

Installation/Operating Instructions

220V SL & SLX Scissor Lift Video Projector Lift by Draper



These Installation/Operating Instructions are available in the official language of the country where you purchase the product. Please contact your distributor to request a copy.

Vous pourriez demander les instructions d'installation et d'opération traduites dans la langue officielle du pays où vous achetez le produit. Veuillez demander à votre distributeur.

Die Gebrauchsanweisung für Installation und Konstruktion sind in der offiziellen Sprache des Landes, indem Sie das Produkt gekauft haben, vorhanden. Fragen Sie die jeweilige Verkaufs-Abteilung.

⚠ Caution:

- 1 Read instructions completely before proceeding.
- 2 Test lift prior to installation.
- 3 Follow instructions carefully. Installation contrary to instructions invalidates warranty.
- 4 Do not obstruct operation of Scissor Lift with fingers or any object. Serious injury or damage could result.
- 5 Scissor Lift is designed to accommodate ceiling suspended equipment. Equipment should not be allowed to rest on optional ceiling closure during operation. (Refer to section titled "Installing Projector.")
- 6 Entire bottom of unit must be unobstructed to permit proper operation. Sufficient clearance must be allowed below projector or optional ceiling closure: see chart on page 4.
- 7 Unit must be installed level (use a carpenter's level).
- 8 Unit operates on 220V, 50 Hz. AC current.
- 9 Verify the show position when testing lift. Make required changes by referring to adjustment instructions on page 6 of this document.

Note: Unit has been thoroughly inspected and tested at factory and found to be operating properly prior to shipment.

Planning

- 1 Based on screen location and projector specifications, determine proper position for projector installation.
- 2 Confirm that there is adequate space for installation and operation. Minimum clearance above ceiling level varies according to Scissor Lift model, plus height of projector, optional mounting bracket, optional ceiling closure, and optional Environmental Air Space Housing.
- 3 Arrange to provide service access to the unit.

As Soon As Scissor Lift Arrives

- 1 Open carton and inspect for damage.
- 2 Locate the following parts:
 - A. The unit itself
 - B. Controls
 - C. Any optional equipment: Environmental Air Space Housing, closure panel or ceiling finish kit (all ship in separate cartons).
- 3 Test lift prior to installation.

Hanging Unit

Please note: If using Environmental Air Space Housing option, go to Environmental Air Space Housing instructions on page 2.

The Scissor Lift may be installed in a variety of ways; recessed above the ceiling, or suspended below the ceiling. The lift should be supported by four ½" threaded mounting rods. If ceiling recessed, the entire unit (including the projector) should set approximately 1½" above the finished ceiling in its "stored" position. The threaded rods should pass through the corner mounting flanges and be secured by nuts above and below. Use a thread locking compound such as Loctite® #242 (provided). The unit should then be guy wired or blocked to prevent swinging. All installations should observe the following guidelines:

- 1 Access from above the unit, with enough clearance to remove the top cover, should be provided in case service is required. If installing above a hard ceiling, optional Draper Access Panels are available to allow access to the unit.
- 2 Installer must ensure that all fasteners and supports are of adequate strength to securely support Scissor Lift and projector.
- 3 Fastening methods must be suitable for mounting surface, and securely anchored so that vibration or abusive pulling on unit will not weaken installation.

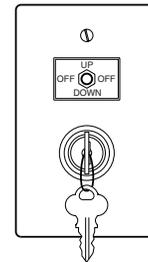
- 4 Unit should be level, with weight shared more or less equally by all four threaded mounting rods.
- 5 Bottom of unit must be unobstructed after installation. Sufficient clearance must be allowed below projector or optional ceiling closure: 4' for Model SL4, 5' for Model SL5, etc.; 11' for Model SLX11, 12' for Model SLX12, etc.
- 6 Do not use unit to support adjacent ceiling, light fixtures, etc.
- 7 Do not complete the ceiling below unit until electrical connections have been completed and unit has been operated successfully.
- 8 We recommend that safety cables be attached to the Scissor Lift for added security (a sound installation practice with overhead equipment).
- 9 When the Scissor Lift is to be installed in "other space used for environmental air" the optional environmental air space housing must be installed per instructions to isolate the lift from the "other space used for environmental air."

Electrical Connections

Unit operates on 220V AC, 50 Hz. current. Removing the top cover of the unit and opening the electrical box exposes terminals for field connections. Unit is shipped with internal wiring complete. Wire to connect unit to power supply should be furnished by installer. Connections should be made in accordance with wiring diagram, and wiring should comply with national and local electrical codes. All operating switches should be "off" before power is connected.

Scissor Lift should be operated and checked prior to installing projector and/or optional ceiling closure.

Standard switch shown below comes with 22.86 meters of cable and should be plugged in to box on front of top pan of lift to control lift.



Operation

When unit is first operated, be cautious! If unit fails to operate when toggle switch is flipped "down", return switch to "off" and recheck electrical connections before proceeding. Cycle unit down and up several times to confirm satisfactory operation.

Standard Single Station Control (CE Approved)—One, 12V toggle switch: moving 3-position toggle switch to "down" position will start lift down. Moving toggle switch to "up" will start lift up. When lift is in "show" position, travel will automatically be stopped by factory set limit switches. Whenever switch is placed in center "off" position, operation will stop. One, 12V key switch will lower lift from "show" to "service" position.

Video Interface Control (CE Approved)—This optional 12V control device allows the Scissor Lift switch to control the operation of a Draper motorized projection screen via a relay.

Multiple Station Control (Not CE Approved)—Optional, moves lift from "stored" to "show" position only. Each switching station has a 3-button switch with "up", "down", and "off" buttons. Lift starts up or down when appropriate button is pressed, and may be stopped by pressing "off" button. Factory set limit switches stop lift automatically when projector is in "show" position.

Key Operated Switch (Not CE Approved)—If ordered, a single station, key-operated three position (up/off/down) switch is available. Multiple Station Control required for this option. Moves lift from "stored" to "show" positions only.

Infrared or Radio Frequency Remote Control (CE Approved)—If ordered, a three-button transmitter is provided, with "up", "down", and "stop" buttons. Unit starts up or down when appropriate button is pressed, and may be stopped by pressing "off" button. Factory set limit switches stop unit automatically when projector is in "show" position. Only controls "show" and "stored" positions.

DRAPER

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If you encounter any difficulties installing or servicing your Scissor Lift, call your dealer or Draper, Inc. in Spiceland, Indiana, 765-987-7999; or fax 765-987-7142.

Installing Projector

Depending on job conditions and projector, it may be easier to remove optional ceiling closure panel before installing projector.

Generally, the video projector should be suspended from the bottom pan according to projector manufacturer's instructions and recommended standard ceiling mounting hardware. For projectors 10 kgs or below, use Draper's SMS Low Profile Mount with Universal Projector Bracket.

The Scissor Lift has a grounded 220V AC, 60Hz power cord for projector power supply. The power cord is laced down the back scissor and is "hot" at all times.

Control cables should be laced through our Cable Management System. Make sure to use flexible cables, and to allow enough cable at each turn so cables do not stretch or kink. This will ensure that cords do not become tangled and damaged during Scissor Lift operation.

Unit and projection system should be operated, checked and adjusted as necessary at this time.

After testing operations, the optional closure panel should be reattached. Be sure to use Loctite®, or other thread locking compound on the nuts.

NOTE: Immediately upon completion of the surrounding ceiling, units should be operated to confirm that optional ceiling closure panel stops just short of touching ceiling in closed position.

⚠ Warning: Keep fingers and other objects away from automatic ceiling closure and scissor mechanisms when unit is operating. Serious injury or damage could result.

Some Environmental Air Space Housings are longer than wide and mounting hole locations for Environmental Air Space Housing will change.

Installing Optional Environmental Air Space Housing

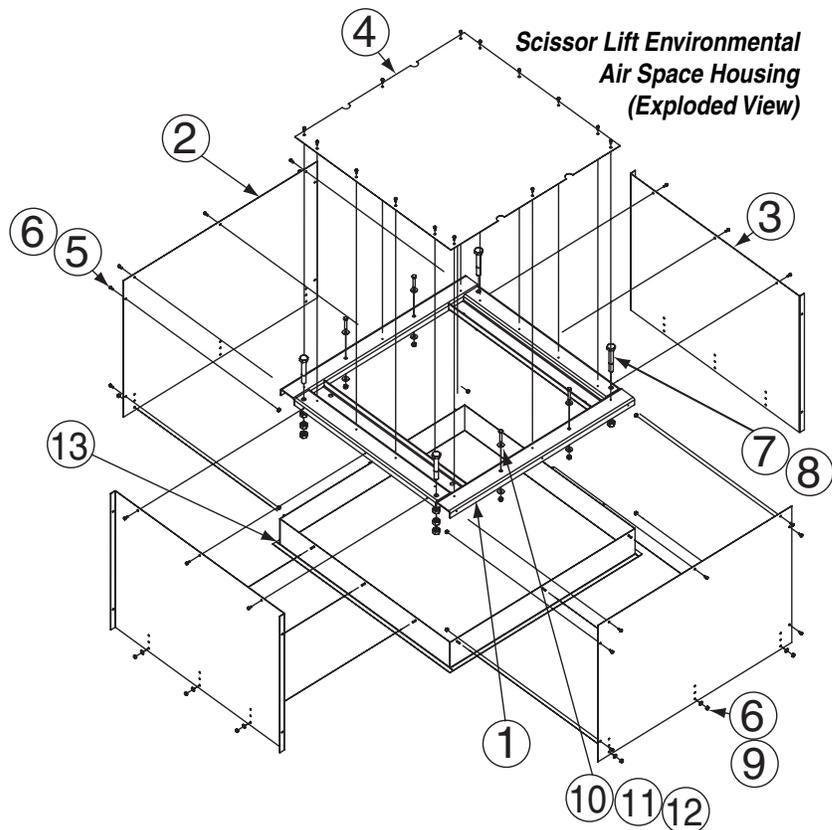
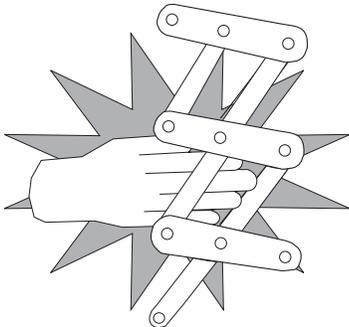
The Environmental Air Space Housing is shipped in pieces, and must be assembled by the installer. The height of the Environmental Air Space Housing can be adjusted by up to 2" (5 cm) by moving the trim frame to different mounting holes in side panels. It is recommended that an access panel be installed in the ceiling to allow future access.

- ① Attach Environmental Air Space Housing frame to top of Scissor Lift.
- ② Install top panel to plenum frame.
- ③ Attach assembly to overhead structure. Allow clearance between Environmental Air Space Housing top and structure for ease of future access.
- ④ Install side and end panels, and trim frame.

Parts List for Scissor Lift Environmental Air Space Housing

Item	Quantity	Part
1	1	Environmental Air Space Housing Top Frame
2	2	Environmental Air Space Housing End Panel
3	2	Environmental Air Space Housing Side Panel
4	1	Environmental Air Space Housing Top Panel
5	varies	#10-32 x 3/8" (9.5mm) Hex Head Screw with Zinc Washer
6	varies	#8-32 Zinc Keps Lock Nut
7	varies	1/2" (8mm)-13 x 3 1/2" (90 mm) Zinc Hex Head Screw
8	varies	1/2" (8mm)-13 Zinc Hex Grd 2
9	varies	3/16" (5 mm) ID x 5" (127mm) OD x 1/16" (3mm) tk Flat Washer
10	varies	1/4" (6mm)-20 x 1 1/2" (38mm) Zinc Hex Head Screw
11	varies	1/4" (6mm) Flat Zinc Washer
12	varies	1/4" (6mm)-20 Zinc Nylon Insert Lock Nut
13	1	Trim Frame

⚠ Caution: Beware of pinch points



⚠ Caution: Be careful when handling Environmental Air Space Housing Panels. The panels could have sharp edges.

Installing Optional Ceiling Closure Panel— Size "B", "S", "E", "J"

If your Scissor Lift is equipped with a "B" or "E" ceiling closure panel, it can be used as is, or in conjunction with a piece of existing ceiling tile.

- ① If installing with ceiling tile, you may need to cut tile so overall dimensions are the same as (or slightly less than) the closure panel. Place tile into trim frame. Lay closure panel on top (back side) of tile & tighten screws to hold in place.
- ② Attach provided angle brackets to side of bottom of Scissor Lift.
- ③ For larger units, attach short angle brackets to ends of long angle brackets.
- ④ Attach $\frac{5}{16}$ " (8mm) threaded rods to angle bracket.
- ⑤ Run unit "up" until bottom pan stops at highest position. Mark position on $\frac{5}{16}$ " (8mm) rods even with ceiling level and cut to length (remove from pan if convenient).
- ⑥ Run unit "down" until bottom pan stops at "show" position.
- ⑦ Attach closure to lower end of $\frac{5}{16}$ " (8mm) rods by slipping into four corner slots and secure with nuts above and below slots.

⚠ Caution: Make sure nuts are completely tightened.

- ⑧ Run unit "up" again to highest position. Measure distance by which panel fails to reach required "closed" height for surrounding ceiling.
- ⑨ Run unit "down" then re-adjust mounting of $\frac{5}{16}$ " (8mm) rods in traveling grid to raise panel required distance.
- ⑩ Test unit operation to confirm that panel will stop in closed position just before touching ceiling.

⚠ Caution: DO NOT hang from, "ride" or pull down on the unit. This could create a failure and cause damage and/or injury.

PLEASE NOTE: Immediately upon completion of the surrounding ceiling, unit should be operated to confirm that optional ceiling closure panel by Draper or by others stops $\frac{1}{8}$ " (3mm) short of touching ceiling in closed position. If closure panel touches, the motor may continue operating after the lift is closed. If it continues to cycle once the lift is closed, a motor failure may occur.

Installing Optional Ceiling Closure—"G", "U"

Your Scissor Lift can be equipped with an optional ceiling closure system. To install:

- ① Remove closure and all mounting hardware from carton.
- ② Optional ceiling closure can be mounted in either of the following styles:
 - A. If ceiling tile is to be inserted in the closure, this may be done now, or later when the rest of the ceiling is installed (permitting a better match). Cut tile so that its overall dimensions are the same as (or slightly less than) the closure panel. Attach to the closure panel with adhesive.
 - B. Position one pre-cut aluminum tee along outside edge of panel so arm extends under and rests on the panel (or tile if tile is being used). Be careful not to compress the tile. Drill three holes through rib of tee into edge of panel and pop rivet into place (or use self-tapping screws).
 - C. Follow same procedure with remaining 3 tees.

NOTE: Since tees comprise part of exposed trim, care should be taken to ensure accurate fit.

- ③ Attach two (2) mounting angles to the corresponding holes in the bottom pan with the supplied hardware.
- ④ Attach other two (2) mounting angles at 90° to previous angles (right to left) in the corresponding holes with the supplied hardware.
- ⑤ Attach one of four $\frac{3}{8}$ " (10mm) threaded rods by passing the rod through one of the four corner holes, in the angles and secure with nuts top and bottom. Approximately $\frac{1}{2}$ " (13mm) of rod should extend above angle.
- ⑥ Run unit "up" until bottom pan stops at highest position. Mark position on $\frac{3}{8}$ " (10mm) rod that is even with ceiling level and cut rod to length (removing it from pan if convenient). Cut remaining three rods to same length.
- ⑦ Run unit "down" until bottom pan stops at "show" position. Secure all four $\frac{3}{8}$ " rods to traveling pan in same fashion as first one.
- ⑧ Attach closure to lower end of each $\frac{3}{8}$ " (10mm) rod using two remaining nuts on each rod to firmly clamp fixtures on top of panel.
- ⑨ Run unit "up" again to highest position. Measure distance by which panel fails to reach required "closed" height for surrounding ceiling.
- ⑩ Run unit "down" then readjust mounting of $\frac{3}{8}$ " (10mm) rods in traveling grid to raise panel required distance.

NOTE: Rods should not extend more than 25mm above the angles attached to the pan. Cut extra rod off if necessary.

- ⑪ Test unit operation to confirm that panel will stop in closed position just before touching ceiling.

⚠ Caution: DO NOT hang from, "ride" or pull down on the unit. This could create a failure and cause damage and/or injury.

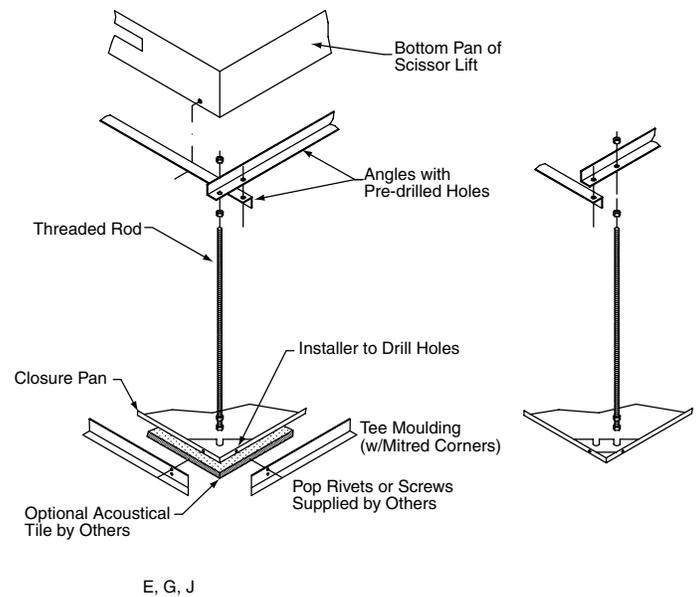
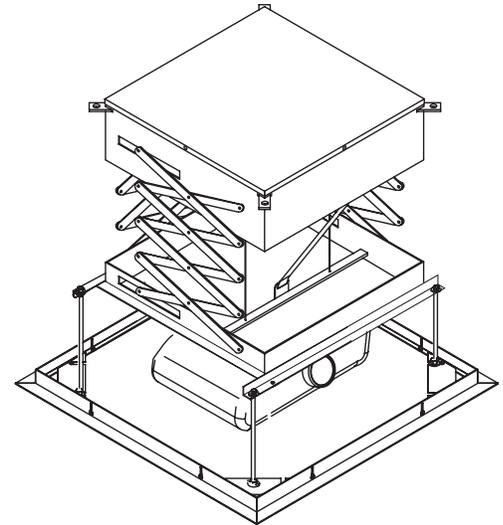
PLEASE NOTE: Immediately upon completion of the surrounding ceiling, unit should be operated to confirm that optional ceiling closure panel by Draper or by others stops $\frac{1}{8}$ " (3mm) short of touching ceiling in closed position. If closure panel touches, the motor may continue operating after the lift is closed. If it continues to cycle once the lift is closed, a motor failure may occur.

Installing Optional Ceiling Finish Kit

The Scissor Lift is available with a ceiling finish kit, which consists of the lower section of the Environmental Air Space Housing (trim frame) and the closure panel.

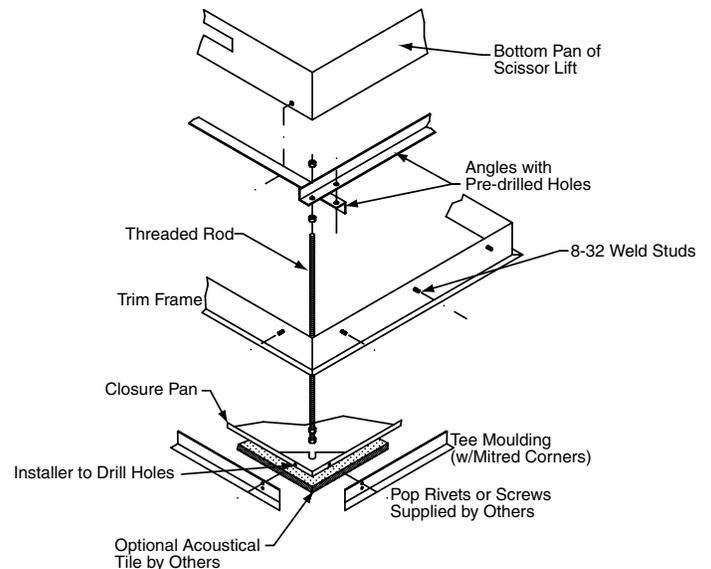
- ① Install Scissor Lift as previously described in these instructions.
- ② Install trim frame in opening. This can be accomplished by suspending with wire or mounting directly to ceiling joists (if space permits).
- ③ Install projector and attach optional ceiling closure panel to Scissor Lift. See above for appropriate ceiling closure instructions.

Optional Ceiling Closure for Scissor Lift



E, G, J

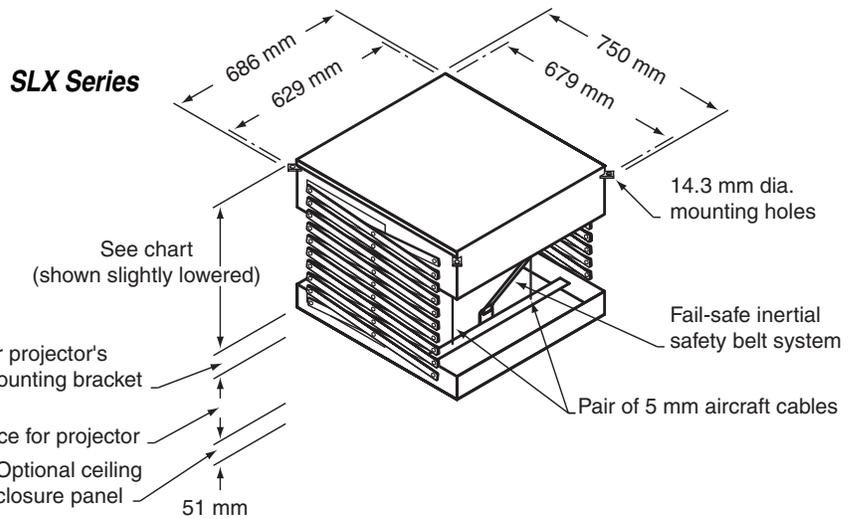
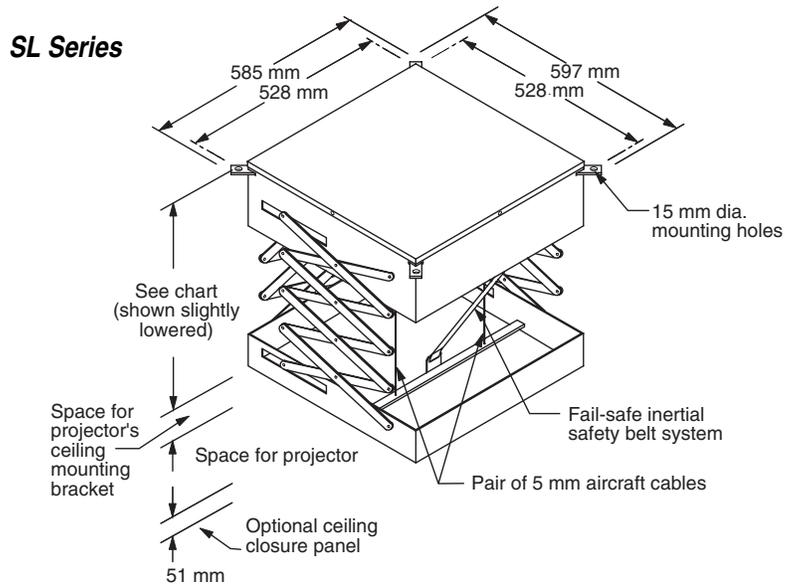
Ceiling Finish Kit



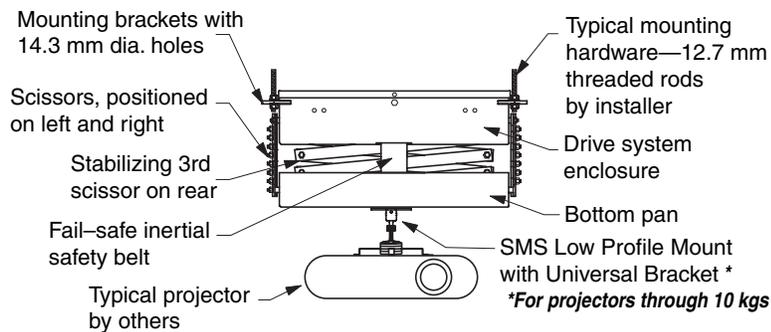
Scissor Lift Dimensions

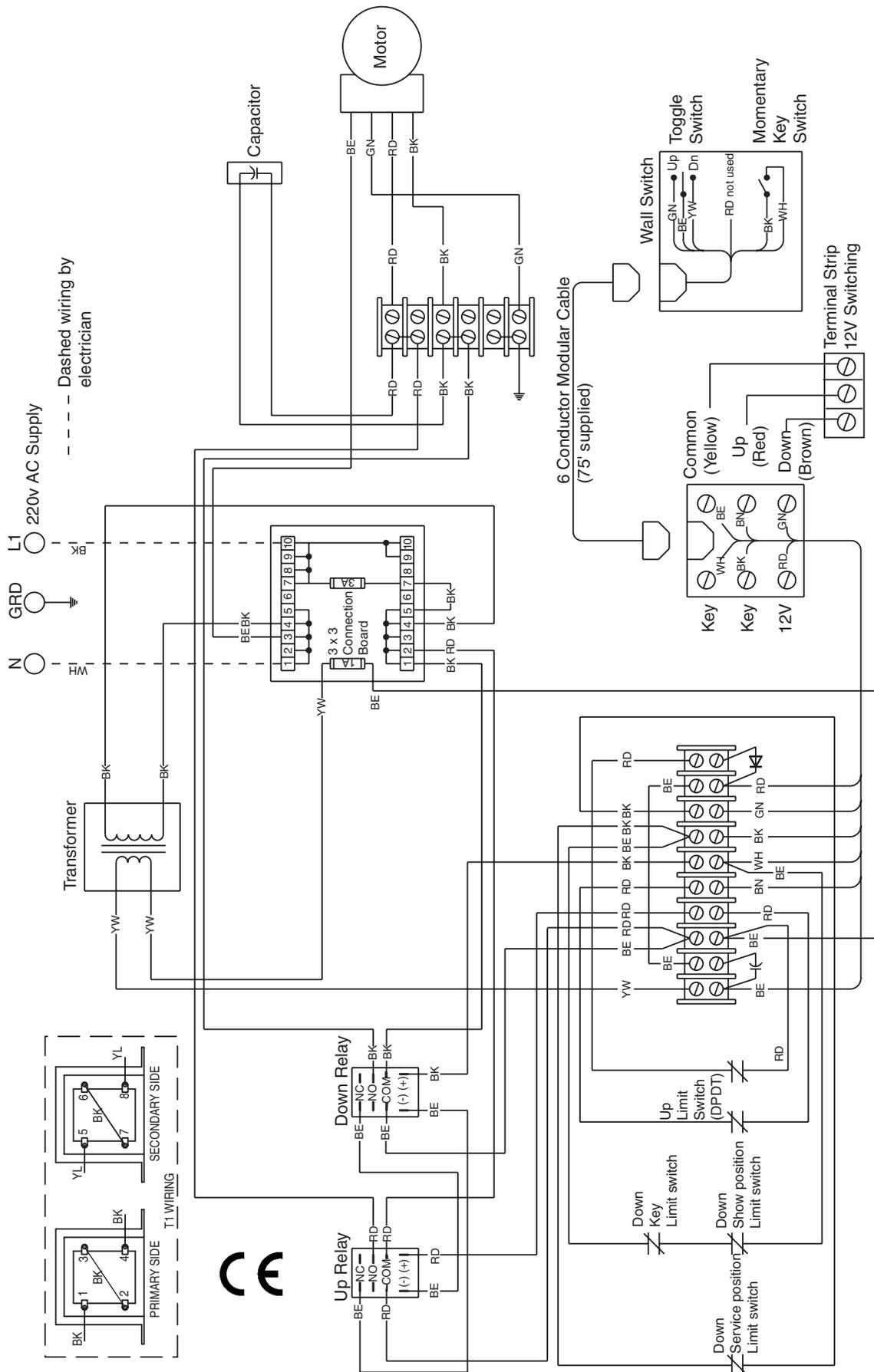
Model	Maximum Lowering Distance	Retracted Height ¹
SL4	122 cm	21 cm
SL5	152 cm	24 cm
SL6	183 cm	26 cm
SL7	213 cm	29 cm
SL8	244 cm	31 cm
SL9	274 cm	33 cm
SL10	305 cm	36 cm
SLX11	335 cm	35 cm
SLX12	366 cm	40 cm
SLX13	396 cm	40 cm
SLX14	427 cm	44 cm
SLX15	457 cm	44 cm
SLX16	488 cm	49 cm
SLX17	518 cm	49 cm

¹ SMS Low Profile Mount adds 124 mm, including universal projector bracket, to unit height.



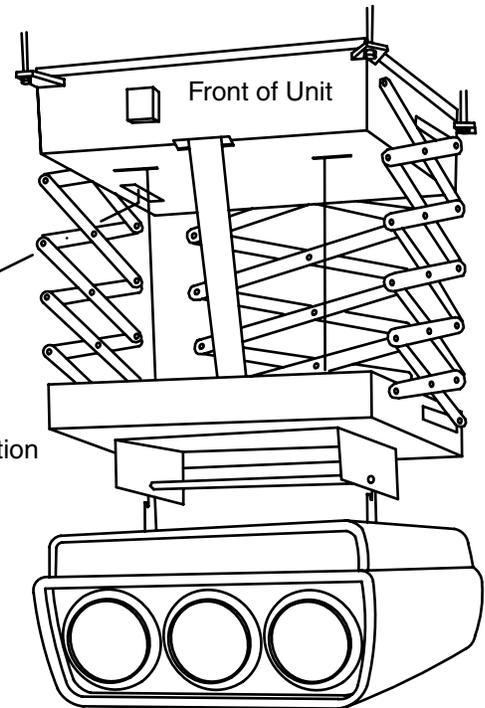
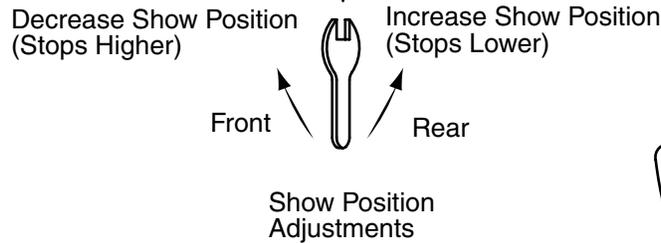
Typical Installation Details





Adjusting Show Position (Up to Standard Position)

- ① Find the empty slot in the bottom of the top pan of lift (the only empty slot).
- ② Use the open-end wrench (provided)
- ③ Find the threaded coupling (long nut) just inside the top pan (through the slot).
- ④ Push wrench toward rear of unit to lower.
- ⑤ Pull wrench toward front of unit to raise.



Adjusting Scissor Lift "Show Position" Past Standard Position (46 cm)

If the "show" position is lower than half of the lift's total drop distance, the switch configuration change should be performed prior to mounting the lift, and must be performed prior to mounting the lift if an Environmental Air Space Housing is used!

⚠ CAUTION: Be sure all switches are in "off" position before adjusting limit switches. Always be prepared to shut lift off manually when new adjustment is being tested.

- ① If the desired show position is beyond the standard position (46 cm) but not more than half the service position, proceed to step #7.
- ② If the desired show position is over half the service position, proceed with the following steps.
- ③ Remove the top pan cover of the scissor lift.
- ④ Locate micro switches # 1 and #2 that are wired in series on the micro switch assembly.
- ⑤ Disconnect the yellow wire from m/s #1 from the red wire from m/s #2. Disconnect the black wire from m/s #1 from the green wire.
- ⑥ Connect the green wire to the red wire from m/s #2.
- ⑦ At this point you can adjust the micro switch assembly, with the supplied wrench, through the slot in the bottom of the top pan (see above drawing).
- ⑧ After you have reached the desired show position, raise and lower the unit several times in order to verify show position.

Figure A

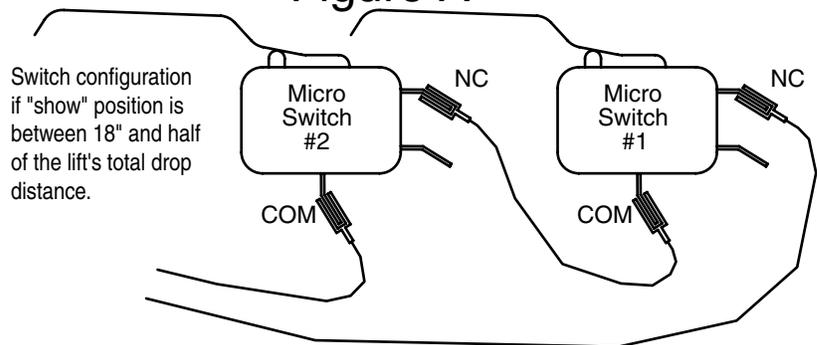


Figure B

