**SUSPENDED CEILING TILE REINFORCING KIT CMA-450**

The CMA-450 Reinforcing Kit provides a sturdy support for LCD/DLP hanging brackets (and certain other products) when installing these products in a suspended ceiling.

The Kit includes a 24 x 24 in. (610 x 610 mm) reinforcing plate that will be suspended by four tie wires from the true ceiling above the suspended ceiling tiles. Turnbuckles allow the installation to be fine-tuned.

The reinforcing plate can be installed in place of a standard 2 x 2 in. ceiling tile, or it can be installed above the suspended ceiling.

**Important Warnings and Precautions!**

**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:** Improper installation can result in serious personal injury! Make sure that the ceiling structural members can support a redundant weight factor five times the total weight of the equipment: if not, reinforce the ceiling before installing the suspended ceiling kit.

**WARNING:** Be aware also of the potential for personal injury or damage to the unit if it is not adequately mounted.

**WARNING:** The installer is responsible for verifying that the ceiling to which the CMA-450’s reinforcing plate is anchored will safely support the combined load of all attached components or other equipment.

**WARNING:** The weight of the LCD/DLP projector must not exceed 250 lbs (113.4 kg), the maximum load capacity of the reinforcing plate.

**CAUTION:** To avoid personal injury or damage to the suspended ceiling kit, be sure that it is installed square and parallel in all dimensions. Avoid stressing the unit at any time while you are installing it.

**CAUTION:** Check the unit for shipping damage before you begin the installation.

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**Before You Begin**

**CAUTION:** To prevent damage to the Kit, which could affect or void the Factory warranty, and to the equipment that will be attached to it, thoroughly study all instructions and illustrations before you begin the installation. Pay particular attention to the ”Important Precautions” on Page 1.

The ceiling tray is designed to fit within a 24 x 24 in. (610 x 610 mm) section of a conventional suspended ceiling system. If mounted in a 2’ X 2’ suspended ceiling, runners should have a “T” cross-section and a minimum height of 1.5 in. (38 mm). If 24 x 48 in. (610 x 1219 mm) ceiling tiles are used, cut one tile in half and add another 24-in. (610-mm) ceiling runner, to make a 24 x 24 in. section. If mounted above the ceiling, the mount may be adjusted to fit anywhere in the 48” tile space.

If you have any questions about this installation, contact Chief Manufacturing at 1-800-582-6480.

In certain installations, it may be easier to install the ceiling anchors (page 3) before you attach the hanger brackets to the ceiling tray.

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**Tools required for installation**

- Wire cutter
- Phillips screwdrivers, No. 1 and No. 2 tip

**Attach the Hanger Brackets to the Ceiling Tray**

1. Using two 1/4” x 20 x 3/8” Phillips-head screws (B), attach four hanger brackets (D) to the four corner points of the tray (A). The overhead support must be capable of supporting five times the combined weight of the mount and equipment combined.

2. Remove the tiles from the area where the ceiling tray is being mounted.

3. Cut a 1 1/2” (38.1 mm), or slightly larger, hole in the tile.

4. Remove the ceiling tray and tile and cut a 1 1/2” (38.1 mm), or slightly larger, hole in the tile.

5. Install electrical outlet box(es) in the openings from the knockout panels.

6. Install electrical outlet box(es) in the openings from the knockout panels.

7. With the tray properly positioned on the runners, attach the hanger brackets (D) to the tray (A) using two 1/4” x 20 x 3/8” Phillips-head screws (B).

8. Hook turnbuckles (F) into the hanger brackets (D) to secure the safety cable (G) from the true ceiling above the suspended ceiling tiles.

9. Attach the safety cable (G) to the ceiling plate reinforcements, using four turnbuckles (F). If it cannot, it must be reinforced.

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**Diagram showing the installation process.**
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Tools required for installation

• Phillips screwdrivers, No. 1 and No. 2 tip
• Drill and bit set
• Pliers (heavy-duty)
• Wire cutter
• Hammer (claw type), if suspending from a solid concrete ceiling.
• Other tools may be required depending on the method of installing the unit in the ceiling.

Assembly Procedures

Attach the Hanger Brackets to the Ceiling Tray

1. Using two 1/4" x 20 x 3/8" Phillips-head screws (B), attach four hanger brackets (D) to the four corners of the mounting plate bracket (A).

2. Remove the tiles from the area where the ceiling tray is being mounted.

3. Place the ceiling tray in its mounting location and mark the mounting hole where the tile will protrude from the ceiling.

4. Remove the ceiling tray and tile and cut a 1 1/2" (38.1 mm), or slightly larger, hole in the tile.

5. Install the ceiling tile and ceiling tray and clamp the ceiling tray to the ceiling track.

6. Install electrical outlet box(es) in the openings from the knock-out panels.

7. Place the ceiling tray into the 24 x 24 in. (610 x 610 mm) opening in the ceiling in place of a ceiling tile, or mount the tray above the ceiling in the 24" x 48" (610 x 1219 mm) space. Depending on where the ceiling tray is located, one or two pieces of ceiling track may need to be added.

NOTE: Do not tighten the screws until all four clamps are attached and the tray is properly positioned on the runners.

8. Using hanger bracket clamps (E) and 1/4" x 20 x 1" Phillips-head screws (C), clamp the ceiling tray to the ceiling runners.

9. Hook turnbuckles (F) into the hanger brackets.
Anchor the Tray to the Ceiling

**NOTE:** If the true ceiling is more than 36 in. (914 mm) above the suspended ceiling, you must obtain additional anchoring wire (H). Use 12-gauge annealed, steel, black wire. A longer safety cable (item H in parts on page 5) may also be required. Contact Chief Manufacturing for assistance in determining your specific requirements.

**Anchoring Methods**

Select the appropriate anchoring method for your ceiling:

**NOTE:** Four eye lag screws and four concrete anchors are shipped with the Kit.

- **Wood Joists or Beams.** Drill four 5/32-in. dia. holes, at least 2 in. deep (4-mm dia. holes, 51 mm deep). Fully insert eye lag screws (K).

- **Solid Concrete.**
  2. Tap anchors (L) into hole to an embeded depth of at least 1” (25.4 mm deep).
  3. Using a hammer with a claw, pull anchor (L) out 1/4” (6.36 mm) to activate anchor.

**Contents**

- **A** Bracket, plate, mounting 1600-000038-012 1
- **B** Cable, 1/8”, 10 ft. (3 m) [not shown] 0975-000001 1
- **C** Screw, lag, eye 0999-000036 4
- **D** Clip, wire rope (for 1/8” wire) 0999-000022 2
- **E** Hanger bracket clamps 1600-000039-011 4
- **G** Wire, 12 gage, 20 ft (6.1 m) 0975-000000 1
- **H** Cable, 1/8”, 10 ft. (3 m) [not shown] 0975-000001 1
- **I** Plate, reinforcing 1600-000037-011 1
- **J** Pliers (heavy-duty) 0999-000020 1
- **L** Anchor, concrete 0999-000037 4
- **M** Washer, 1/4 in 0999-000021 4

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**Imperfect Installation May Result in Serious Personal Injury**

**WARNING:** The overhead support must be capable of supporting five times the weight of the mount and equipment combined. If it cannot, it must be reinforced.

- **Truss Ceiling.** Attach the tie wire to the turnbuckle and loop its upper end around the ceiling truss. Pull the tie wire tight and twist it around itself at least four times. No additional anchor is required.

**Anchoring Procedure**

1. Cut the 20-ft (6.1 m) tie wire (G) into four pieces of equal length.
2. Insert the wires through the ends of the turnbuckles. Twist each wire around itself at least four times.
3. If required (see “Anchoring Methods” above), drill holes for the four ceiling anchors. Position the holes so that the tie wires (G), when attached and taut, will angle outward at 15° as shown.
4. For all anchoring methods, drill an anchor hole for the safety wire directly above the center of the ceiling tray. Do not attach the safety cable yet (see page 4).
5. Pull the tie wires tight and attach them to the ends of the ceiling anchors (or to the truss). Again twist each wire around itself at least four times.

The weight of the ceiling tray should now be supported by the tie wires.
Secure the Safety Cable

**WARNING:** It is the responsibility of the installer to verify that the ceiling to which the Kit is anchored will safety support the combined load of all attached components and equipment.

1. Run the safety cable (H) through the remaining ceiling anchor. Pass each end through the holes in the ceiling plate reinforcements and join them with the cable clamp (J). Do not tighten yet!

2. Attach all components and equipment to the reinforcing plate. Refer to the instructions supplied with them.

3. After all components are attached, tension the tie wires by adjusting the turnbuckles (F).

**WARNING:** The load must be carried by the tie wires, not by the suspended ceiling runners.

4. Take up the slack in the safety cable (H), leaving it slightly loose. Tighten both safety cable clamps (J).

### Parts

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<th>Description</th>
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