INSTALLATION INSTRUCTIONS

CMS491

CMS492

Ceiling Tile Storage Kits

⊙CHIEF®

A brand of **❑legrand**®

CMS491/492 Series

DISCLAIMER

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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 accessory can result in serious personal injury or damage to equipment! It is the installer's responsibility to make sure the structure to which this accessory is attached can support five times the combined weight of all equipment. Reinforce the structure as required before installing the component.

⚠ **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 located in the **complete accessory** does not exceed 100 lbs (45 kg).
  - all components attached to the CMS491/CMS492 Series component shelf may not exceed 25 lbs (22 kg) **per shelf**;
  - all components attached to the **extension column**, (CMS491C/CMS492C models only) 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:** For indoor use only.

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

IMPORTANT ! : The CMS491/492 has been designed to be mounted recessed into a suspended ceiling secured by a WireVice system.

IMPORTANT ! : The CMS491/492 has been designed to support a single electrical receptacle or a double receptacle.

NOTE: Spacings - To ensure safe operation of the equipment installed in the enclosure, per National Electric Code, ANSI/NFPA 70, a minimum separation between power cords and signal or communication cables may be required.

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. A green grounding screw is provided in the enclosure for the purpose, if required.

NOTE: This Cabinet System is for use with Listed ITE or Audio/Video equipment only.

NOTE: When selecting a Listed 120 Vac Receptacle for use as the main power source for the CMS Series boxes (to power the A/V equipment), make sure that AC Receptacle is rated at least 15A and it is used in the building's AC branch circuit that is connected to a circuit breaker rated at least 15A. Do not connect more than 12A from the 15A Receptacle, or 16A from the 20A Receptacle.

In the U.S., the equipment shall be installed per the applicable requirements of the National Electrical Code, ANSI/NFPA 70.

In Canada, the equipment shall be installed per the applicable requirements of the Canadian Electrical Code, CSA C22.1.

NOTE: The CMS491/492 Series consists of:
  - CMS491 1x2 Standard Ceiling Box
  - CMS491C 1x2 Ceiling Box with Column Drop
  - CMS492 2x2 Standard Ceiling Box
  - CMS492C 2x2 Ceiling Box with Column Drop

NOTE: The CMS491C and CMS492C each accommodate a Listed Chief CMS Series extension column (not included).
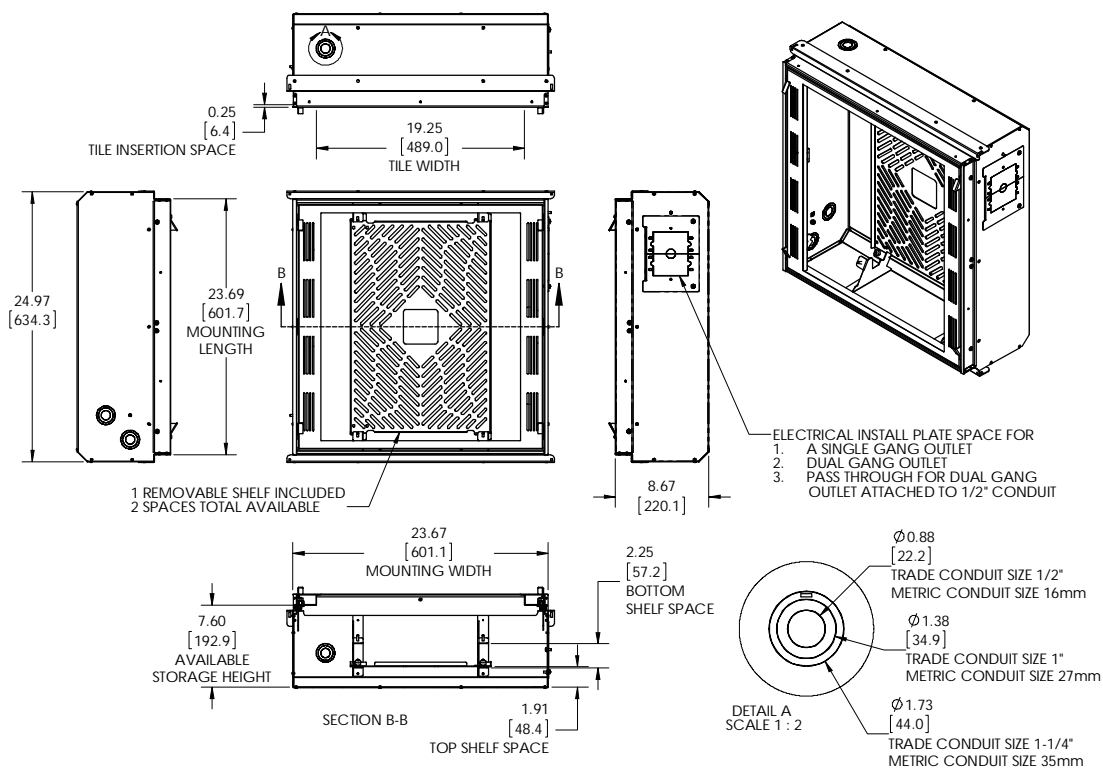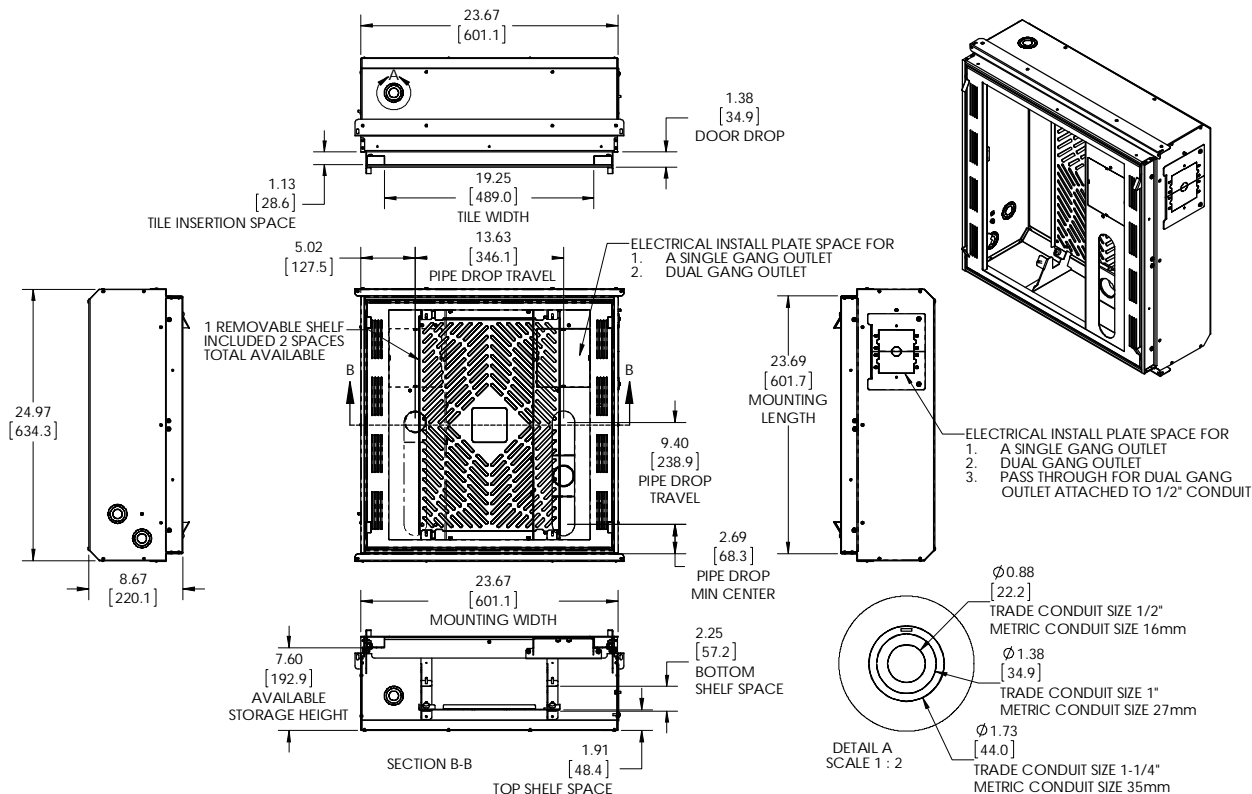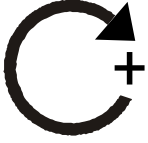
--SAVE THESE INSTRUCTIONS--

DIMENSIONS

CMS491

1.38
[34.9]
DOOR DROP

1.13
[28.6]
TILE INSERTION SPACE

19.25
[489.0]
TILE WIDTH

0-0.25
[6.4]
SIDE TRIM EXTENSION
(MIN-MAX) DEPTH ADJUST

12.97
[329.5]

8.67
[220.1]

B   B

1 REMOVABLE SHELF INCLUDED
2 SPACES TOTAL AVAILABLE

ELECTRICAL INSTALL PLATE SPACE FOR
1.   A SINGLE GANG OUTLET
2.   DUAL GANG OUTLET
3.   PASS THROUGH FOR DUAL GANG
     OUTLET ATTACHED TO 1/2" CONDUIT

23.67
[601.1]
MOUNTING WIDTH

7.58
[192.4]
AVAILABLE
STORAGE HEIGHT

2.25
[57.2]
BOTTOM SHELF SPACE

SECTION B-B

1.91
[48.4]
TOP SHELF SPACE

∅0.88
[22.2]
TRADE CONDUIT SIZE 1/2"
METRIC CONDUIT SIZE 16mm

∅1.38
[34.9]
TRADE CONDUIT SIZE 1"
METRIC CONDUIT SIZE 27mm

∅1.73
[44.0]
TRADE CONDUIT SIZE 1-1/4"
METRIC CONDUIT SIZE 35mm

DETAIL A
SCALE 1 : 2

CMS491C

1.38
[34.9]
DOOR DROP

1.13
[28.6]
TILE INSERTION SPACE

19.25
[489.0]
TILE WIDTH

ELECTRICAL INSTALL PLATE SPACE FOR
1.   A SINGLE GANG OUTLET
2.   DUAL GANG OUTLET

1 REMOVABLE SHELF INCLUDED
2 SPACES TOTAL AVAILABLE

12.97
[329.5]

8.67
[220.1]

B   B

2.59
[65.9]
PIPE DROP
CENTER

13.63
[346.1]
PIPE DROP TRAVEL

5.02
[127.5]
PIPE DROP
MIN CENTER

0.25
[6.4]
SIDE TRIM EXTENSION

ELECTRICAL INSTALL PLATE SPACE FOR
1.   A SINGLE GANG OUTLET
2.   DUAL GANG OUTLET
3.   PASS THROUGH FOR DUAL GANG
     OUTLET ATTACHED TO 1/2" CONDUIT

23.67
[601.1]
MOUNTING WIDTH

7.61
[193.3]
AVAILABLE
STORAGE HEIGHT

2.25
[57.2]
BOTTOM SHELF SPACE

SECTION B-B

1.91
[48.4]
TOP SHELF SPACE

∅0.88 [22.2]
TRADE CONDUIT SIZE 1/2"
METRIC CONDUIT SIZE 16mm

∅1.38 [34.9]
TRADE CONDUIT SIZE 1"
METRIC CONDUIT SIZE 27mm

∅1.73 [44.0]
TRADE CONDUIT SIZE 1-1/4"
METRIC CONDUIT SIZE 35mm

DETAIL A
SCALE 1 : 2

DIMENSIONS

CMS492

0.25
[6.4]
TILE INSERTION SPACE

19.25
[489.0]
TILE WIDTH

24.97
[634.3]

23.69
[601.7]
MOUNTING
LENGTH

B   B

1 REMOVABLE SHELF INCLUDED
2 SPACES TOTAL AVAILABLE

8.67
[220.1]

ELECTRICAL INSTALL PLATE SPACE FOR
1.   A SINGLE GANG OUTLET
2.   DUAL GANG OUTLET
3.   PASS THROUGH FOR DUAL GANG
       OUTLET ATTACHED TO 1/2" CONDUIT

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[601.1]
MOUNTING WIDTH

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[57.2]
BOTTOM
SHELF SPACE

7.60
[192.9]
AVAILABLE
STORAGE HEIGHT

SECTION B-B

1.91
[48.4]
TOP SHELF SPACE

Ø0.88
[22.2]
TRADE CONDUIT SIZE 1/2"
METRIC CONDUIT SIZE 16mm

Ø1.38
[34.9]
TRADE CONDUIT SIZE 1"
METRIC CONDUIT SIZE 27mm

Ø1.73
[44.0]
TRADE CONDUIT SIZE 1-1/4"
METRIC CONDUIT SIZE 35mm

DETAIL A
SCALE 1 : 2

CMS492C

23.67
[601.1]

1.38
[34.9]
DOOR DROP

1.13
[28.6]
TILE INSERTION SPACE

19.25
[489.0]
TILE WIDTH

5.02
[127.5]

13.63
[346.1]
PIPE DROP TRAVEL

ELECTRICAL INSTALL PLATE SPACE FOR
1.   A SINGLE GANG OUTLET
2.   DUAL GANG OUTLET

1 REMOVABLE SHELF
INCLUDED 2 SPACES
TOTAL AVAILABLE

B   B

24.97
[634.3]

9.40
[238.9]
PIPE DROP
TRAVEL

23.69
[601.7]
MOUNTING
LENGTH

ELECTRICAL INSTALL PLATE SPACE FOR
1.   A SINGLE GANG OUTLET
2.   DUAL GANG OUTLET
3.   PASS THROUGH FOR DUAL GANG
       OUTLET ATTACHED TO 1/2" CONDUIT

8.67
[220.1]

2.69
[68.3]
PIPE DROP
MIN CENTER

23.67
[601.1]
MOUNTING WIDTH

2.25
[57.2]
BOTTOM
SHELF SPACE

7.60
[192.9]
AVAILABLE
STORAGE HEIGHT

SECTION B-B

1.91
[48.4]
TOP SHELF SPACE

Ø0.88
[22.2]
TRADE CONDUIT SIZE 1/2"
METRIC CONDUIT SIZE 16mm

Ø1.38
[34.9]
TRADE CONDUIT SIZE 1"
METRIC CONDUIT SIZE 27mm

Ø1.73
[44.0]
TRADE CONDUIT SIZE 1-1/4"
METRIC CONDUIT SIZE 35mm

DETAIL A
SCALE 1 : 2

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

	Flathead Screwdriver

	Remove
	Quitar
	Entfernen
	Remover
	Rimuovere
	Verwijderen
	Retirez

	By Hand
	A mano
	Von Hand
	Com a mao
	A mano
	Met de hand
	A la main

	Hammer
	Martillo
	Hammer
	Martelo
	Martello
	Hamer
	Marteau

	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
	Sicherheitsschlussel
	Chave de seguranca
	Chiave di sicurezza
	Veiligheidssleutel
	Cle de securite

TOOLS REQUIRED FOR INSTALLATION

optional
1/4"
5/32"

#2 Flathead

#2 Phillips

1 2 3 4 5

PARTS INCLUDED

NOTE: Some items may vary depending on specific model number.

Ⓟ (2x)
Projector Mount Plate
Tile Side Trim

Ⓐ
Install Box
(CMS492 shown)

Ⓑ
Component
Shelf

Ⓒ
Projector Mount Plate

Hardware Bag #1

Ⓓ
#10-24 x 1/4
Pan Head
Machine Screw

Ⓔ
#10-24 x 1/4
Button Head
Security Screw

Ⓕ
Security
Spinner

Ⓜ
5/32" Security Key

Ⓗ (4x)
#10-24 x 1"
Pan Head
Tapping Screw

Hardware Bag #2

Ⓖ (4x)
#10-24 x 5/8
Pan Head
Tapping Screw

Ⓘ (4x)
#10-24
Thumb Nut

Ⓙ (4x)
.262 x 1 5/16
Eye Lag

Ⓚ (4x)
1/4" x 2"
Wire Anchor

Ⓛ (4x)
Cable Lock
(Wire Vice)

Ⓝ (4x)
1/16" x 25 ft
Cable

OPTIONAL PARTS PER CUSTOM CONFIGURATION (NOT INCLUDED)

Conduit Connectors

3" x 2" Switch Box
(2" deep)
Raco #420 or equiv.

Electrical
Outlet

Outlet Box Cover

Chief
CMS1RU
Shelf Rack
Adaptor (4x)

Flexible Conduit 1/2", 1" or 1-1/4"

Zip Ties

6
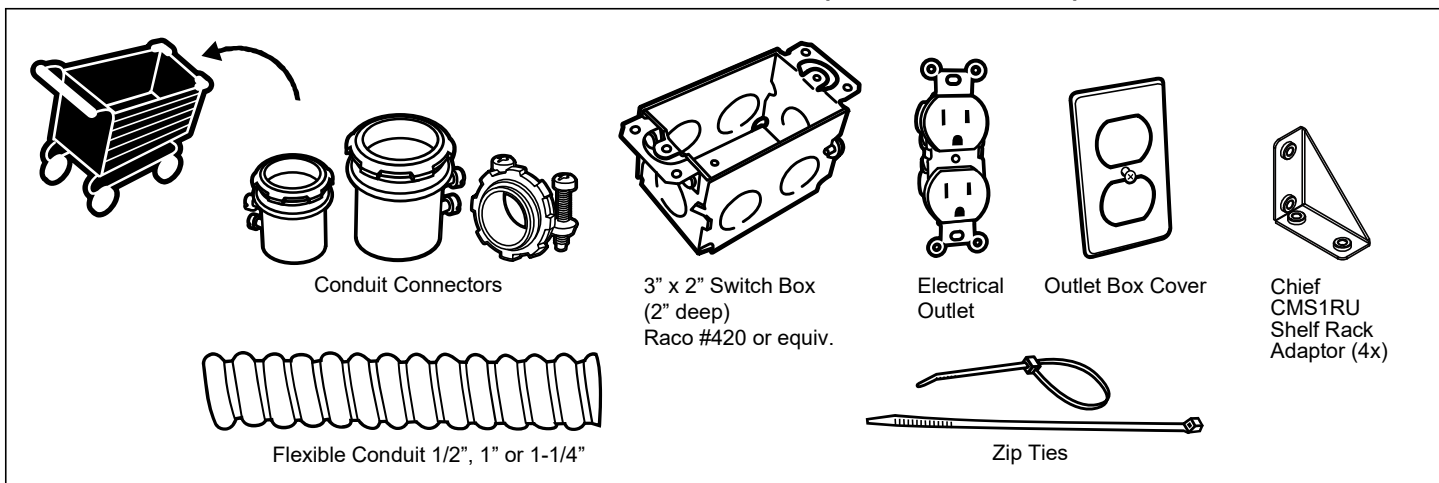
PREPARING FOR INSTALLATION

Installation Requirements

The CMS491/492 has been designed to be mounted recessed into a suspended ceiling consisting of 2' x 2' ceiling tiles and secured by a Wire Vice system.

NOTE: Regarding location selection for models CMS491C/ CMS492C: The design of the projector mount plate/ceiling AV enclosure system does not require pre-measurement of the mount location other than choosing the tile placement of the enclosure. If you are pre-measuring for projector mount location be sure to consider the items below.

- Dimensional offset of the display/projector relative to column (due to mount and interface).
- For projectors: any recommended dimensions of projector relative to target (see installation instructions included with the projector).
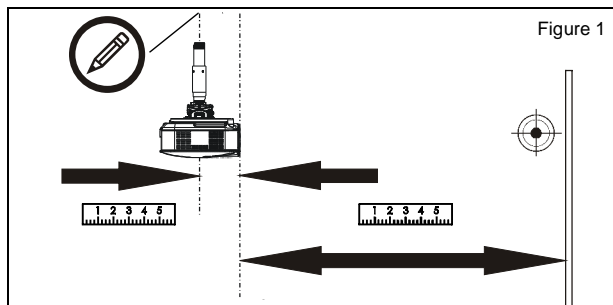
Figure 1

Preparing Framework

1 Remove one 2' x 2' tile from ceiling.

2 Move/reconfigure existing wires or conduit if obstructing location.

3 Pre-install cable hanger system.

Figure 2
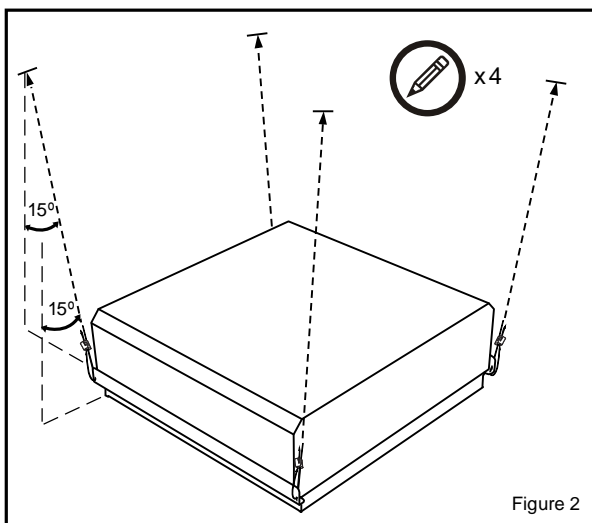
Examine ceiling structure (solid concrete, wood or steel truss) above kit to be installed to identify four support cable anchor locations. Each location should be approximately 15º outside of support holes in kit assembly. Mark locations with a pencil.

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 pilot hole at each marked cable anchor support location (See Figure 3). Ensure hole is at least 2-1/2" from nearest concrete edge. Remove debris from hole.
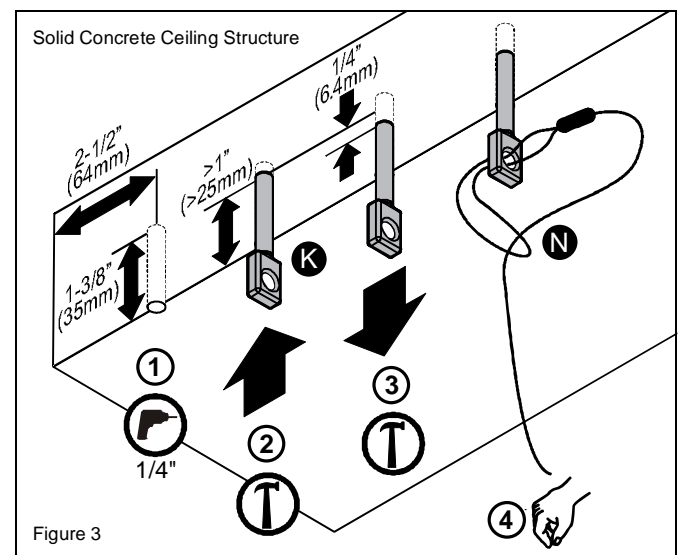
Figure 3

2 Tap anchor (K) into each hole to a depth of at least 1" (25mm) (See Figure 3).

⚠

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 (K) by pulling it out of hole approximately 1/4" (6.4mm). (See Figure 3)

4 Insert portion of manufactured loop on cable (N) through hole in anchor (K) (See Figure 3). Insert end of cable (N) through loop. Repeat for 3 remaining support locations.

Wood Ceiling Structure

⚠️

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

(1) Drill 5/32" diameter x 2" deep hole at each marked cable anchor support location (See Figure 4). Remove debris from hole.
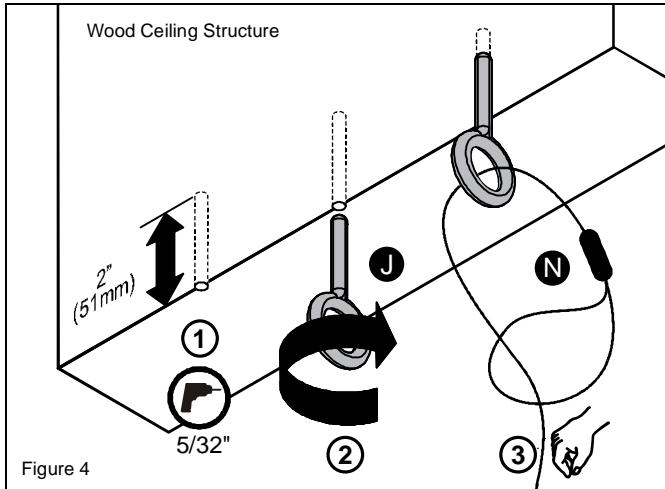
Figure 4

(2) Fully thread eye lag (J) into each hole (See Figure 4).

(3) Route end of cable (N) through eye lag (J) and then through cable loop (See Figure 4). Repeat for 3 remaining support locations.

Steel Truss Ceiling Structure

(1) Route end of cable (N) over truss at marked cable anchor support location and then through cable loop. (See Figure 5) Repeat for 3 remaining support locations.

Figure 5
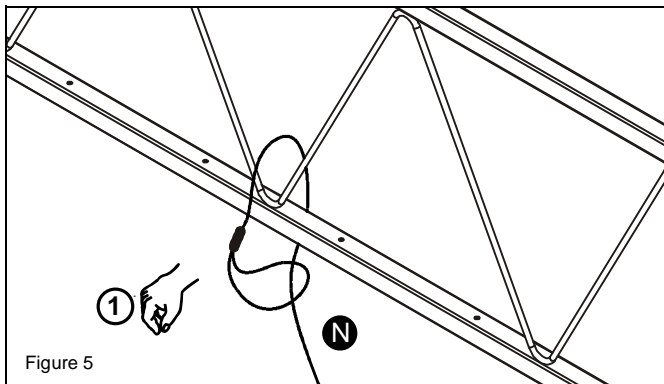
Installing Electrical Box and Outlets

Determine desired location for installing electrical outlets within box.

Figure 6

Box sidewall install option

Projector mount plate install option
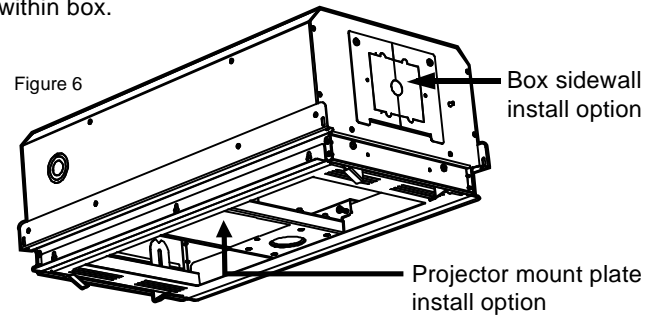
Box Sidewall Electrical Install Option

(1) Remove two-piece electrical plate from box sidewall. Save screws for re-attachment. Break away inner portions of plate halves. Attach a pair of outlets to an electrical box, then attach plate halves to outlet box configuration.

break away

break away

Figure 7

⚠️
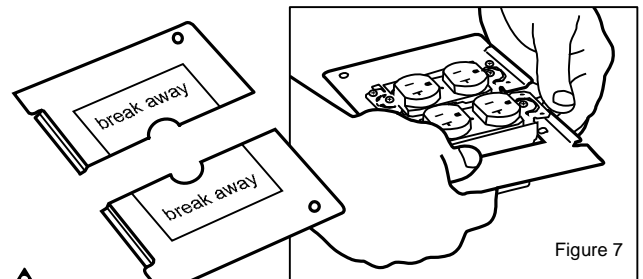
CAUTION: Injury may occur on sharp edges. Carefully discard the removable tabs.

(2) Insert tab on bottom edge of electrical plate into opening on side wall of box. Rotate to flatten against box, and affix plate to box by re-using screws removed in Step 1.

Figure 8
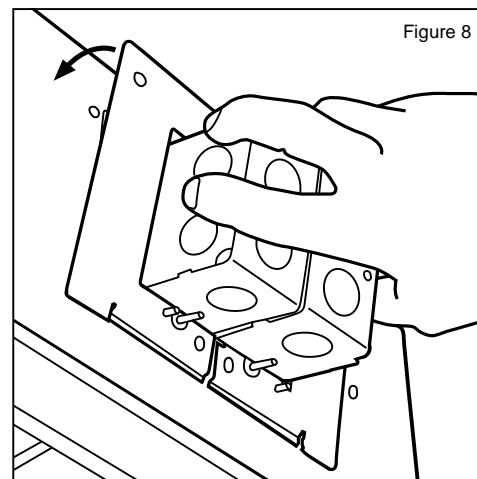
Projector Mount Plate Electrical Install Option

(1) Remove attached electrical plate from underside of projector mount plate. Save nuts for reinstall.

(2) Remove break away panel from projector mount plate.
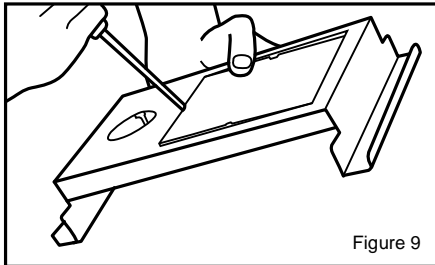

⚠ CAUTION: Avoid sharp edges.

Figure 9

(3) Attach a pair of outlets to an electrical box, then attach accompanying one-piece electrical plate to outlet box configuration.

Figure 10
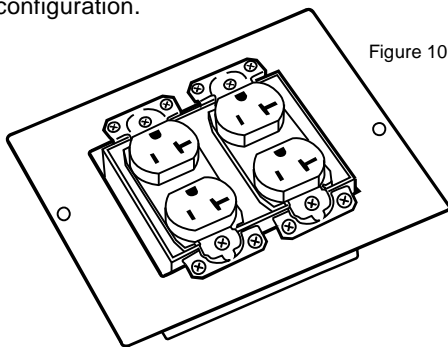
(4) If outlet box configuration is attached to wiring/conduit prior to box attachment, remove two-piece electrical plate from box sidewall, feed configuration through large opening. Then re-attach two-piece plate to close around conduit.
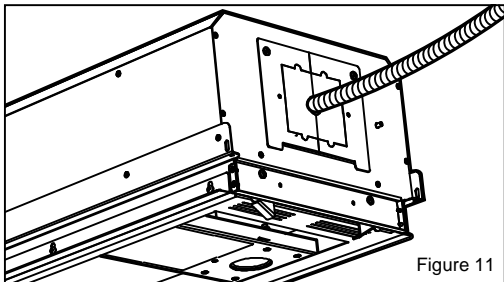
Figure 11

(5) Attach complete outlet box configuration to projector mount plate as shown below in figure 12. Secure by re-attaching nuts removed in Step 1.

Figure 12
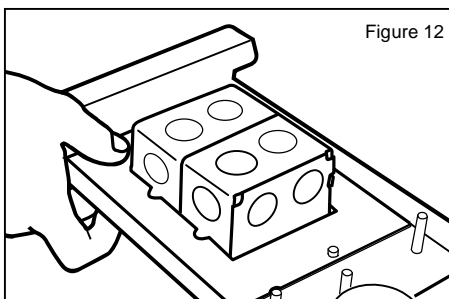
Cleat adjustment for various tile heights

(1) Loosen screws along side cleat, adjust and retighten as needed to accommodate for tile height.
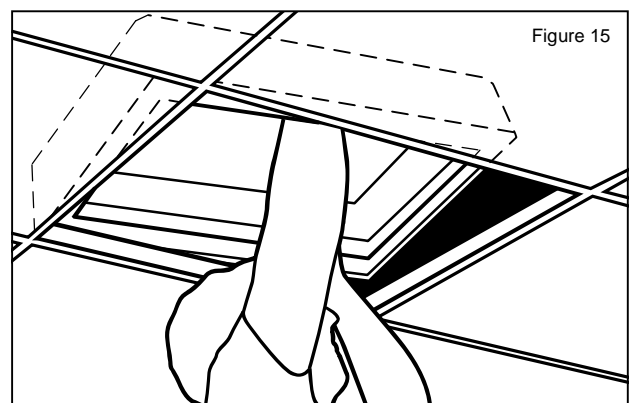

Figure 13

Loosen and adjust
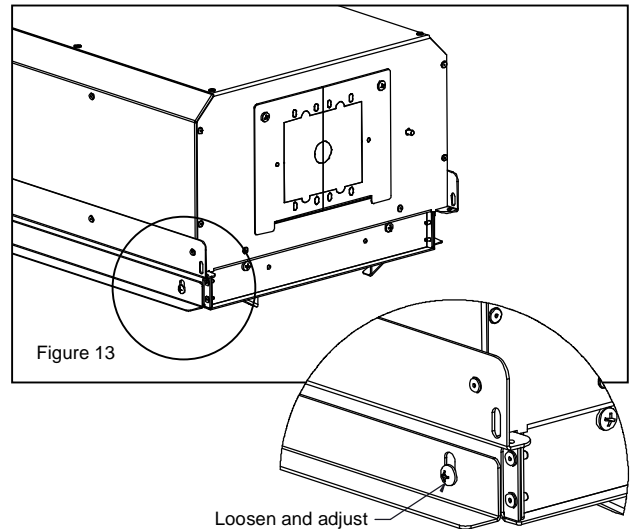
NOTE: Remove the cleat entirely to allow the enclosure to be mounted closer to the tile grid frame.

Placing CMS491/492 into Ceiling Structure

(1) Carefully insert box through opening. Note angled back edges design which allow box to fit through 2' x 2' opening.
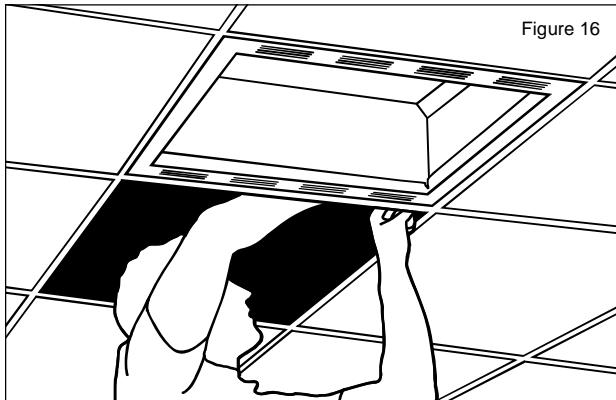

Figure 14

chamfered corners for easy clearance
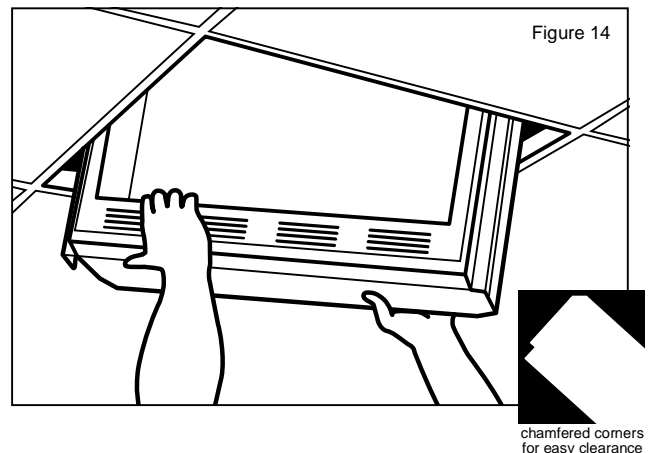
(2) Rotate and drop box to gently rest into place onto drop ceiling framework.
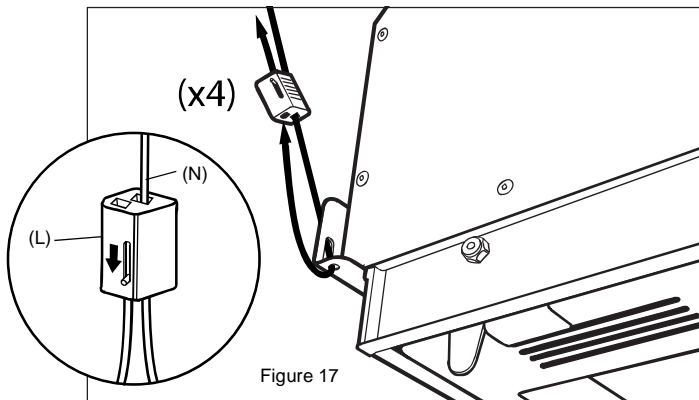

Figure 15

9

Installing Cable to Box Frame

1. Remove adjacent ceiling tiles as needed to access cable attachment locations.

Figure 16

2. Attach cables as shown (figure 17) using cable locks (L) to secure cable, adjusted to proper length - allowing box to be level, and **NOT** RESTING ON CEILING FRAMEWORK.


(x4)

(N)

(L)

Figure 17

⚠ **WARNING:** Not properly supporting box with cable hanger system may lead to serious injury or death.

⚠ **CAUTION:** Failure to properly tension cables (N) may result in damage to ceiling tile framework.

3. Thread each cable (N) completely through cable lock (L) corresponding hole in corner of CMS491/492 frame, and completely through opposite side of cable lock (L) (see figure 17).

4. Adjust cable tension until CMS491/492 frame is supported entirely and evenly by all four support cables, but not so tight as to distort ceiling tile framework.

5. Secure CMS491/492 assembly in place by feeding #10-24 x 5/8 pan head tapping screws (G) through holes as shown and tighten until secure against ceiling tile framing (2 screws each on opposite sides of the assembly).


Figure 18

Ceiling Frame
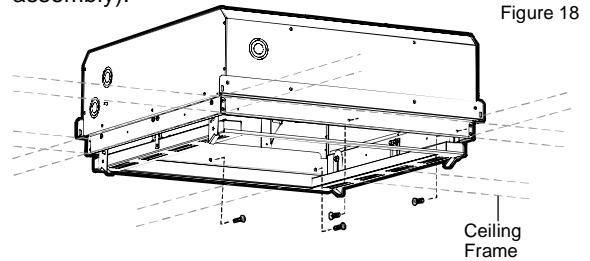
Adding Components

NOTE: The CMS491/CMS492 box is designed for attaching a component shelf at two different heights. The following instructions refer to installing the Listed accessories CMSUNV1 and CMSUNV2.

⚠ **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 weight of all components attached to the CMS491/CMS492 Series component shelf, does not exceed 25 lbs (22 kg) **per shelf**.

1. Attach component to shelf prior to install. Component may be attached either on top of shelf or below shelf. Attach components per component manufacturer recommended method(s).

Figure 19

Component Shown Above   Component Shown Below
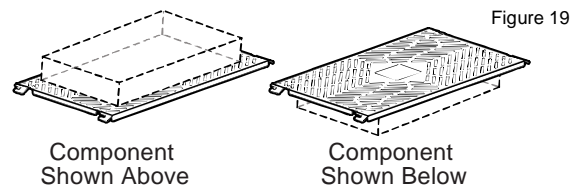
2. Attach one #10-24 thumb nut (I) to each threaded post.

3. Position shelf (with component attached) into box and hook four corner slots onto the posts of the shelf supports.

Figure 20
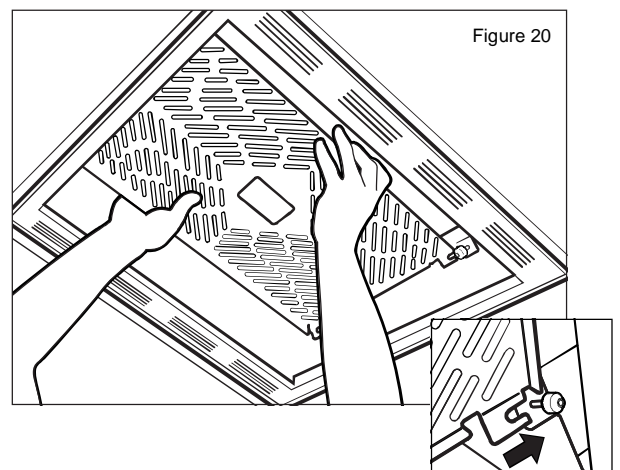
4. Hand tighten nuts (I) to secure shelf in place.

Finish Install Site

(1) Pre-cut a ceiling tile to fit inside the drop panel framework

SIZE:
CMS491: 19 1/8" x 10 3/8"
CMS492: 19 1/8" x 22 1/8"

NOTE: If installing models CMS491C/492C cut ceiling tile to fill gaps around mounting plate. Install tile trim (P) on edges of tile that touch mounting plate, and fold trim tabs over tile. (see Figure 21). Install tile with trim attached AFTER installing projector mount plate.

Fold trim tabs over tile

Ceiling tile

Figure 21
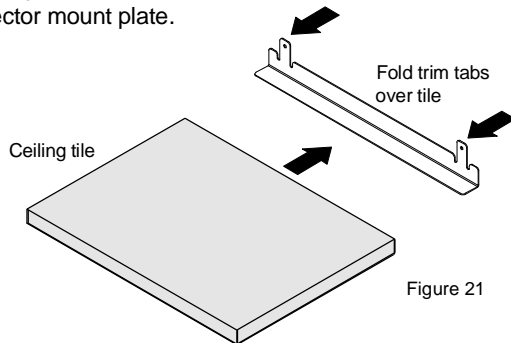
(2) Finish frame assembly by opening four latches in door panel dropping panel down. Slide tile (cut to size) into location.


Figure 22
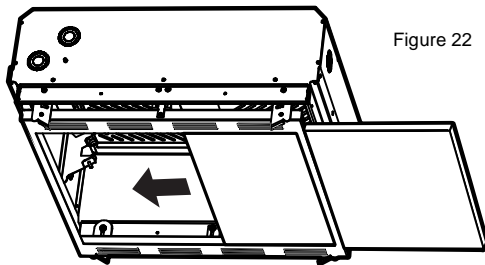
(3) Push panel assembly back into place and rotate latches to lock position.

Projector Mount Plate and Extension Column Installation

NOTE: The following instructions refer to installing Models CMS491C and CMS492C, or installing the Listed accessories CMS441 and CMS442 into Models CMS491 and CMS492, respectively.

OPTIONAL: Install the electrical outlets as outlined in the **Installing Electrical Box and Outlets** section of this instruction manual.

(1) Install four 10-24 x 1" screws (H) into projector mount plate (2 at each end), and install projector mount plate into position inside box (see Figure 23).
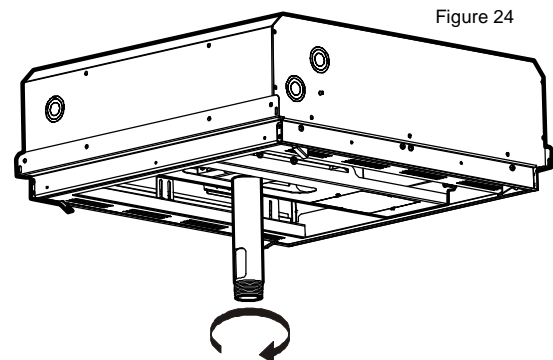

Figure 23
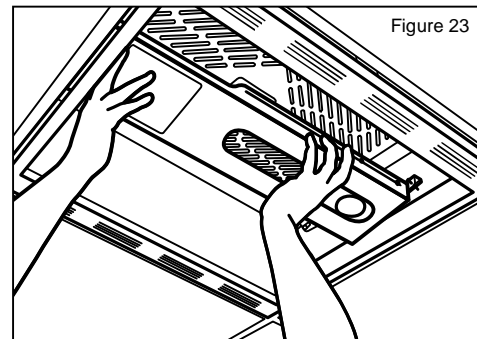
(2) Once into position, drop plate down onto mounting rails.

⚠ **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 CMS491C/CMS492C extension column, does not exceed 50 lbs (22 kg).

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

Figure 24

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④ Secure extension column by one of the following methods (See Figure 25):

    A. Install one 10-24 x 1/4" Phillips pan head screw (D) into extension column support, tightening firmly against column.
    B. OPTIONAL: Install one 10-24 x 1/4" button head security screw (E) through security spinner (F) into column support, tightening firmly against column.

NOTE: Security spinner (F) is designed to spin, even when screw is tight.

Figure 25
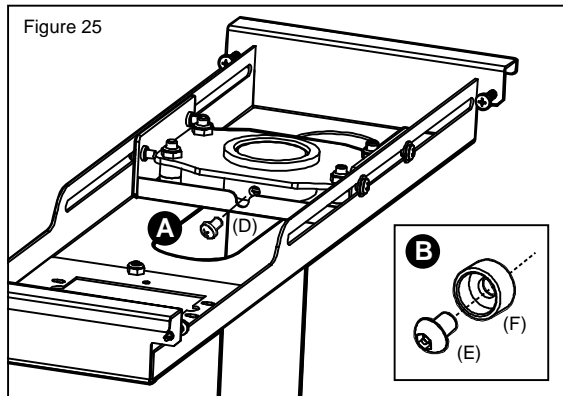
⑤ Install and power the projector to generate the image profile to match to the screen (make sure to adjust the resolution settings and aspect ratio of the projector to desired settings)

⑥ Move the mount plate as required to adjust the image to the target screen (note that the CMS491C/ CMS492C enclosure may be moved within the tile to aid in location of the mount plate).

⑦ Tighten the four screws on both ends of the mount plate, and the four screws on the sides of the CMS492C projector mount plate to secure the projector position within the enclosure.

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