CAMBRIDGE ELEVATING

JOURNEY (LULA) INSTALLATION GUIDE

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Refer to OLS Operator manual, Virginia manual, Virginia drawings for your project, hoistway layout, and CE connection drawings for details.

Preparation

- Pre-install site check
- Plan machine room
- Plan conduit/cable tray
  Note: using the conduit entries in the bottom of the controller box can interfere with the installation of the UPS (battery backup unit).
- Plan hydraulic lines

Running Sling

- Mark the rail bracket centerline and height of each bracket on the rail wall as per the hoistway layout drawings.
- Choose method for mounting rail brackets depending on wall type and engineering specifications.
- Plan/prepare to work safely in the hoistway
- Rail brackets
  - Align each bracket using the height and centerline markings
  - Install a bolt loosely in the center hole
  - Level
  - Attach to rail wall
- Sliders
  Note: each slider is installed with the V notch up and towards the inside of the rail bracket and the slider needs to be square to the wall.
  - Top rail bracket left slider
    - Position slider with a ½ inch overhang on the inside, the V notch 6 inches from the wall and square to the wall, drop plumb line over the inside edge through the center of the V notch.
  - Bottom rail bracket left slider
    - Touch line at V, readjust top if necessary, tighten, tie off line at center of V notch
  - Remaining rail brackets left sliders
    - Touch line at V and tighten
  - Top rail bracket right slider
    - Repeat as per top left
    - **Set the distance between the left and right sliders to 32 5/8th inches**
  - Bottom rail bracket right slider
    - **Set the distance between the left and right sliders to 32 5/8th inches**
    - Touch line at V
    - Tie off line at V
  - Remaining rail brackets right sliders
    - **Set the distance between the left and right sliders to 32 5/8th inches**
    - Touch the plumb line at V
- Baseplate
  - Must be level and between the rails
- Right side rail
  - Work bottom up, tongue up, grove down, short rail at top, refer to elevation drawing.
  - The rail should be centered on the slider and plumb if the sliders were installed correctly. If the wall is plumb the rail center to rail wall distance should remain 6 inches.
- Jack-post
  - Slider face to wall = approximately 4 inches (if the wall is plumb and true)
  - Install jack-post, plumb and true
  - Secure with U-bolt
- Cylinder (90mm assumed) see hoistway layout for size.
  - Slider face to wall = 3 7/16th inches
  - Install U-bolt but leave loose until plumbed
  - Install line rupture valve onto the cylinder
  - ***preset the line rupture valve***
  - ***Loosen lock nut, turn adjustment all the way out, then 2 turns in, then tighten lock nut.***
- Sling
  - Lock shackles up with vice grips
  - Adjust main blue rollers out
  - If necessary, adjust side rollers
  - Engage sling with the right rail
  - Align with the left rail location
- Sling cross piece
  - Attach so that it is flush at the top
- Left side rail
  - Insert rail through the sling rollers and through the safeties & lower rollers
  - Work bottom up, tongue up, grove down, short rail will normally go at top (if any)
    Refer to elevation drawing.
  - ***Rail center to wall = 6 inches***
  - ***DBG = 27 15/16th inches***
- Hydraulic lines
  - Keep inside of lines tank valve and fittings clean
  - Rubber hose recommended in machine room to prevent vibration transfer.
  - Turn cylinder so the line rupture valve is near the rail wall at the 1 o'clock position
  - Tighten the U-bolt holding the cylinder
- Hydraulic drain line
  - Attach plastic 90° fitting
  - Run line to pit and into a 4L container.
- Sheave
  - Remove cylinder shipping bracket and reinstall the cap screw
  - Remove the bottom plate from sheave
  - Attach bottom plate to the cylinder with the large bolt
  - Attach sheave to the bottom plate
  - 1/16th inch gap between each shoe and the rail
  - Make sure sheave assembly is parallel to rails.
- Ropes to sling
  - Leave room to adjust at shackles, install rope clips
- Main controller and HPU connections
  - Incoming motor power
  - Incoming lighting power
  - Controller to power unit power connections using BX or pipe
  - Controller to power unit control connections using 19c cable
  - Connect remote

  The power unit is preset and tested, major adjustments should not be necessary
  Do not remove factory yellow jumpers at this time
- Bleed air from cylinder
- Pre-stroke as per layout drawings
- Manually Lift sling to level with the lowest floor and block in place
- Ropes to jack post
  - Leave room to adjust shackles, do not install clips
- Sling extensions
- Adjust sling rollers
  - Do not adjust the yellow/white rollers (green paint mark should be out)
  - All blue rollers should touch rail lightly but still turn by hand
- Cab floor
  - Locate the floor based on the layout drawings
  - Secure floor to the sling
- Adjust safeties
  - Should be evenly spaced front to back
  - Use brake setting shim tool to set the roller
- Test the safeties
- Remove scaffolding
- Testing the travel of the sling
- Confirm clearances and door centerlines

Cab and Electrical

- Assemble cab
- Adjust cab so it is level, true and square
- Attach cab to sling
- Install hoistway wiring
- Install the Pit E-stop switch
- Install the call stations
- Install and set the limit switches
  - Top normal limit – activate 2 inches above level
  - Top slowdown limit – activate 1 inch above level
  - Hoistway access – activate cartop at top flr
  - Inspection limit –before top prop hits
  - Bottom slowdown – activate 1 inch below bottom floor
  - Bottom normal limit – activate 2 inches below bottom floor
- Cartop electrical
  - Chose position so the provided cables reach everything they need to connect to.
- Install COP and make connections
- Tape, tape reader and magnets
  - Use CE magnet drawing in the electrical details book
- Travel cable
- Running in inspection
  - Try with all jumpers still in

Cab gate(s)

- OLS (Victory) gate operator
- Install car gate panels and light curtains (screens)

Note: the landing and Car door panels differ

Landing doors

- Install landing door frames
- Install landing door panels
- Install fire gibs

Finishing touches and testing

- Install fascia
- Running in auto
  - Confirm all travel and hoistway wiring
  - Confirm cab is mid hoistway
  - All magnets installed
  - All yellow jumpers removed except fire recall ones (S1 to 82 and S1 to 82M)
  - Service off at controller and cartop
  - Remote removed
  - Hoistway access off
  - Safety cct. Confirm 120vac at 1,2,3,4,5 and 6 Refer to Virginia drawings page R1
  - Limit SWs, confirm 120vac at 14,16,18, and 19 Refer to Virginia drawings page R2
  - Inspection circuit, confirm 120vac at 86,23x, 23y, 34y, and 23. INX relay should be on
- Run elevator
  - Adjust magnets as required
  - Test and adjust door operator(s)
  - Test and adjust landing doors
- Connect fire recall to a fire alarm system
  - S1, 82, 82M, 82F
- Test fire recall
- Test hoistway access
- Handrail(s)
- Final cleaning
- Adjust up movement
- Adjust down movement
- Test the low-pressure and the slack rope switch
- Test the line rupture valve
- Test the pressure release valve
- Program and test the telephone
- Test fan
- Install data tags
- Install stickers
- Landing frame brail tags
- Power failure test
- **Pre-inspection before Inspector**
- Inspection
- Customer training

3 Phase Power

If the phase monitor led is red –switch the wires with the push on connectors on the L1 and L2 terminals **on the phase monitor.**

If the motor sounds like it running backwards – switch the T1 and T2 wires in the main controller on the large terminals in the controller.

Setup and Adjustment of the Cambridge Elevating Hydraulic Power Unit.

Adjustment #1 (BP) – Up Delay
FUNCTION- Determines the length of the delay from pump start to car movement.
PRESET- Adjust in till click is heard then 3 turns out.
OPERATION- Turn in (CW) for less delay.
SETTING– Adjust so that the delay is approximately 1 second.
Adjustment #2 (UA) – Up Acceleration
FUNCTION- Determines how long it takes the elevator to reach full speed from a stop.
PRESET- Gently turn in (CW) until stop then turn out (CCW) one and a half turns.
OPERATION- Turning in (CW) will cause the elevator to take longer to reach full speed.
SETTING- Adjust so that car takes 2 seconds to reach full speed
Adjustment #3 (UD) – Up Full Speed Deceleration.
FUNCTION- Determines how quickly the car slows down to levelling speed.
PRESET- Gently turn in (CW) until stop then turn out (CCW) one and a half turns.
OPERATION- Turning in (CW) will increase the time it takes to slow down to levelling speed from full speed.
SETTING- Adjust so that the transition to levelling speed is quick but not uncomfortable (1 to 2 seconds).
Adjustment #4 (UL) – Up Levelling Speed.
FUNCTION- Determines levelling speed in the up direction.
PRESET- Adjust until screw is flush with casing.
OPERATION- Turning in will decrease the levelling speed.
SETTING- Adjust so that the levelling speed is approximately 8-10 feet per minute (1.5 to 2 inches in per second). The best way to set this is to turn off the high-speed switch located on the main controller board.
Adjustment #5 (US) – Up Levelling Speed Deceleration
FUNCTION- Determines how quickly the elevator stops
PRESET- Turn all the way out
Adjustment #6 (DA) – Down Acceleration
Note: Adjustment #6 can be affected by adjustment #8.
FUNCTION- Determines how long it takes the elevator to reach full speed from a stop.
PRESET- Gently turn in (CW) until stop then turn out (CCW) 1 turn.
OPERATION- Turning in (CW) will cause the elevator to take longer to reach full speed.
SETTING- Car should take 2 seconds to reach full speed.
Adjustment #7 (DF) – Down full speed
FUNCTION- Determines the car speed in the down direction.
PRESET- Adjust until screw is flush with casing.
OPERATION- Turn in to reduce the down speed.
SETTING- Adjust so that car travels up & down at the same speed
Adjustment #8 (DD) – Down deceleration
Note: Adjustment #8 can affect adjustment #6
FUNCTION- Determines how quickly the elevator transitions from full speed to levelling speed and from levelling speed to a stop.
PRESET- Gently turn in (CW) until stop turn out (CCW) 3 turns
OPERATION- Turn in to increase time it takes to slow
SETTING- Adjust for a smooth stop but no coasting
Adjustment #9 (DL) – Down Levelling speed
FUNCTION- Determines the speed of the car when traveling down in levelling speed.
PRESET- Adjust until screw is flush with casing.
OPERATION- Turn in to reduce the levelling speed.
SETTING- Adjust so that the levelling speed is approximately 10 feet per minute (2 inches in per second).

How to get the elevator out of the pit

NOTE: The Blain valve will not allow the contactors alone to raise the elevator.

- Jumper terminal #1 to terminal #6
- Jumper terminal #33 to terminal #35
- Push in both contactors till the elevator moves up
- Remove the jumpers