Installation/Operating Instructions

230V AC Scissor Lift SLX Video Projector Lift by Draper

Electrical Connections

Unit operates on 230V AC, 50 Hz. current.

5.4 amps current draw (2 amps for lift, 3.5 amps for outlet).

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.

An appropriate disconnect device shall be provided as part of the building installation. All operating switches should be "off" before power is connected.

Caution: Make sure electrical supply has been disconnected before attempting to connect Scissor Lift to electricity.

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

Low Voltage Control Switch shown on Page 2 comes with 22.8m of non-plenum rated cable and should be plugged into Control Panel on top frame of lift for control of the "Up" and "Show" positions.

Momentary Key Switch shown on Page 2 comes with 22.8m of cable and should be plugged in to Control Panel on top frame of lift for control of the "Service" position.

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.

4. Maximum lifting capacity is 159 kg.

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. Optional equipment:
      I. Environmental Air Space Housing,
      II. Universal Projector Mount,
      III. Closure Panel or Ceiling Finish Kit
      (all ship in separate cartons).

3. Test lift prior to installation.

Please Note: Packaging must be removed from lift before testing.

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

DRAPER

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Hanging Unit

Please note: If using Environmental Air Space Housing option, go to Environmental Air Space Housing instructions on page 8.

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 12.7 mm threaded mounting rods or bolts with locking nuts. If ceiling recessed, the entire unit (including the projector) should set approximately 38 mm 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. The unit should then be guy wired or blocked to prevent swinging.

All installations should observe the following guidelines:
1. 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.
6. Unit must be secured independent from suspended ceiling and do not use unit to support adjacent ceiling, light fixtures, etc.
7. Unit to be installed so when lowered to its lowest point, it is a minimum of 2.44 m above the floor.
8. Do not complete the ceiling below unit until electrical connections have been completed and unit has been operated successfully.
9. We recommend that safety cables be attached to the Scissor Lift SLX for added security (a sound installation practice with overhead equipment).

When the Scissor Lift SLX 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.”

⚠️ Caution: Beware of pinch points

Please Note: Scissor Lift SLX must be installed in accordance with the requirements of the Local Building Codes, the Canadian Electrical Code (CEC), CAN/CSA C22.1 and the National Electric Code (NEC), NFPA 70, as required. An appropriate disconnect device shall be provided as part of the building installation.

Adjusting for Level or Center of Gravity (See Fig. 2 Below)

Preferred Method—Adjusting Projector Pan

The Projector Pan can be moved forward or back.
1. Make sure Bottom Pan is supported.
2. Remove the Lifting Cable Bar.
3. Remove screws holding Projector Pan on Bottom Pan.
4. Move Bottom Pan forward or back.
5. Replace screws.
6. Replace Lifting Cable Bar.

Secondary Method—Adjusting Lifting Cable Bar (if above does not work)

Run the unit to its “Service” position and make sure pan is level.

Try and set so that pan is not more than 19 mm out of level. However, the pan does not have to be perfectly level, as long as the positioning is consistent and repeatable in “Show” and “Closed” positions.

1. Make sure Bottom Pan is supported.
2. Remove screws holding Lifting Cable Bar to the Bottom Pan.
3. Move Lifting Cable Bar forward or back.
4. Replace screws.
5. Check level again. If still not level, repeat.

Operation

Before operating or testing the unit, make sure the packaging has been removed from the unit. This can be accomplished by removing the eight screws (four per side) holding the packing frame to the lift. Once the packaging is all removed, open the lift in the “Up” direction, so the lift’s control encoder will recognize it’s “home” location. Until you do this, the Down function will not work.

When unit is first operated, be cautious! If unit fails to operate properly, press “off” and recheck electrical connections before proceeding. Cycle unit down and up several times to confirm satisfactory operation. You must also do this if the Scissor Lift ever loses or is disconnected from the power.

⚠️ Caution: Do not pull on or touch safety belt when unit is in motion. If belt locks, the cables will unspool.

⚠️ Caution: Obstructing bottom pan may cause cables to unspool.

Standard Single Station Low Voltage Control (See Fig. 1)—One three-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. One momentary key switch lowers lift from “Show” to “Service” position.

Optional Multiple Station Control—

Optional, moves lift from “Stored” to “Show” position only. Each switching station has a three-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.

Optional Key Operated Switch—

If ordered, the standard Lift LV Switch can be replaced with a second single station, momentary key-operated three position (up/off/down) switch. Multiple Station Control required for this option. Moves lift from “stored” to “show” position only.

Optional Infrared or Radio Frequency Remote Control—

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 lift automatically when projector is in “show” position. Only controls “show” and “stored” positions.

Optional RS232 Control—

For Serial communication an R2D7 Serial Communications Interface is optionally available.

Low Voltage Trigger—

Input provided for Low Voltage Trigger from projector (see diagram on page 4).

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Installing Projector

Generally, the video projector should be suspended from the Projector Pan according to projector manufacturer's instructions and recommended standard ceiling mounting hardware. Projector should be bolted to Projector Pan as in a normal ceiling mounting. Equipment should not be allowed to rest on optional ceiling closure during operation.

The Scissor Lift SLX has a grounded 230V AC, 50 Hz outlet for projector power supply.

Control cables should be laced through our Cable Management System on rear scissor mechanism only. Route the cables and attach with plastic wire ties similar to factory installed power cable. Make sure to use flexible cables. Plenum rated cables are typically too stiff and should not be used. Installer is responsible for ensuring cables do not stretch, kink, or interfere with the scissor mechanism as the unit raises and lowers. This will ensure that cords do not become tangled and damaged during Scissor Lift SL operation.

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

Δ 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.

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

Attaching Universal Projector Mount to Projector Pan

If you ordered the unit with optional Universal Projector Mount pre-installed, disregard these instructions.

If you did not order the mount pre-installed, you will need to install a new Projector Pan, which includes the Universal Projector Mount's rectangular plate.

① Lower unit until the Bottom Pan is resting on a tabletop or other stable and sturdy surface.

② Remove Lifting Cable Bar from Bottom Pan (see Fig. 2).

③ Remove bolts holding Projector Pan to Bottom Pan (see Fig. 2).

④ Remove Projector Pan and set aside.

⑤ Place new Projector Pan with Universal Mount into place.

⑥ Re-attach Projector Pan to Bottom Pan.

⑦ Re-attach Lifting Cable Bar to Bottom Pan.
Installing Optional Ceiling Trim Kit

If installing with ceiling tile, you may need to cut tile so that its 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 ceiling tile, and tighten screws to hold in place.

Lipless Closure Option is available by removing the Trim Ring from the Closure Panel. A substrate material (ceiling tile, gypsum board, etc.) can be attached directly to the Closure Panel using adhesive, double-sided tape or screws. NOTE: Make sure the added weight of the substrate does not exceed the stated weight capacity of the lift. Substrate should be installed so that it is centered within the finished opening in the ceiling, with a gap of no less than 5mm around all edges. Lipless Closure dimensions shown with ★ in drawing below.

Attach provided angle brackets to side of Bottom Panel of Scissor Lift SLX.

1. Attach threaded rods to angle bracket.
2. Run unit “up” until bottom pan stops at highest position. Mark position on rods even with ceiling level and cut to length (remove from pan if convenient).
3. Run unit “down” until bottom pan stops at “show” position.
4. Attach closure to lower end of rods by slipping into four corner slots and secure with nuts above and below slots.

**Caution:** Make sure nuts are completely tightened.

1. Run unit “up” again to highest position. Measure distance by which panel fails to reach required “closed” height for surrounding ceiling.
2. Run unit “down” then re-adjust mounting of threaded rods in traveling grid to raise panel required distance.
3. Test unit operation to confirm that panel will stop in closed position just before touching ceiling.

**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 ⅛” 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.

For Additional Safety:
1. Be sure the nuts that attach the threaded rods to the closure panel are tight.
2. Wrap a plastic wire tie around the mounting tab and the threaded rod at all four corners of the closure panel (see drawing).

**Please Note:** Do NOT use a paper-covered or similar wire tie—use only plastic wire ties for maximum safety.

Installing Optional Ceiling Closure

If your Scissor Lift SLX is equipped with optional ceiling closure, it can be used as is, or in conjunction with a square of existing ceiling tile (see Fig. 5).

1. If installing with ceiling tile, you may need to cut tile so that its overall dimensions are the same as (or slightly less than) the closure panel. Place tile into trim frame.
2. Lay closure panel on top (back side) of ceiling tile, and tighten screws to hold in place.

Lipless Closure Option is available by removing the Trim Ring from the Closure Panel. A substrate material (ceiling tile, gypsum board, etc.) can be attached directly to the Closure Panel using adhesive, double-sided tape or screws. NOTE: Make sure the added weight of the substrate does not exceed the stated weight capacity of the lift. Substrate should be installed so that it is centered within the finished opening in the ceiling, with a gap of no less than 5mm around all edges. Lipless Closure dimensions shown with ★ in drawing below.

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4. Run unit “down” until bottom pan stops at “show” position.

**Caution:** Make sure nuts are completely tightened.

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2. Run unit “down” then re-adjust mounting of threaded rods in traveling grid to raise panel required distance.
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**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 ⅛” 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.

For Additional Safety:
1. Be sure the nuts that attach the threaded rods to the closure panel are tight.
2. Wrap a plastic wire tie around the mounting tab and the threaded rod at all four corners of the closure panel (see drawing).

**Please Note:** Do NOT use a paper-covered or similar wire tie—use only plastic wire ties for maximum safety.
Connecting Controls to Data Cable Splitter Board

Controls plug into the Data Cable Splitter Board, which is located on the Top Frame on the front side of the lift, using RJ14 connectors.

For IR or RF Remote Control, use data cable with RJ14 connectors on both ends.

For serial control of "Show" position, use data cable with RJ14 connectors on both ends and an R2D7 Serial Control Interface. Plug into the "RP/RQ" input.

Any control, including automated dry contact systems, being connected to the wall switch input MUST send a momentary signal.

METHOD #1
CLEARING THE SHOW POSITION AT CURRENT SHOW POSITION:
1. Move lift to the show position.
2. While lift is at the show position press and hold the Key Up toggle switch and release once the Lift begins moving upward.
3. The show position is now cleared and ready for a new show position to be set.

METHOD #2
CLEARING THE SHOW POSITION AT THE MAINTENANCE POSITION:
1. Move lift to the maintenance position.
2. While lift is at the maintenance position press and hold the Key Down toggle switch and release once the Lift begins moving upward.
3. The show position is now cleared and ready for a new show position to be set.

PLEASE NOTE: At this point the Key Switch will not operate until the new “Show Position” has been set. Also the 3-Button Wall Switch changes into a maintain, push and hold type button, for continuous movement. This allows for easy setting of new “Show Position”

PROCEDURE FOR SETTING SHOW POSITION:
1. Now that the show position has been cleared, use wall switch up and down buttons to get lift into desired show position.
2. While lift is at desired show position, press and hold the Key Down toggle switch until lift begins to move upward. Lift will begin a calibration cycle where it will move upward for two seconds, stop then move down for one second and then the Lift will return to the desired show position.

Optional Delay Feature
1. When the Optional Delay Feature is installed the Delay Switch must be in the "Delay On" position for normal operation.

2. If the Optional Delay Feature is installed and the "Show Position" requires adjusting, then the "Delay Switch" must be switched to Off while adjusting the show position.

CAUTION: Be sure all switches are in OFF position before adjusting limit switch. Always be prepared to shut lift off manually when new adjustment is being tested. Please refer to wiring diagram.

PLEASE NOTE: If the Scissor Lift loses power, the DOWN function will not work until you operate the lift in the UP direction using the wall switch. This allows the lift's control encoder to recognize its "home" location.
**PLEASE NOTE:**
Changing the fully open or fully closed position will reset the electronic controls and cause the lift to operate improperly. **Please call Draper before attempting these adjustments.**

### Adjusting FULLY DOWN position

Limit switches for the Scissor Lift SL are preset at the factory. The **DOWN** limit switch is set for the fully down (maintenance) position for the size lift you have ordered. The limit switch assembly is located inside the lift and behind the Lifting Cable Drum.

The Down limit switches shown in the drawing are for setting the "Fully Down" position. This can be adjusted manually by loosening or tightening the screw to increase or reduce the travel.

**Caution:** The maintenance/service factory limit setting must not be adjusted to a lower position than the preset factory limit setting. In addition, Draper does not recommend setting show position at the maintenance/service position.

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**Figure 8**

**Wiring Schematic**

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**Alternate 'UP' Limit Switch Wiring**

*NOTE: This CANNOT be used when lift is installed in Environmental Air Space Housing and Optional Ceiling Closure*

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**ALTERNATE 'UP' LIMIT SWITCH WIRING**

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**Wiring Schematic**

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**Low Voltage Trigger (6-24 VDC)**

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**Dashed wiring by electrician**

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*Black (BK) Jumper wire is located in the plastic sleeve with these instructions.*
### Scissor Lift SLX Dimensions

#### Top View

- **Height:** 973.14 mm
- **Width:** 919.16 mm
- **Depth:** 903.29 mm
- **Base:** 957.26 mm

### Table A

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<tr>
<td>SLX28</td>
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<td>866 cm</td>
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</table>

#### Front View

- **Height:** 889 mm
- **Width:** 920.75 mm
- **Depth:** 1066.8 mm

#### Side View

- **Height:** 900.1 mm
- **Width:** 941.39 mm
- **Depth:** 1066.8 mm

### Lipless Closure Dimensions

- **Height:** 994 mm x 994 mm

- **Width:** 527 mm
- **Depth:** 1054 mm

- **Height:** 1060 mm
- **Width:** 127 mm
- **Depth:** 482.6 mm

- **Height:** 1231.9 mm
- **Width:** 571.5 mm
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 is set by punching out the knockouts at the desired locations then using screws to connect in side panels. It is recommended that an access panel be installed in the ceiling to allow future access. The optional Environmental Air Space Housing must be installed per instructions to isolate the lift from the "other space used for environmental air."

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

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Attach Environmental Air Space Housing top frame to top of Scissor Lift SLX with bolts provided.
② Install top panel to Environmental Air Space Housing 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.

Please Note: The factory wiring of 'UP' Limit Switch MUST ALWAYS be used when SLX is installed in Environmental Air Space Housing and Optional Ceiling Closure.
See installation instructions included with Environmental Air Space Housing.

Do not use electrical knockouts on bottom sections.