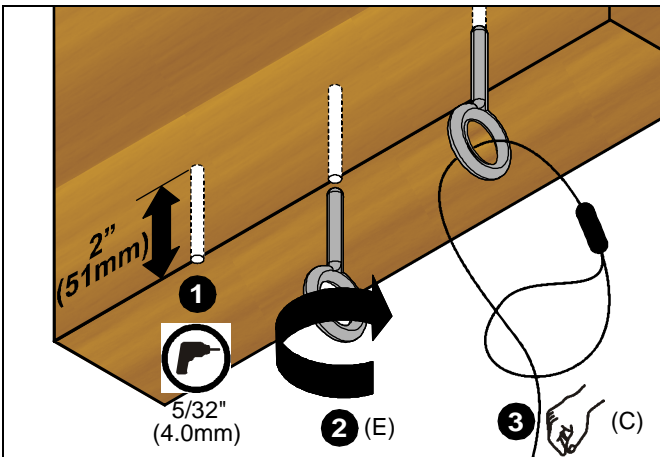


Figure 8

- Fully thread eye lag (E) into each hole. (See Figure 8)
- Route end of cable (C) through eye lag (E) and then through cable loop. (See Figure 8) Repeat for remaining support locations.

TRAY INSTALLATION

- If you are replacing an existing tile, proceed to Step 3. Otherwise, continue below.
- Reinstall ceiling tile with extension column hole. Ensure tile is oriented for proper location of hole.
- Reinstall CMS445 assembly (A).

- Install four clamp brackets (B) with four Phillips head 10-24 x 5/8" screws (G). (See Figure 4) Ensure brackets (B) engage flanges on CMS445 assembly (A) and primary (1-1/2" (38mm) high) rails of ceiling framework.

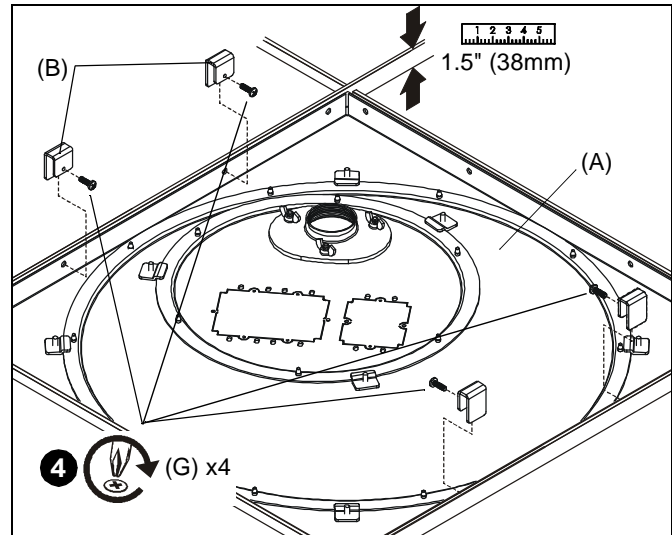


Figure 9



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

- Thread each cable (C) completely through cable lock (F), corresponding hole(s) in corner of CMS445 assembly (A), and completely through opposite side of cable lock (F) (See Figure 10). Adjust cable tension until CMS445 assembly (A) is supported *entirely* and *evenly* by all four support cables, but not so tight as to distort ceiling tile framework.

NOTE: Cables (C) can be threaded through either or both holes in corners of CMS445 assembly (A).

NOTE: Cable lock (F) will allow cable to enter from only one direction per side, indicated by arrows on lock. Depress spring loaded pins on cable lock (F) to release cable tension.

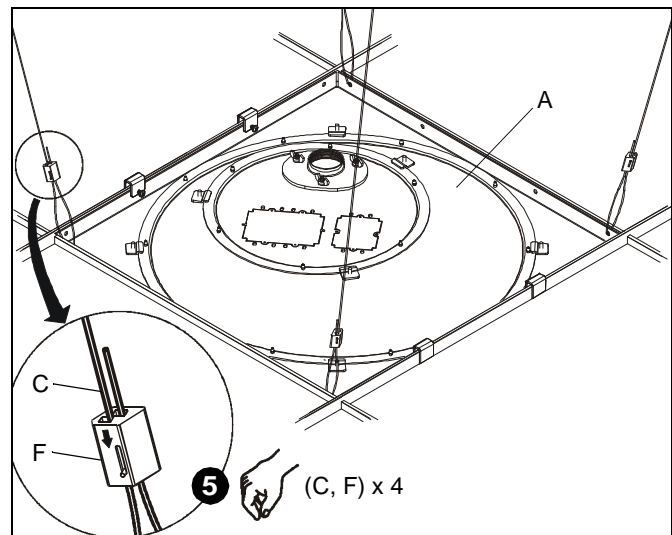


Figure 10

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 CMS445 up to (and including) the display/projector, does not exceed 50 lbs (22 kg).

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

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

2. Using hex key (L), secure extension column by *one* of the following methods (See Figure 3):
 - Install screw (H) into extension column support, tightening firmly against column.
 - **OPTIONAL:** Install security screw (J) through locking collar (K) into extension column support, tightening firmly against column.

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

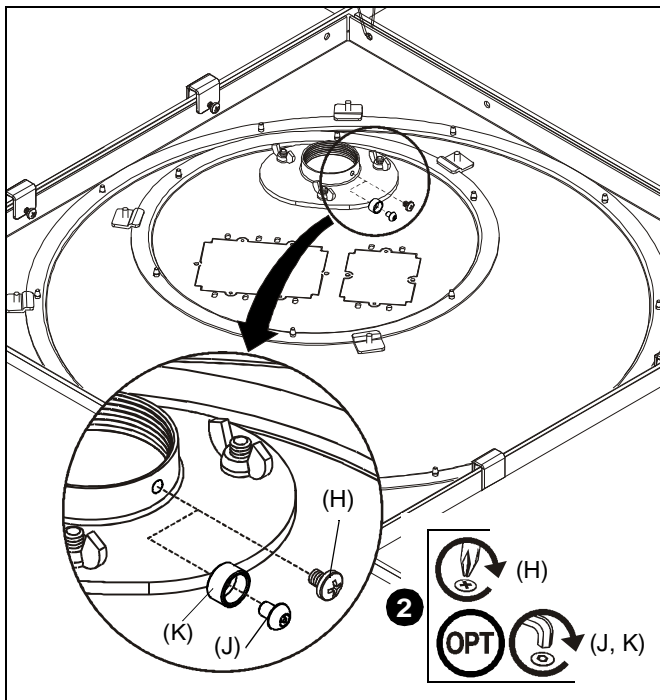


Figure 11

3. **OPTIONAL FOR INSTALLATION ABOVE EXISTING TILE:** Install NPT ring (N) on extension column below ceiling tile. (See Figure 12) If necessary, bend six tabs inward to secure ring to column.

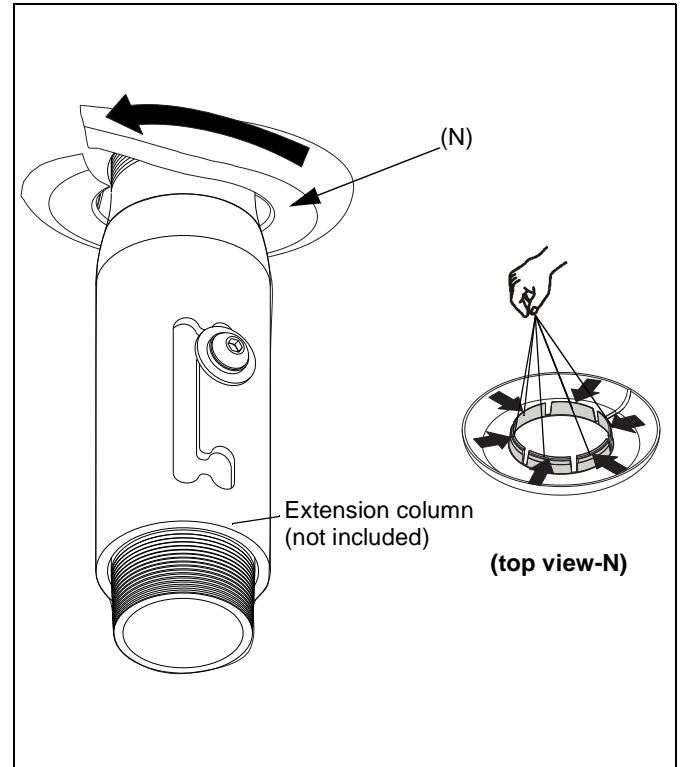


Figure 12

4. Reinstall remaining ceiling tiles as required.



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8800-002989 Rev00
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