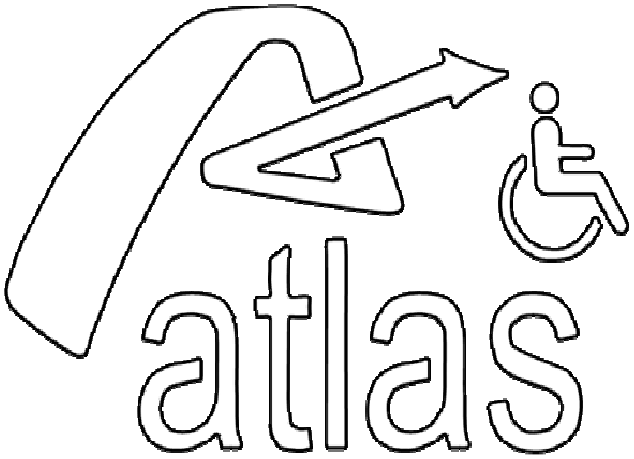
INSTALLATION & MAINTENANCE GUIDE

ELVOR

B-355



VERSION 2.0 (2016)

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NOTICE TO THE READER

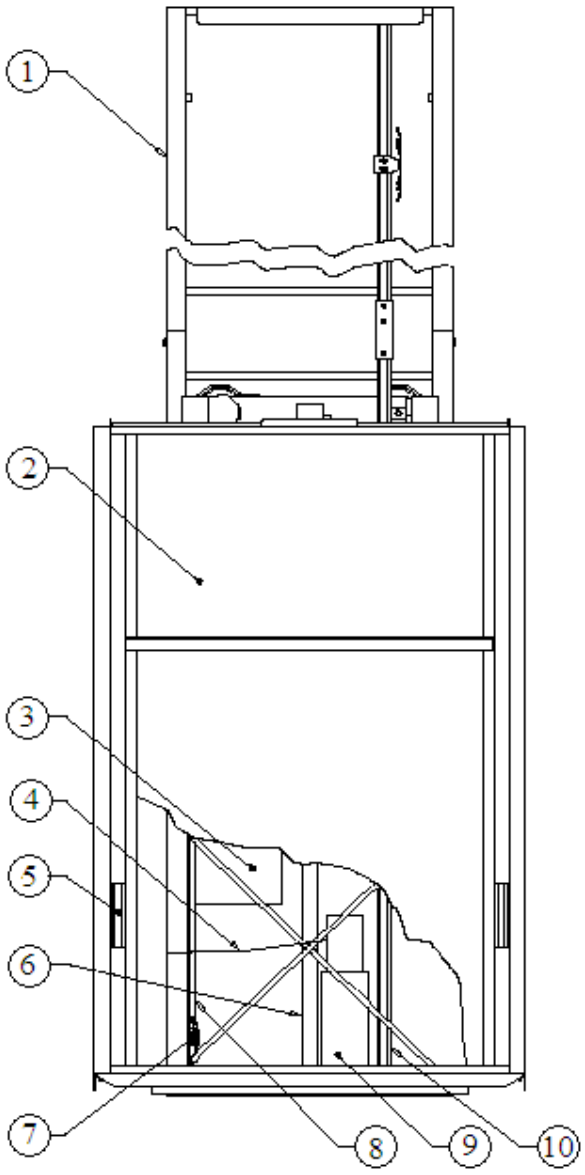
1. This manual is intended for the professional service technician, qualified to install this type of equipment;

2. A manufacturer-supplied training is required;

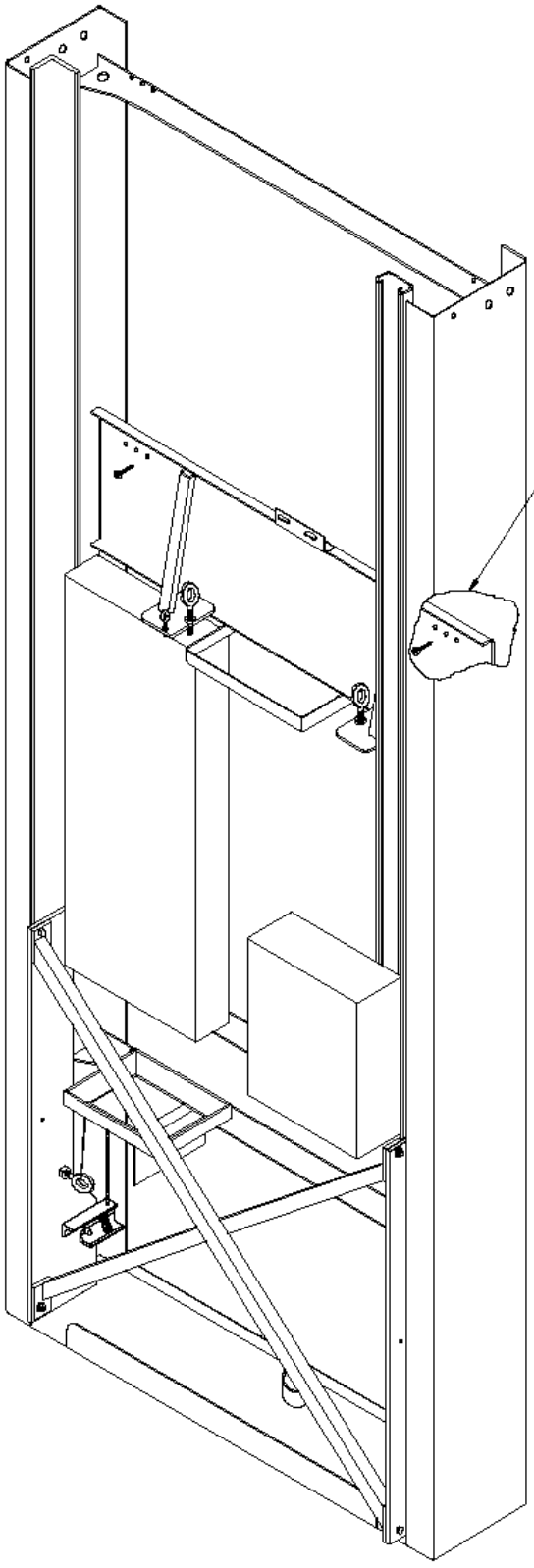
3. All the components for the installation is provided by the manufacturer, **see annex;**

4. Make sure to have all necessary components on hand before beginning the installation.

Main components



1. Tower
2. Vehicle (cabin)
3. Controller
4. Hydraulic pump maual release cable (to lower the cabin in case of an emergency).
5. Cantruss profiled channel for the door interlock cams.
6. Hydraulic cylinder.
7. Parachute (left side)
8. Drive cable (left side)
9. Hydraulic pump.
10. Cantruss profiled channel for the limit switches and micro-leveling cams.



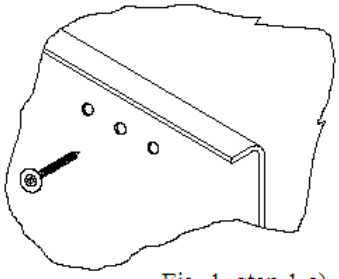


Fig. 1, step 1 c)

STEP 1

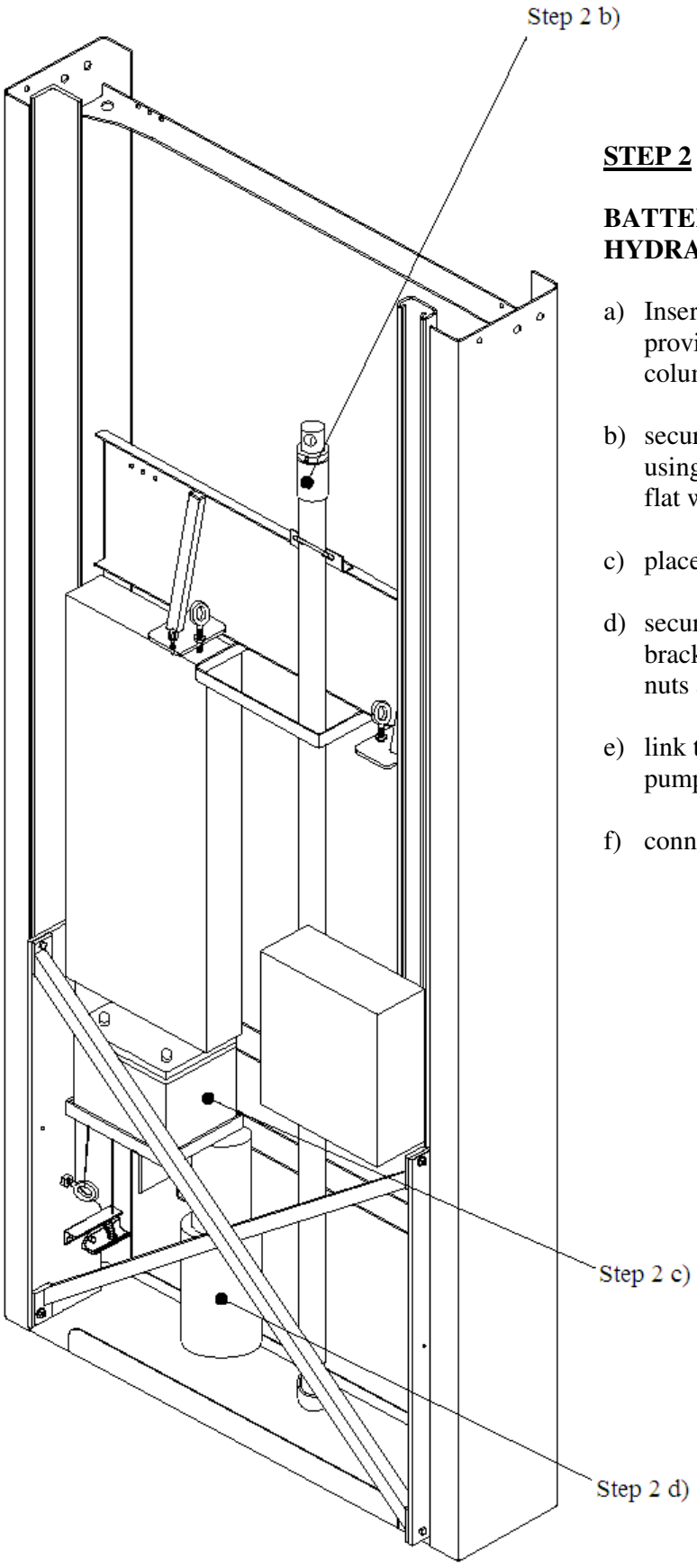
COLUMNS, LOWER SECTION

a) Make sure the wall structure supporting the elevator shaft is made according to the sketch in the A-1 annex;

b) position the columns lower section in place against the supporting wall. For the proper distances, see sketches A-2 to A-4;

c) temporarily secure the lower section with two #14 x 4” wood screws, at every 2 L-shaped brackets and on the cable attachment structure.

If the elevator is equipped with a 1-1/2" diameter piston cylinder go directly to Step 4, otherwise continue to Step 2 below.



STEP 2

BATTERY, PUMP AND HYDRAULIC CYLINDER

a) Insert the hydraulic cylinder in its provided location at the base of the columns;

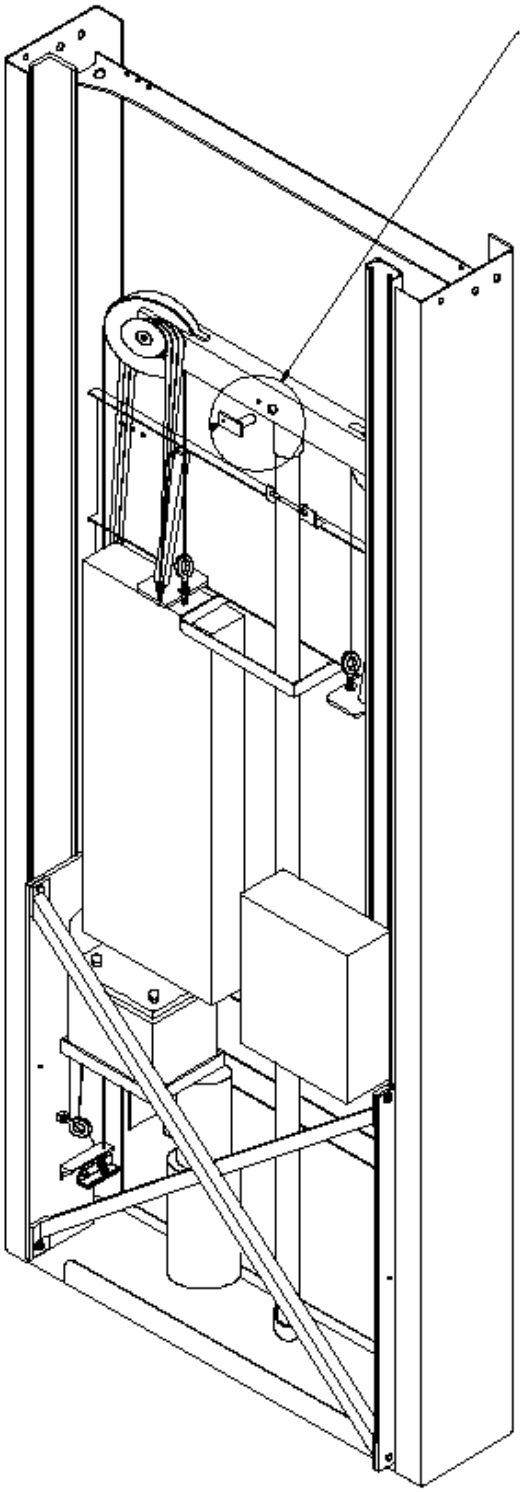
b) secure the upper part of the cylinder using a U-Bolt, two 5/16 hex nuts and flat washers;

c) place the battery on its rack;

d) secure the hydraulic pump to its bracket. Use two 3/8 bolts with hex nuts and flat washers;

e) link the cylinder to the hydraulic pump;

f) connect the battery to the pump.



STEP 3

CYLINDER HEAD, DRIVE CABLES AND ELECTRICAL CABLES

a) Secure the cylinder to the cylinder head assembly, using the special clevis pin assembly (part number AT06) and a 1/4-20 hex bolt. See Figure 2;

b) make sure the 2 drive cables are well engaged in the pulley grooves and solidly attached to the parachute assemblies;

c) make sure the electrical cables are well located inside the plastic pulley grooves and in the hook located on the left side buggy.

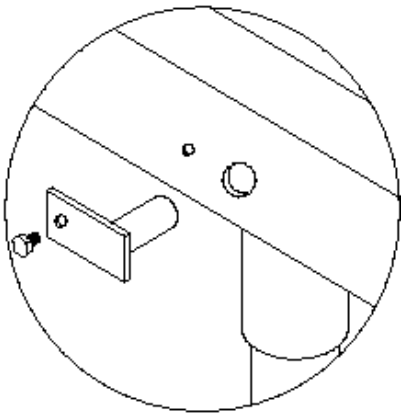


Fig. 2, Step 3 a)

Fig. 3 - Step 4 a)

Fig. 4 - Step 4 b)

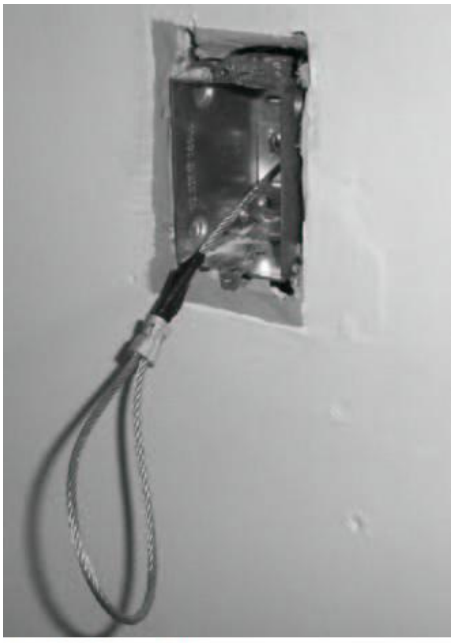


Fig. 5 - Step 4 d)

STEP 4

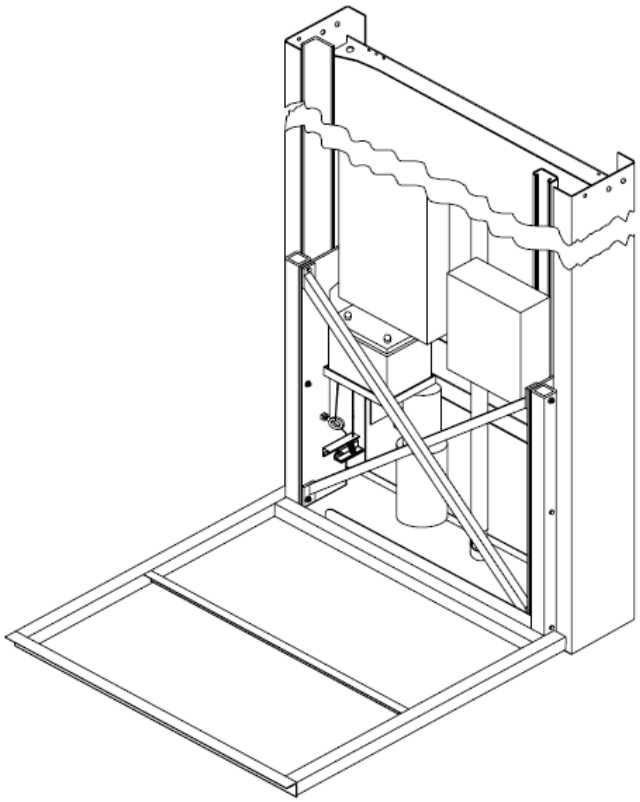
EMERGENCY DESCENT

a) Place the tubing between the column and the junction box located near the bottom landing door, according to figures 3 and 4;

b) attach the cable to the manual release valve on the hydraulic pump. See figure 4;

c) pass the other end of the cable through the tubing and into the junction box;

d) build a loop on this end of the cable using the AOS lug for 1/8" cable supplied with the unit. See figure 5.



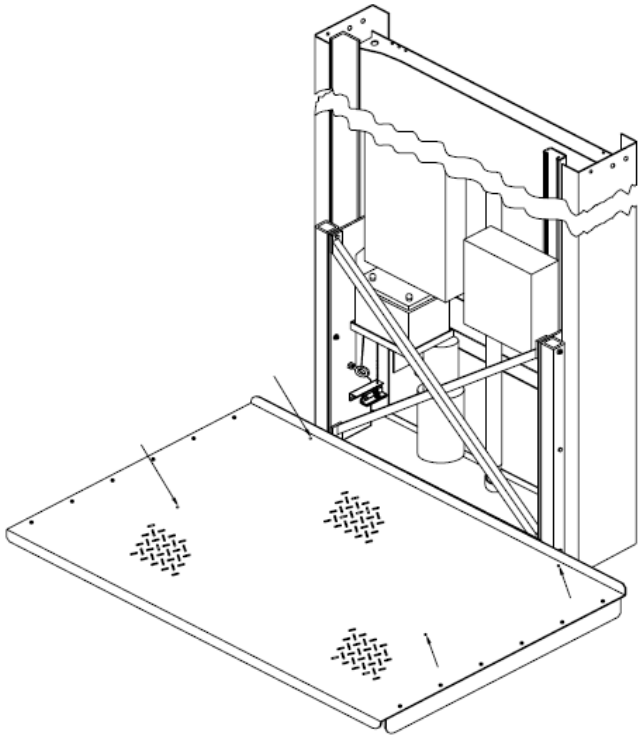
STEP 5.1

FLOOR STRUCTURE

a) Position the floor structure on the carrying buggies;

b) secure the floor structure to the buggies using the six (6) 3/8-16NC hex bolts and nuts;

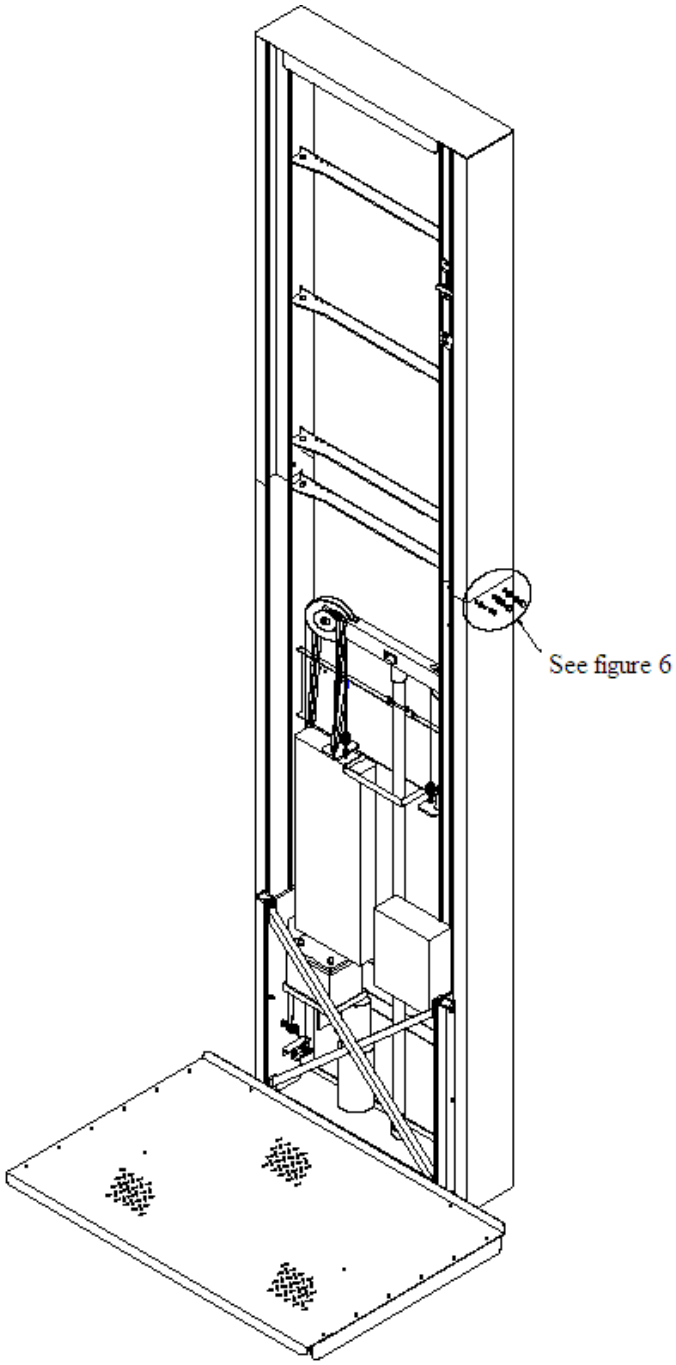
c) check for the stability of this assembly. Use shims if necessary;



STEP 5.2

FLOOR PLATE

Secure the floor plate to the floor structure using the four (4) #12-24NC flat head screws provided for this purpose. Use the holes indicated by the arrows.



STEP 6

COLUMN EXTENSIONS

a) Add the column extensions to the base columns already secured to the supporting wall;

b) bolt each joint assembly with two 3/8-16NC hex bolts, nuts and flat washers and one 1/4-20NC hex bolt, nut and flat washer. See figure 6;

c) check for assembly straightness and adjust as necessary;

d) secure the whole assembly using #14 x 4" wood screws. See figure 1 on page 5;

e) add the Cantruss profile extensions in order to install the normal landing stop limit switches and the auto-leveller cams.

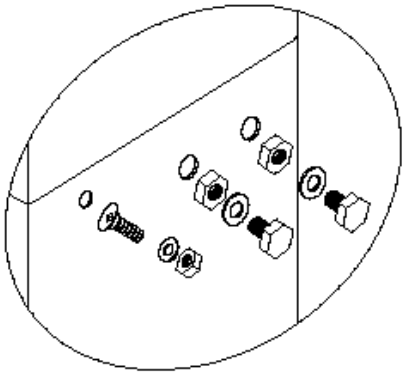


Fig. 6 - Step 6 b)

STEP 7

LIMIT STOPS, AUTO-LEVELLER AND NORMAL LANDING STOP LIMIT SWITCHES AND DESCENT SPEED ADJUSTMENT

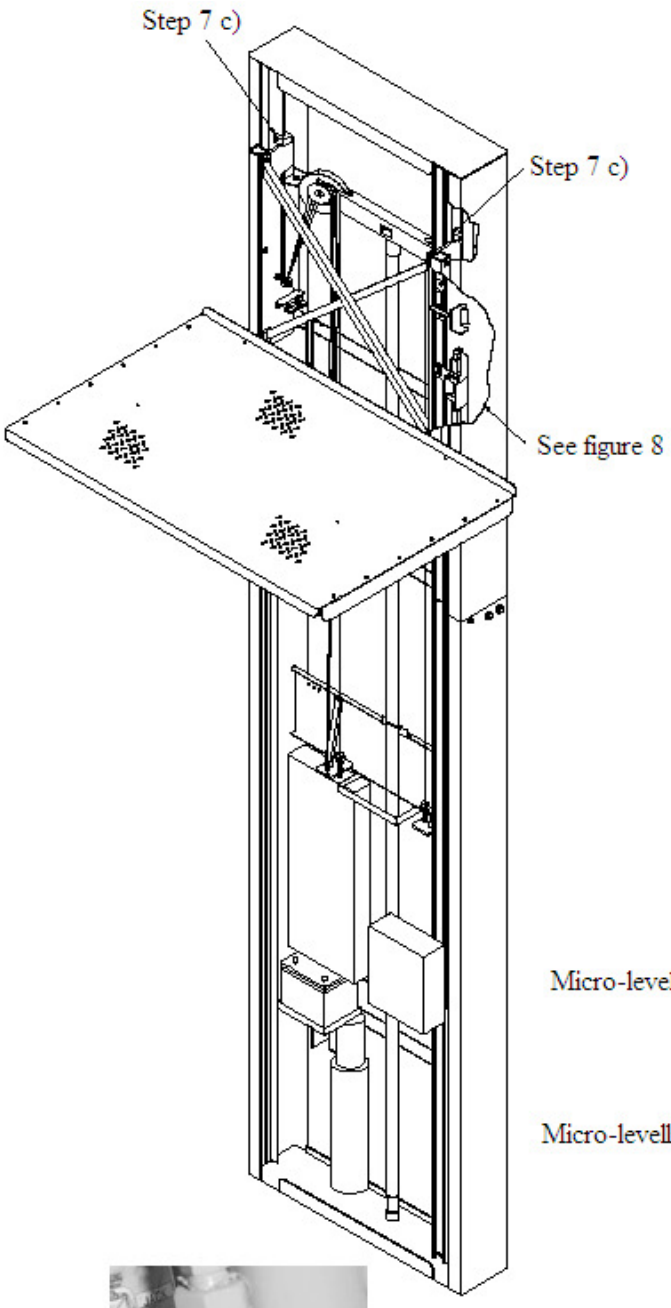


Fig. 7 - Step 7 c)

a) Perform all electrical connections in conformity with the furnished electrical diagrams;

b) place and adjust the normal stop limit switches for all the landings;

c) install the 2 limit stops. Install them by resting them against the carrier buggies when the cabin floor is about 38mm (1-1/2") higher than the uppermost landing.

d) place the auto-levelling cams in their neutral position at every landing, making sure the cabin floor and landing door thresholds are flush;

e) adjust the descent speed with the valve located at the bottom of the cylinder. Adjust the speed so that the cabin travels down 2 feet in 4 seconds.

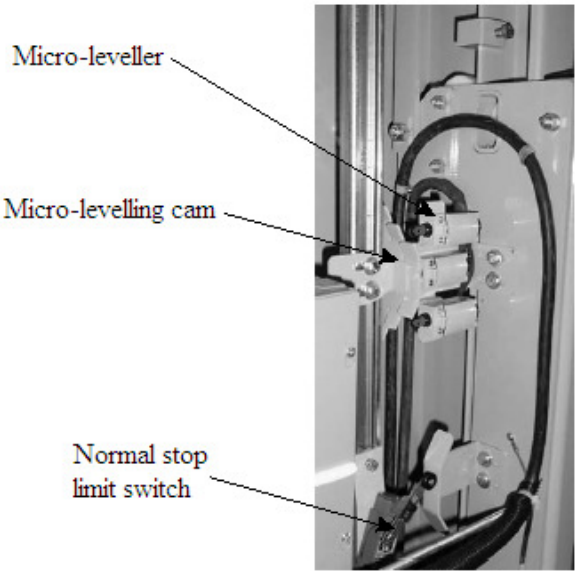
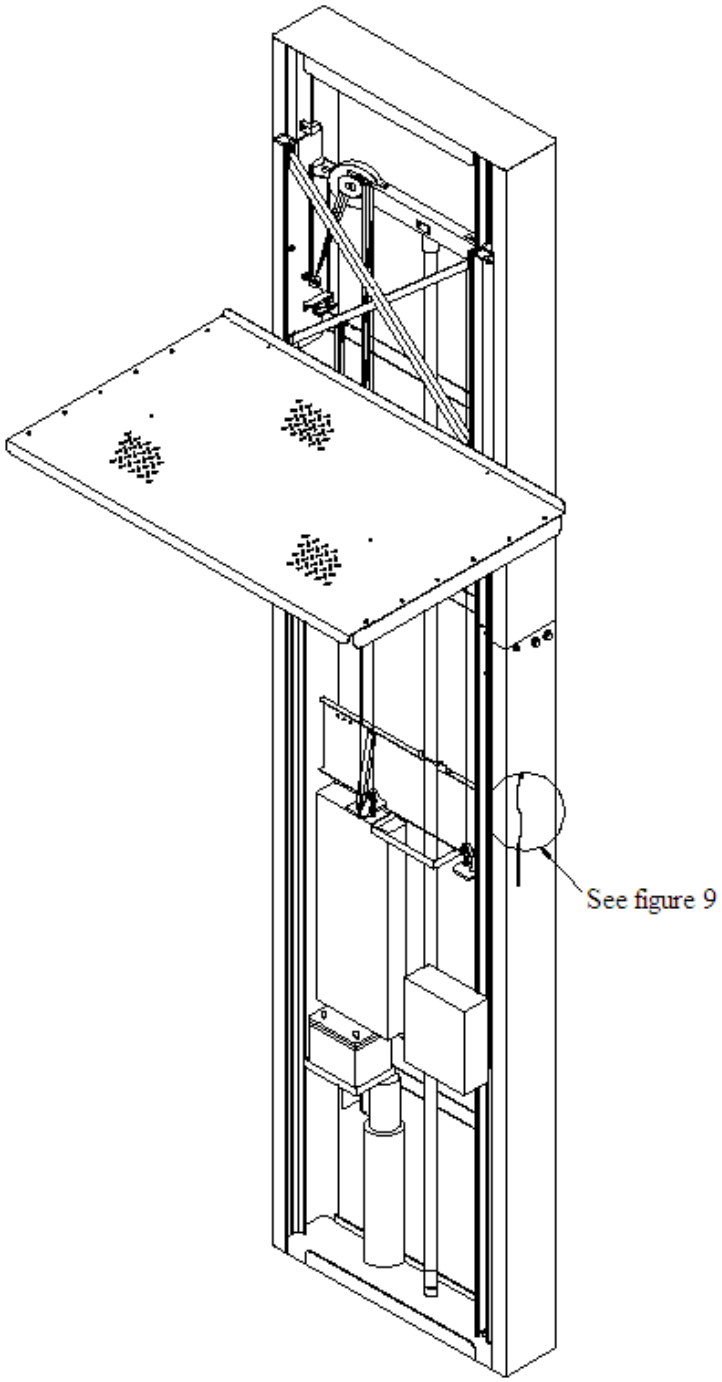


Fig. 8 - Steps 7 b), 7d)



STEP 8

SHORES

Attach the 2 shores at the locations provided for this purpose on the columns. Use 1/4-20NC self-tapping screws. See figure 9.

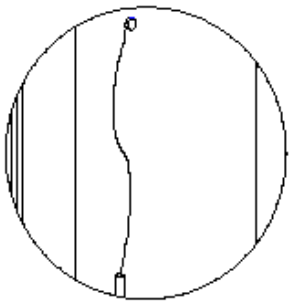
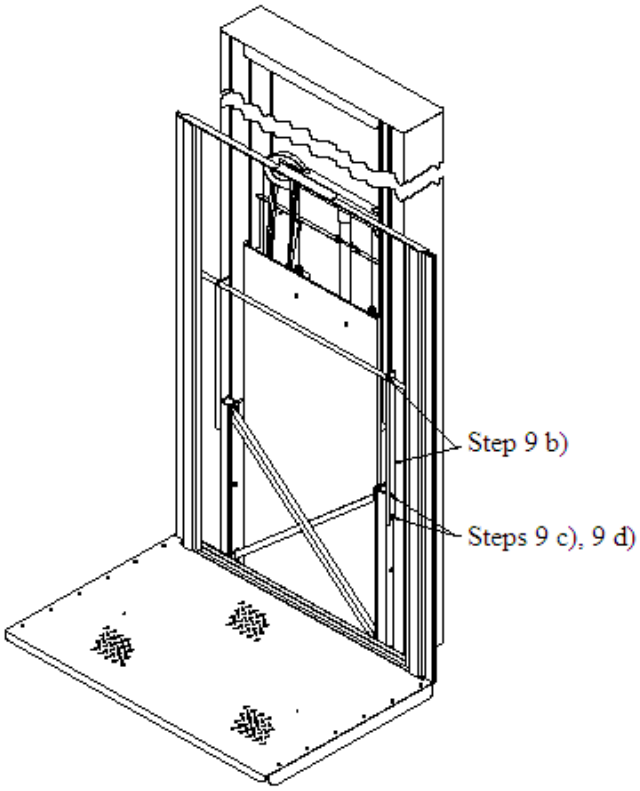
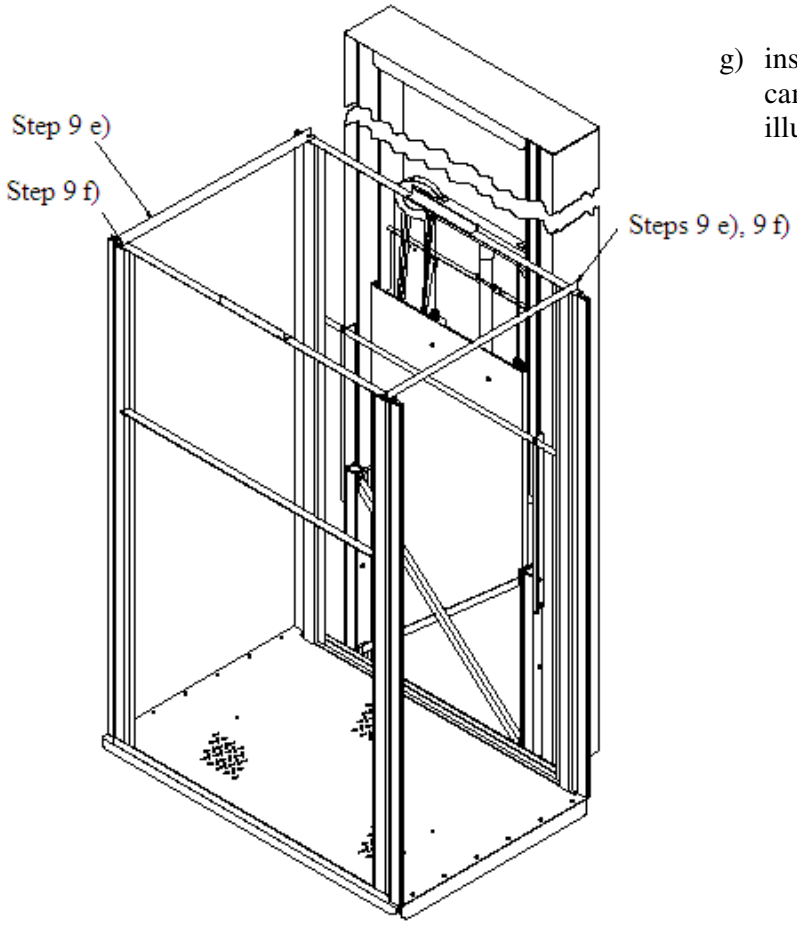


Fig. 9 - Shore attachment point





STEP 9

CABIN

a) Attach one of the cabin frames to the elevator floor;

b) attach the 2 parts AR-135_040_7 on the cabin frame. Use two 1/4-20NC flat head screws;

c) attach the 2 parts AR-135_040_7 on the floor structure. Use the same bolts already on the floor structure;

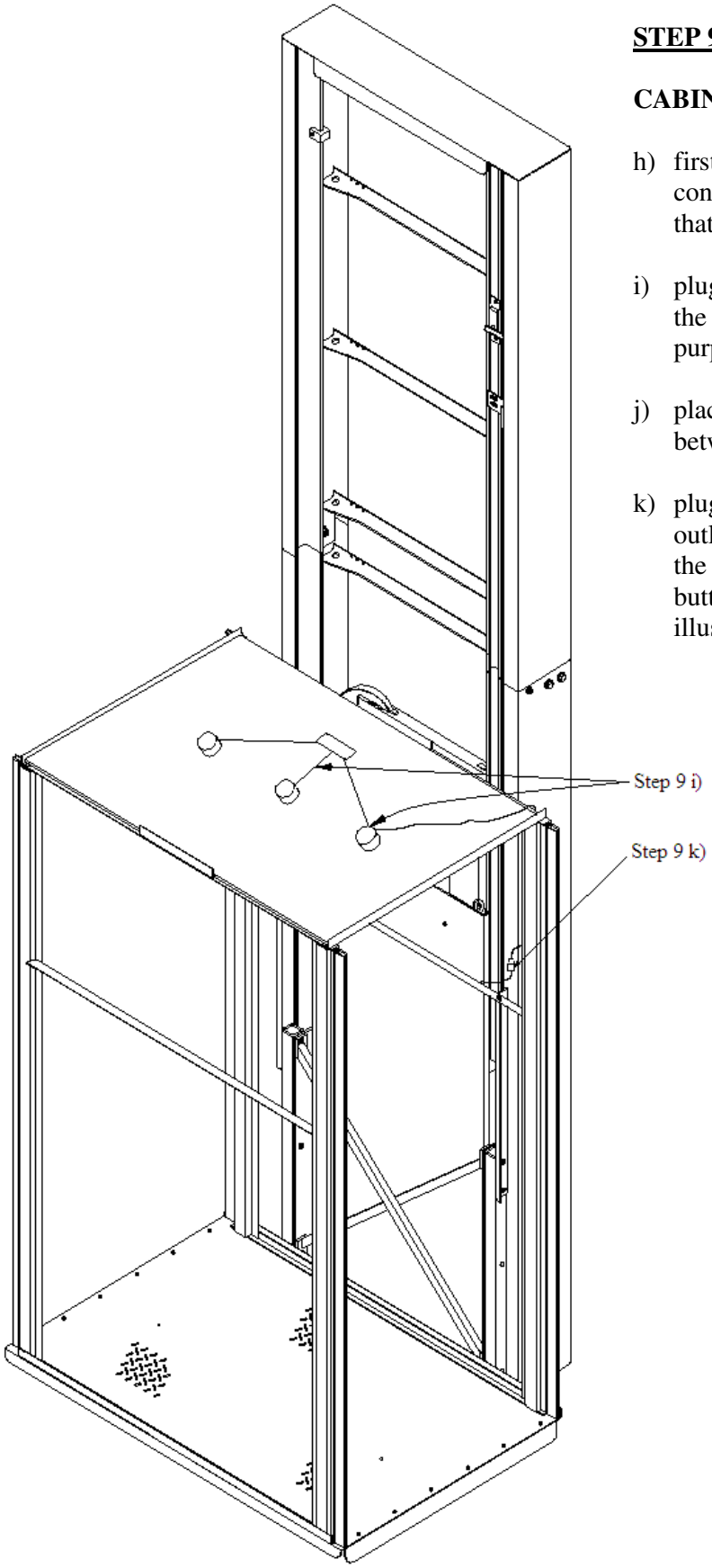
d) adjust and secure the first cabin frame using the floor structure bolts;

e) secure the other frame on the elevator floor;

f) join the 2 frames with the L-shaped supports. Use four 1/4-20 flat head screws;

g) install the door interlock unlocking cams at every landing. Adjust such as illustrated below.

Fig. 11 - Step 9 g)



STEP 9 (continued)

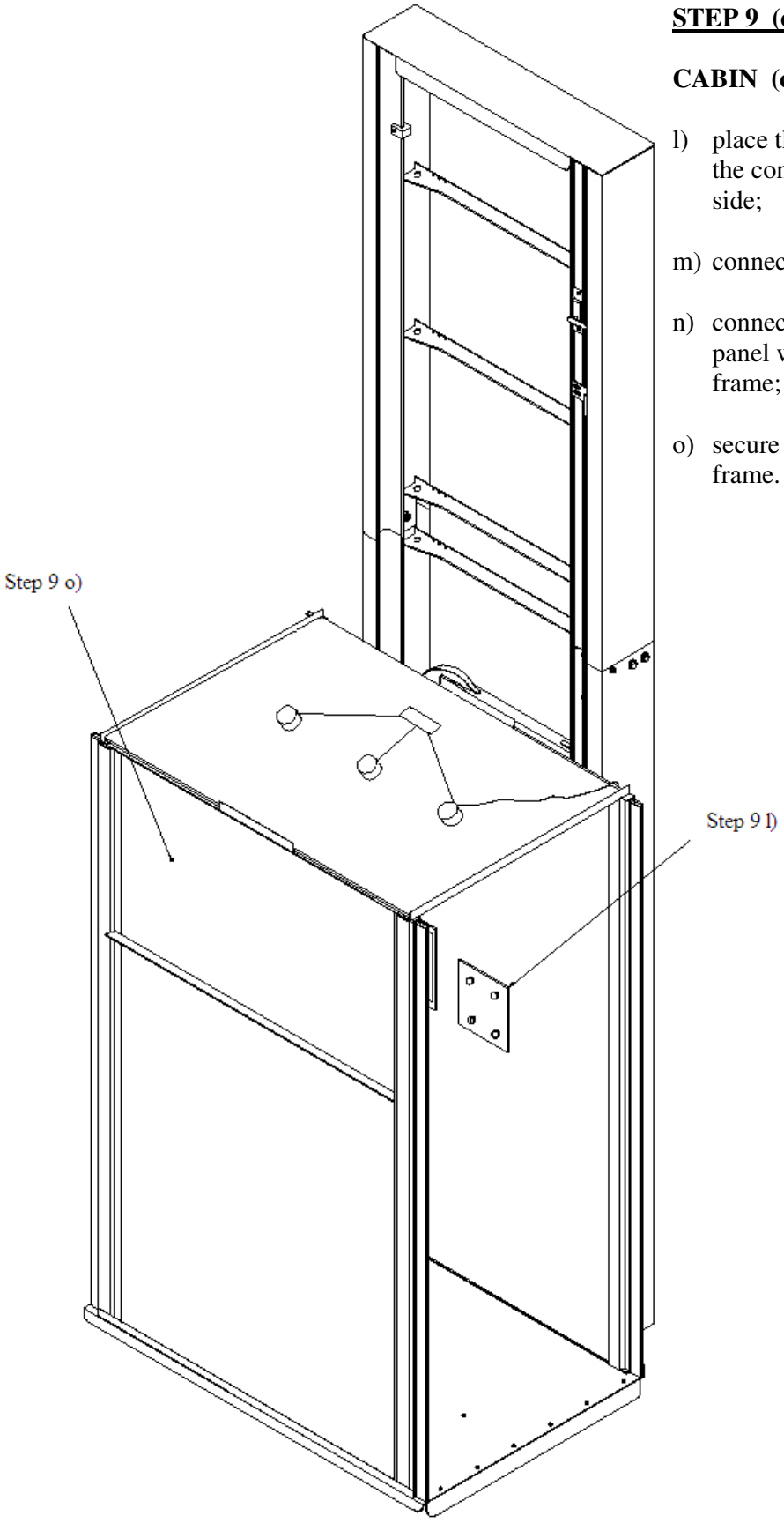
CABIN (continued)

h) first make sure the cabin roof contains the warning label indicating that it cannot support any weight;

i) plug in the emergency lighting unit in the double outlet provided for this purpose on the roof;

j) place the cabin roof assembly between the L-shaped supports;

k) plug in the lighting unit at the single outlet located between the tower and the cabin wall containing the control buttons. See the arrow on the illustration.



STEP 9 (continued)

CABIN (continued)

l) place the melamine panel containing the control buttons on the column side;

m) connect the control buttons;

n) connect the telephone and secure the panel with the control buttons to the frame;

o) secure the other panel on the other frame.

STEP 10

PRE-START UP CHECK

a) Affix the shoring warning label under the platform;

b) make sure that the elevator call buttons at all landings are placed between 890mm and 1370mm (35 and 54 inches) from the floor;

c) plug the battery charger in the electrical outlet if the unit is equipped with a battery;

d) check that the emergency button and alarm are functional;

e) check that the emergency platform lowering system is functional;

f) check the protection circuits (redundancy) according to the procedure described on page 20;

g) make sure all nuts and bolts are tight;

h) make sure all the steps 1 through 9 were performed correctly;

i) if the 2 disconnecting switches were not supplied with the unit, make sure to use ones that meet the first part and Quebec modifications of the Canadian Electrical Code;

j) perform travel and limit stop tests;

k) check the auto-levelling tolerances in case of an improperly locked landing door, according to the procedure described on page 24;

l) check the auto-levelling function in case of oil leakage according to the procedure described on page 24;

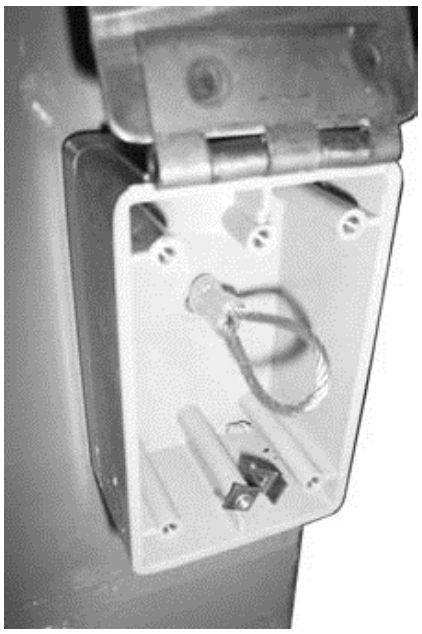
m) perform a parachute test according to the procedure described on page 18;

n) perform a manual emergency descent according to the procedure on page 17.

VEHICLE DISPLACEMENT IN AN EMERGENCY

To manually move the elevator car in case of an emergency, perform the following steps:

- Open the junction box located near the bottom landing door by removing the screws;
- Pull on the manual release cable until the vehicle reaches the lowermost landing door;
- Once the emergency situation resolved, securely close the junction box.



PARACHUTE TESTING PROCEDURE

1. **Perform the following steps to test the parachute mechanism:**

Parachute and cable slack switch.

- Load the elevator car with 940 pounds and block its down stroke with a 2 x 4 wood beam, 1 meter long (39-1/2 inches);
- Lower the hydraulic cylinder by approximately 75mm (3inches) in order to produce a cable slack of about 150mm (6 inches);
- Standing about 1 meter away from the car and using a piece of wood, abruptly knock the 2x4 beam away. The elevator car should come to a sudden stop within 60mm (2-3/8 inches) and a noticeable slack should still be present in the cables.

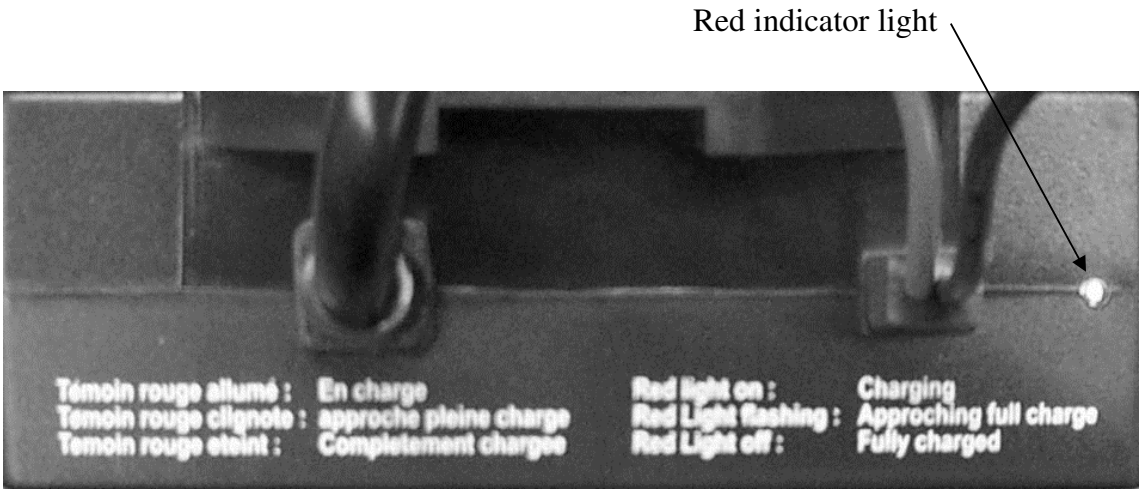
2. **Resetting the parachute:**

- Insert a jumper between the number 58 and 59 terminals;
- Reset the parachute switch signal on the Zelio logic relay by pressing the Z4 key;
- Re-establish cable tension to deactivate the parachute. Lower the elevator car on a block of wood so that the cables to become slack again;
- Remove the carrier buggies for close inspection of the parachute mechanism and to make sure it is in perfect working condition. Reset both the parachute and cable slack switches by pulling on their rearmament tabs;
- Raise the elevator vehicle to restore cable tension. **REMOVE THE JUMPER ON THE CONTROLLER TERMINALS.**

BATTERY CHARGER TESTING PROCEDURE

This apparatus is equipped with a charger for each one of the 2 batteries. To check each of the chargers, perform the following steps:

- Disconnect the 2 chargers from the 120 volts AC outlet;
- Perform 3 to 6 platform cycles in order to partially discharge the batteries;
- Make sure that each charger is correctly connected to its corresponding battery: red connector to the positive terminal and the black connector to the negative battery terminal;
- Connect each charger to the AC outlet. Both chargers should now have the red indicator light on;
- Connect an ammeter to the red wire of the charger to be tested, in series with the positive terminal of the battery it is connected to;
- If the measured current is over 0,5 amps, the charger is working properly;
- When the battery is fully charged, the indicator light should remain off.



April 2010.

PROTECTION CIRCUITS (REDUNDANCY) TESTING PROCEDURE

The following document describes the testing of the protection circuit in case of failure (REDUNDANCY) of the elevator platform. This information is to be used exclusively by a qualified service technician, accredited by Atlas Escalators Inc.

WARNING: THE FOLLOWING TESTING PROCEDURES WILL PRODUCE MOVEMENTS OF THE APPARATUS. MAKE SURE NO ONE IS STANDING BELOW OR ON THE ELEVATOR PLATFORM WHILE PERFORMING THESE TESTS.

TESTING OF THE ACTIVE SECURITY

To execute this part of the procedure, remove the front face plate of the elevator platform (EPF), if applicable, and open the panel of the BEC01Z3 controller.

C1 contactor (Main)

To check for the proper functioning of the C1 contactor's active security, perform the following procedure:

1. Using a screwdriver, push in and hold the C1 contactor plunger;
2. After 1.5 seconds, the ZELIO will fall in Fault Mode (the number 8 output indicator will switch to inverted display).
3. Reset the fault by pressing the Z4 key on the Zelio.
4. Command an UP movement of the platform. The moment the movement begins, keep the C1 contactor plunger depressed with a screwdriver and press the Emergency Stop button. The EPF should come to a stop

rapidly. Release the UP button, the contactor and the Emergency Stop button.

5. If the ZELIO falls in Fault Mode, reset the fault by pressing the Z4 key.
6. Disconnect the wire at the IG connector on the C1 contactor.
7. Press the UP button of the EPF. The ZELIO must fall in Fault Mode.
8. Reconnect the wire at the IG connector on the C1 contactor.
9. Reset the fault by pressing the Z4 key on the Zelio.

M1 contactor (UP movement)

To check for the proper functioning of the M1 contactor's active security, perform the following procedure (make sure the elevator car is not at its uppermost position):

1. Using a screwdriver, press down and hold the M1 contactor plunger.
2. **Briefly** press the UP button.
3. After 1.5 seconds, the ZELIO will fall in Fault Mode.
4. Reset the fault by pressing the Z4 key on the Zelio.
5. Command an UP movement of the platform. The moment the movement begins, keep the M1 contactor plunger depressed with a screwdriver and press the Emergency Stop button. The EPF should come to a stop rapidly. Release the UP button, the contactor and the Emergency Stop button.
6. If the ZELIO falls in Fault Mode, reset the fault by pressing the Z4 key.
7. Disconnect the wire from IC connector on the M1 contactor.
8. Press the UP button of the EPF. The ZELIO should fall in Fault Mode.
9. Reconnect the wire in the IC connector on the M1 contactor.
10. Reset the fault by pressing the Z4 key on the Zelio.

Descent solenoid.

To check for the proper functioning of the descent solenoid, perform the following procedure:

1. Make sure the elevator car is at its uppermost position (furthest possible position from the bottom landing door).
2. Adjust down the descent speed rate. (Adjust to initial speed after tests).
3. Install an 18 gauge (or thicker) jumper wire between the number 60 and 66 terminals (therefore applying 24 DC volts to the solenoid coil).
4. Once the elevator car begins to drop down, press on the Emergency Button. The car should stop very quickly and the ZELIO falls in Fault Mode.
5. Remove the jumper wire from the number 60 and 66 terminals.
6. Reset the fault by pressing the Z4 key on the ZELIO.
7. Disconnect the wire at the number 63 terminal.
8. Press the DOWN button of the EPF. The down movement should start then stop after about 0.5 seconds and the ZELIO will fall in Fault Mode (the number 8 output indicator will switch to inverted display).
9. Reconnect the wire on the number 63 terminal.
10. Reset the fault by pressing the Z4 key on the ZELIO.

Ground check.

This last test is to make sure the fuses will do their work in the event of a short circuit to any of the electrical components in the system.

Attach a lead wire from an ohmmeter on the main ground terminal inside the BEC01Z3 panel, and with the other lead wire check that there is continuity (less than 0.3 ohm) between the ground terminal and all other metal surfaces near the safety switches or control buttons of the apparatus (panel back plate, near the parachute and cable slack switches, upper final limit, etc.).

If either of these checking procedures produce inconclusive results, contact ATLAS ESCALTORS' service department for the next course of action to correct the issue.

Maintenance: Bi-annual and annual

***See document ALT-CK-001-06