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12 JUNE 2017

Technical Support 855.804.5774 - TechSupport@WaupacaElevator.com/Jsite/
Ethical Standards

Waupaca Elevator Company subscribes to the ACCESSIBILITY EQUIPMENT MANUFACTURERS ASSOCIATION (AEMA) Code of Ethical Practices:

Be it resolved that we will conduct our business affairs in such a manner that they will be fair to all parties concerned.

- And further resolved, that we will manufacture and/or distribute only products which reflect good quality, safety and the best engineering practices for any given application.
- And further resolved, that we will respect our competitors deserving of our respect.
- And further resolved, that we will refrain from being derogatory.
- And further resolved, that we will not take unfair advantage of our dealers.
- And further resolved, that we will always uphold the high standards and the purposes of AEMA.
- And further resolved, that we will refuse to be party to any of the following: price fixing, collusion monopoly, non-code compliance, deviation from specifications after quoting, and knowingly endorsing members of this or any other trade association if they are not qualified or are known to be unethical or dishonest.

Introduction

Installation should be done by a trained authorized Elevator Contractor in accordance with these instructions and in compliance with requirements of National Elevator Code, National Electrical Code, American Standard Safety Code, and State and Local Building Codes.

This manual is designed as a guide to the installation and maintenance of this Waupaca Elevator unit. The instructions are designed to help ensure the safe installation and operation of this unit. Read them carefully before beginning installation.

Inspect for visible signs of damage or missing parts BEFORE beginning installation. The final check list indicates all components included with this order.

Work by others to include, but not limited to, the hoistway construction, supports for guide rails and an electrical fused disconnect to control panel.

Do not expose electrical components to the elements or extreme temperature fluctuations. Resulting condensation will damage equipment, causing it to malfunction. If exposed, let sit for 12-24 hours prior to operation.

Safe operation requires a maintained hoistway and mechanical room temperature between 60° F to 110° F.

Illustration Notification

For purposes of visual clarification, some parts have been omitted from certain illustrations. Illustrations are of typical parts and may not match your materials exactly.

Safety Alerts

Danger!
Indicates a condition where failure to follow exact instructions or heed warnings may result in equipment damage, personal injury or death.

Important
Indicates critical information that should be reviewed carefully.

General Reminders
These symbols will remind you of potential injury.
WARNING & SAFETY LABEL INSTALLATION

SERIES: 015 - 018 - 115 - 118

Operating Instructions:
1. Securely close hoistway door(s).
2. If keylock is provided, insert key in lock and turn to “on”.
3. Press desired floor on the car operating panel.
4. Once stopped at landing wait for automatic gate to open.
5. Open door and exit elevator.
6. Securely close hoistway door.
7. Should elevator fail to operate:
   - Verify gate(s) is fully closed.
   - With keylock equipped units, verify key is in the “on” position.
   - Verify the stop button is pressed.
8. Do not overload elevator beyond its rated capacity.
9. Do not open gate while elevator is in motion.
10. Keep all body parts inside the elevator car at all times.

If stuck between floors, press alarm button or use phone to get assistance.
Do not attempt to repair this elevator yourself.

Wire Rope Tag:
(1) to the wire rope where it will not interfere with elevator operations.

DANGER
Elevator car can come down and crush you to death!
(1) to front wall in the overhead of hoistway.
(1) on top of elevator car.
(1) to hoistway wall 3’ above pit facing door.
(1) to inside of cab.
(1) to controller face next to emergency key holding bracket.

Front side  Back Side

OPERATING INSTRUCTIONS
- Pull Emergency Stop
- Use a 4 foot brace to support car.
- Slowly open hoistway door with interlock released.
- Gently turn key to release interlock.
- Insert key in keyway until handle contacts interlock.
- Pull Emergency Stop.

MFR: KISWIRE LTD.
DISTRIBUTED BY
ALPS WIRE ROPE CORP.

ROPE TENSIONING
1.) Should be done at installation.
2.) Adjusted after 30 days.
3.) Adjusted after 6 months.
4.) Check annually thereafter.

LUBRICATION
Lubricate only hoist and compensating ropes.

Wire Rope
Tag:
(1) to the wire rope where it will not interfere with elevator operations.

DANGER
Elevator car can come up and crush you to death!
(1) to front wall in the overhead of hoistway.
(1) on top of elevator car.
(1) to hoistway wall 3’ above pit facing door.
(1) to inside of cab.
(1) to controller face next to emergency key holding bracket.

Wire Rope Tag:
(1) to the wire rope where it will not interfere with elevator operations.

DANGER
Elevator car can come down and crush you to death!
(1) to front wall in the overhead of hoistway.
(1) on top of elevator car.
(1) to hoistway wall 3’ above pit facing door.
# PACA-GLIDE SEMI-ANNUAL
## GENERAL MAINTENANCE CHART

**Always de-energize electrical circuits** and follow proper tag out procedures during servicing or maintenance of elevator.

Use One Column Per Visit

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<thead>
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<th>Date</th>
<th>Technician</th>
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### ON EVERY VISIT CHECK THE FOLLOWING:

#### Overall Inspection
- See customer, correct all complaints
- Inspect machine space equipment and clean when necessary
- Ride car, checking for unusual noise or operation
- Check condition of car top, pit equipment, clean when necessary
- Look for burnt out lights

#### Powerhead
- Check gear box for leaks
- Check brake, making sure that it operates smoothly
- Lubricate pillow block

#### Controller
- Check contacts for excessive burning
- Check and test battery device
- Check fuse and holders

#### Gate
- Check gate operation
- Clean and lubricate rollers
- Check and clean gate operator & switches

#### Car
- Check alarm bell system
- Check emergency stop switch
- Check COP lights
- Check contacts and switches in car operating panel
- Check telephone is functioning

#### Hoistway
- Lubricate rail
- Check hall button contacts, clean if required
- Check and clean main guide rails
- Check wear and insulation on traveling cable
- Check junction box
- Check and clean interlocks
- Inspect and lubricate ropes (use SAE 20 oil)
- Check ropes for equal tension
- Check slack rope switch
- Check Final Limits & Pit Switch
- Check Car Top Stop Switch
- Test Emergency Light

#### Others

### Lubrication Recommendations:
- Use high quality (NLGI #1 or #2) lithium grease for all grease fittings.
- Use spray lubricant that meets and/or exceeds MIL-C-81309D & MIL-C-16173D.

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PTS70063-A  
1726 North Ballard Road - Appleton, WI 54911 - 920.991.9082  
12/06/2010  
Technical Support 800.238.8739 - TechSupport@WaupacaElevator.com

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<td></td>
<td>Set of Screw Drivers (flat &amp; phillips)</td>
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1) **An RMA Number must be issued at the time the part is ordered**, not after the fact, for all CREDIT and WARRANTY parts returns.

2) When placing an RMA order, specific information will be required as follows:
   a) **UNIT’S SERIAL NUMBER**
   b) part number (if available)
   c) exact description of the problem
   d) date of manufacture
   Have this information ready when you call to expedite the process!

3) **All returns** must be clearly marked with the assigned **RMA number** on the outside of the container.

4) **No item will be accepted without an RMA number**. Items sent to Waupaca Elevator without an RMA number will be returned to you at your expense.

5) Outbound Material RMA will be sent out UPS Ground. Any additional shipping costs will be at the dealer’s expense.

6) **Absolutely no returns will be accepted after 45 days. All RMA’s have a 45-day open date for receipt by Waupaca Elevator.**

7) **All replacement part orders will be invoiced upon shipping and will not be credited until the original part(s) have been returned** to the factory prepaid (no C.O.D.’s will be accepted).
   a) Credit will be issued if evaluation proves components to be defective or to have failed within our warranty period.
   b) Credit will not be issued if the parts have been installed improperly or misused.

8) Any **electrical** items returned in proper working condition will be returned to the dealer at the dealer’s expense. **Waupaca Elevator reserves the right to deny credit.**

9) Some parts may be subject to a 20% restock fee.

We encourage your cooperation with this policy as it will further expedite warranty replacement, better track returns and allow us to adjust your account in a timely and accurate manner.
Having the following items on hand will make the troubleshooting process easier and quicker.

**Must Have**
1. Serial Number of the unit
2. Multimeter
3. Wire Stripper
4. 1/8” Flat Screwdriver
5. Flashlight
6. Wiring Diagram for the unit

**Other Suggested Items**
1. Notepad
2. Fuses
3. Socket and Wrench Set
4. Allen Wrenches SAE and Metric
5. Clamp on Ammeter
6. Rags and Oil Dry

**Troubleshooting Tips**
1. Take notes as you troubleshoot for future reference.
2. Visually inspect component(s).
3. Check for loose wires and broken contacts.
4. When testing fuses take them out of the circuit (failure to do so may result in a false reading).
5. When checking for voltage do not check to ground
6. Be familiar with your multimeter.

**For Technical Support Call:** 1-800-238-8739 or 1-920-991-9082
Hoistway Dimensions

Hoistway must be plumb, square and have no dimension greater than 1” or less than 1/2” as compared to the hoistway layout drawings.

Verify the following with your field drawings:

1. Hoistway dimensions
2. Total travel
3. Pit depth
4. Clear overhead
5. Doorways are In-Line
6. Rail Backing
7. Chain hoist attachment point (overhead units only)

Other Hoistway Verifications

Verify these other hoistway dimensions and specifications before proceeding with installation of elevator.

A - Machine room location & dimensions (if applicable)
B - Clear access to hoistway

FAILURE TO VERIFY these dimensions with the drawings on site, may drastically INCREASE the amount of TIME spent on the job!
ASSEMBLE MAIN RAIL PER FIELD DRAWINGS

1. Use field drawings to determine where to center each rail section on the hoistway wall.

2. To determine the center, measure a bracket and divide by 2 (bracket length / 2 = value).

3. Use the value obtained in step 2 to measure over from the center line and plumb a line to the left or right.

4. Rails should be 21” apart inside to inside. Measure corner to corner on each section of rail to determine if rail section is square. Use adjustment bolts as necessary to ensure rail section is square. Torque 1/2” rail fasteners to 85 ft-lbs.

5. Align first section of rail with plumb line in the hoistway. Drill (2) appropriately sized pilot holes per rail bracket. Drill one appropriately sized pilot hole at the bottom of each rail for the first rail section only. Fasten brackets and rail bottom into place with architect specified hardware. Ensure rail is plumb and level. Shim as required.

6. To allow for the next rail section to be installed, thread rail clips counter-clockwise 1/4 of the bolt length out from the rail splice bracket.

7. Insert rail pins into predrilled holes of the installed rail section. Align rail pins with the predrilled holes on the bottom of the next rail section and carefully lower into place.

8. Drill (2) appropriately sized pilot holes per rail bracket and fasten into place with architect specified hardware. Finish fastening rail clips from step 6. Verify rail is plumb and level. Torque rail clip bolts to 85 ft-lbs.

9. Continue rail installation following the previous steps until the rail is completely installed.

VERIFY ALL FASTENERS ARE SECURELY FASTENED
USE PROPER CARE WHEN HANDLING WIRE ROPES!

**DANGER!**

**WIRE ROPE REPLACEMENT**

A kink (or any other damage) in the rope is permanent, a kinked rope must be replaced!

- Gently hold down one end
- Carefully uncoil rope while walking
- Do not twist or kink the rope!

If swedge is not provided with your unit use the wire rope ends.

**EXAMPLES OF WIRE ROPE DAMAGE**

- Starting to loop
- Kinked by tension
- Open kink
- Closed kink

**CUTTING THE ROPE**

Determine where the wire rope needs to be cut. Properly seize wire rope on both sides of where the cut is to be made. Cut perpendicular to the wire rope between seized sections.
TOP SHEAVE AND TRAVELING SHEAVE INSTALLATION

Typical layout shown, refer to field drawings for actual layout.

1. Place top sheave bracket above installed rail. Verify placement is true to rail system. Shim as necessary. Fasten to rail with the following provided hardware:
   - **Torque all 1/2” hardware to 85 FT-LBS.**
   - (2) - 1/2”-13 x 1-3/4” Grade 5 Bolts
   - (4) - 1/2” Flat Washers
   - (2) - 1/2”-13 Nylock Nuts

2. Drill (2) appropriate sized pilot holes and fasten to backing with architect specified hardware.

3. Verify traveling sheave cutout is located in correct position and relationship to the rail system (refer to field drawings).

4. Remove top and bottom C-channels from the box sheave and place hardware off to the side. Insert both box sheaves into cutout with the retaining pin side in the hoistway.

5. Position top C-channel in place and fasten with previously removed hardware. Repeat above step with bottom C-channel. Verify sheaves are assembled square and plumb with rail system. **Torque all 1/2” hardware to 85 FT-LBS.**

6. Drill (4) appropriately sized pilot holes and fasten to backing with architect specified hardware.

7. Ensure sheaves rotate freely and slide back and forth along the shaft.

**ATTENTION:**

Wire rope shown outside of retaining pin for clarity in rope placement directions. Wire rope must be roped between retaining pin and sheave.

**NOTE:** If using a top sheave in the elevator layout, determine pulley(s) and groove(s) in sheave(s) by referencing illustrations A and B. When roping the top sheave feed the wire rope around the top sheave depending on layout. Single pulley double grooved sheaves that offset to the right or left require both ropes to feed over the sheave in the same direction. Double pulley single groove sheaves centered in the top bracket require ropes to feed over the sheave in opposing directions. Verify wire ropes are clear from all obstructions and remain between the retaining pins and sheaves.
1. Block up left and right sling uprights approximately 6” (in a safe manner) so that sling is about floor level on the lowest level.

2. Insert guide block pins into the (4) pin sleeves located on the inside of the sling (locate the two (2) adjustable pins at the top of the sling).

3. Using the provided (8) - 1/4”-28 set screws securely fasten the guide block pins in position.

4. Press (4) guide blocks in position on the guide block pins. Verify the guide block holes are all offset in the correct orientation as shown with the thick end towards the backer once installed.

5. Set the right and left sides of the sling in position on the rail.

6. Loosely fasten the upright sections together with the installation clamps using the following provided hardware:
   - (2) - 3/8”-16 x 1-1/4” Hex Bolts
   - (2) - 3/8” Nylock Nuts

7. Verify sling uprights are true to the rail. Fasten the installation clamps.

Note:
There must be a slight gap between both upright cross angles. If the installation clamps are fastened tight against each other the sling will not slide freely in the rail system.
Verify there is a slight air gap between the safety actuator roller and the cam block. If no air gap is present, loosen screws that fasten safety switch on bracket and slide switch down on mounting slots. Fasten switch securely to bracket. Verify slack cable switch will trip by pressing down on actuator arm and an audible click is heard. Reset switch by pulling out on the reset button and an audible click is heard.

Verify the rail system is spaced 21” apart along the entire length of travel. Place the safety assembly in position on the bottom back of the sling. Loosely fasten the safety in the center of the sling, providing there is an equal space on each side of the safety dogs, with the following provided hardware:
- (4) - 1/2” Flat Washers (x 1/4” thickness)
- (4) - 1/2"-13 Nylock Nuts

Connect slack cable switch plugs, and fasten conduit to 2" x 4" box on safety assembly.

Connect the top of the conduit to the 2" x 4" box attached to the top crossmember. Loosely fasten the top crossmember in place with the following provided hardware:
- (2) - 3/8” Flat Washers
- (2) - 3/8”-16 Nylock Nuts

Fasten bottom crossmember plate in place with the following provided hardware:
- (4) - 1/2"-13 x 1-1/2” Hex Screws
- (4) - 1/2” Flat Washers
- (4) - 1/2”-13 Nylock Nuts

Verify there is an equal distance from the safety dogs to the rails on each side, while the guide blocks remain seated tight to the rail along the entire length of travel. Verify sling is true to rail system, and the safeties only set when the wire ropes become slack. **Torque all 1/2” sling fasteners to 85 ft-lbs, and torque all 3/8” sling fasteners to 44 ft-lbs.**

**Verify Fasteners are Securely Fastened!**
If side extensions are provided, determine cab DA dimension (reference field drawings for the DA dimension). Subtract 4" from the DA dimension and adjust the side extensions to extend out to this numerical value. The cab will hang over the extensions 2" on each side. The maximum the cab can hang off the edge of the sling is 3-3/16". Reference the side extension configurations shown above to best suit the cab. Fasten the side extension arms in place with the fastening plates and the following provided hardware:

(12) - 3/8" Flat Washers
(12) - 3/8" - 16 Nylock Nuts

If the front sling extension is provided proceed with steps 2 through 4. Disassemble sling extension and place off to the side with the hardware in a safe location.

Measure the cab floor width (reference field drawings for the AB dimension) and subtract 4" from the over all dimension (write this measurement down for use later).

Slide both sling extension arms horizontally into the left and right uprights. Extend the arms out from the sling by the value obtained in step 3. Verify that extensions, once inserted, do not extend past the cab floor. Fasten both sling extensions to the uprights with the following provided hardware:

(6) - 3/8" Flat Washers
(6) - 3/8" - 16 Nylock Nuts

VERIFY ALL FASTENERS ARE SECURELY FASTENED
1. Fasten the front sling extension plate on to the sling extension arms with the following previously removed hardware:
   - (4) - 3/8" Flat Washers
   - (4) - 3/8" Nylock Nuts

2. Position the sling extension feet on the sling extension plate. Slide each side to be even with the side extensions or the sling if side extensions are not provided. Fasten in place with the following previously removed hardware:
   - (4) - 3/8"-16 x 1-1/2" Bolts
   - (8) - 3/8" Flat Washers
   - (4) - 3/8" Nylock Nuts

3. Determine the overall cab height by adding the floor thickness + wall height + ceiling thickness = overall cab height.

4. Place the stabilizer brackets inside each stabilizer arm and securely fasten. Loosen the hardware securing the stabilizer arms, but do not remove. Slide the cab stabilizer arms to the height previously determined in step 3, and fasten in place. Remove only the stabilizer brackets, and set aside for ease of cab assembly.

Verify Fasteners are Securely Fastened!
**ATTENTION:** Refer to field drawings for your powerhead layout. Wire per electrical schematics. Wiring and powerhead installation must meet N.E.C. and local codes.

1. Place powerhead in position per field drawings. Verify proper powerhead position and the base of the unit must be true to the sheave and level. Use one isolation hardware set per anchor hole listed below:
   - (1) - 1/2” Steel Washer
   - (2) - Neoprene Washers

2. Using all anchor holes fasten powerhead in place with architect specified hardware.

3. Feed each wire rope around the corresponding sheaves (Be sure to run wire rope between retaining pins and the sheave), over the top of the drum, and wrap twice minimum per each side. **Refer to Field Drawings if extra wraps of rope are required for your application.**

**Note:**
Waupaca Elevator, Co., requires a minimum of two wraps of rope under tension to remain on the drum when the elevator car is sitting on the pit floor. The drum must be full of wire rope when the car is at its top final. In addition, the wire rope must not wrap over the first row of rope to make a second layer. Also, the cable clamps must be pulled up into the inside of the drum ring. Verify no wire rope is extended outside of the drum ring.

4. Feed each wire rope end through the corresponding hole on each end of the drum and tuck into drum recess.

5. Slide (1) cable clamp on the end of each wire rope. Slide the cable clamp against the drum and securely fasten the set screws against wire rope. Only 1” of wire rope may remain past the cable clamp (Reference Proper Handling of Wire Rope Page). Properly seize and cut wire rope ends. Waupaca Elevator, Co., requires applying thread locker to the threads on the set screws.

6. Verify wire ropes are resting in all required sheave grooves and wire rope encounters no obstructions. Verify equal tension between wire ropes.

7. Remove junction box cover and wire per schematic. All wiring must meet N.E.C. and local codes. **Note:** Wire to low voltage/230 volt diagram on motor.

8. Securely fasten junction box cover back in place. **Be careful not to pinch wires or cut insulation.**

**VERIFY ALL FASTENERS ARE SECURELY FASTENED**
Verify Equal Tension Between Ropes

Note: If necessary route wire ropes from powerhead through sheave paths (refer to field drawings) and into shackles.

Step 1 Release safety by unscrewing nuts to cotter pin. The minimum distance of shackle rod above safety assembly is 2". This allows the slack cable switch to trip when cables are slack.

Step 2 Route wire rope through shackle with shackle wedge, wedge into place, and
   a) clamp cable clamps at max. distance of 1-1/2"
   b) clamp cable clamps at max. distance of 3"

Step 3 Once shackles are assembled and roped, place anti-rotation bracket into both shackles, insert cotter pin, and flare ends of cotter pin.

Step 4 TEST SAFETIES.
Move adjustment nuts as necessary. Once shackles are fully adjusted lock both nuts tight against each other.

Step 5 Verify wire rope length by test running with 4" of over travel, and wire rope tension is balanced or safety will set. Be sure to remove blocking from below the sling before running the elevator with the pendant.

Step 6 Locate the dead side of the wire rope, seize, cut wire rope 1" above highest wire clamp at a perpendicular angle and tape wire ropes together (Reference Proper Handling of Wire Rope Page).

Step 7 Tie rope tags on suspension means fastenings per A.S.M.E. 17.1 Section 2.20.2.2. Verify tags will not interfere with elevator moving parts.

Step 8 Verify the slack cable switch will trip before sling safety engages. The slack cable switch arm assembly must rest below safety switch cam. Reset switch by by pulling out on the reset button and an audible click is heard.

Step 9 Verify the sling is square. Loosen top (4) set screws in sling tube. Rotate adjustment pin (top blocks only) providing a slight angle to allow the weight of the car, once added, to settle car floor and sling into a parallel position with the landing floors. Tighten set screws in guide block pins.

Verify Fasteners are Securely Fastened!
The steel tape is VERY SHARP, use care when handling.

**NOTE:** Steel tape can be installed on left or right side of rail system.

1. Place steel tape bracket 2” below top sheave and 1/2” inward from rail bracket. Fasten with appropriate hardware.

2. Fasten steel tape onto the steel tape bracket with the following provided hardware:
   - (1) - 1/4” - 20 x 3/4” Elevator Bolt
   - (1) - 1/4” Flat Washer
   - (1) - 1/4” Lock Washer
   - (1) - 1/4”-20 Nut

3. Fasten bottom steel tape bracket onto steel tape with the following provided hardware:
   - (1) - 1/4” - 20 x 3/4” Elevator Bolt
   - (1) - 1/4” Flat Washer
   - (1) - 1/4” Lock Washer
   - (1) - 1/4”-20 Nut

   Use the steel tape to locate position of bottom bracket. Ensure bracket and steel tape are aligned with above bracket and fasten with provided hardware.

   **Note:** When fastening the bottom tape bracket, angle the screws downward to help take up any slack in the steel tape.

**SECURELY FASTEN ALL HARDWARE**
ATTENTION
It may be necessary to make small adjustments to the magnet placements after elevator is installed.
Reference Programs & Settings page for Low Speed EZ Search Feature. (This feature is not included in series 015 or 018 units.)

Initial Settings
1. Level car at floor.
2. On the steel tape, mark the location of the top of the car/sling.
3. Reference chart and use appropriate distance to measure down from this mark to locate the top DZ magnet. Follow the rest of the diagram for placement of other magnets.
4. Repeat steps 1-3 for each floor.

DZ MAGNET (4" LONG)
- Initiates slow down sequence
- Initiates floor count

EZ MAGNET (2" LONG)
- Resets floor count to corresponding floor
- Powers corresponding EMI

DNL MAGNET (2" LONG)
- Resets floor count

Measurement From Top of Car
Series 008 & 210 = 16"
Series 015/115 & 018/118 = 8"

Measurement From Top of Sling
Series 021 & 022 = 6 3/4"

Up To Five Stops
EZ Magnets are 2" long
DZ Magnets are 4" long
South Magnets have a yellow stripe down the side
**6 STOP EMI & GAL MAGNET PLACEMENT**

**ACCURATE MAGNET PLACEMENT IS CRITICAL FOR PROPER FUNCTION.**

**ATTENTION**

It may be necessary to make small adjustments to the magnet placements after elevator is installed.

Reference Programs & Settings page for Low Speed EZ Search Feature.

**Initial Settings**

1. Level car at floor.
2. On the steel tape, mark the location of the top of the car/sling.
3. Reference chart and use appropriate distance to measure down from this mark to locate the top DZ magnet. Follow the rest of the diagram for placement of other magnets.
4. Repeat steps 1-3 for each floor.

**DZ MAGNET (4” LONG)**
- Initiates slow down sequence
- Initiates floor count

**EZ MAGNET (2” LONG)**
- Resets floor count to corresponding floor
- Powers corresponding EMI

**Measurement From Top of Car**
- Series 008 & 210 = 16”
- Series 115 & 118 = 8”

**Measurement From Top of Sling**
- Series 021 & 022 = 6 3/4”

**DNL SWITCH**

Must activate by car or sling member.

Mount so the switch activates 2” below first floor.

**EZ Magnets are 2” long**
**DZ Magnets are 4” long**

South Magnets have a yellow stripe down the side

**NOTE:**

It may be necessary to make small adjustments to the magnet placements after elevator is installed.

Reference Programs & Settings page for Low Speed EZ Search Feature.

**ATTENTION**

Must activate by car or sling member.

Mount so the switch activates 2” below first floor.

**CATALOG NUMBER:**

PTE10188-C

**Technical Support**

800.238.8739 - TechSupport@WaupacaElevator.com
Disconnect Power Before Wiring

**Step 1** Locate Controller box in control space as required by code.

**Step 2** Wire gauge requirements:
- 10 gauge wire to powerhead
- 18 gauge (minimum) wire for all other wiring

**Step 3** Refer to unit specific schematics in field drawings to complete wiring.
Wire per N.E.C. and local codes.
Note: Not all controller terminals or travel cable wire may be used. High voltage and low voltage wire must run separate and only cross over perpendicular to each other.

**Step 4** Locate and check for correct fuse size.
**WARNING**

**VERIFY TOP FINAL AND BOTTOM FINALS ARE INSTALLED AND WORKING BEFORE USING PENDANT! POWERHEAD MUST BE INSTALLED AND WIRED BEFORE USING PENDANT!**

**VERIFY THE HOISTWAY IS CLEAR OF ALL PERSON(S) WHENEVER USING PENDANT CONTROL!**

**THE PENDANT CONTROL IS A TEMPORARY MEANS OF OPERATING THE UNIT BY A TRAINED AUTHORIZED ELEVATOR CONTRACTOR. THE PENDANT CONTROL MUST ONLY BE USED FOR SERVICING, INSTALLATION OR MAINTENANCE WORK.**

**TO USE:**

**Step 1** Verify top and bottom finals & cams (if provided) are installed. Pit switch must be wired and functional.

**Step 2** For series 008, 021, 022, 115, 118, & 210 install power failure jumper to terminal block in the controller, if not already in place (terminal PF1 to terminal PF2).

**Step 3** Insert Pendant plug into receptacle.

**Step 4** Rotate pendant nut clockwise to fasten onto receptacle.

**Step 5** Turn PLC toggle switch to the “ON” position.

**Step 6** Turn “ON” power to the unit at the controller and disconnect.

**Step 7** Verify the following pendant buttons work correctly:

- **Emergency Stop Button** - stops the elevator car from traveling.
- **Up Arrow** - raises the elevator car.
- **Down Arrow** - lowers elevator car.

**NOTE:** If the up and down arrows move the elevator car in the reverse direction, two of the motor leads need to be swapped. Turn “OFF” power to the unit at the controller and the disconnect. Swap motor leads T1 and T2.

**TO DISCONNECT:**

**Step 1** Turn “OFF” all power to the unit at the controller and disconnect.

**Step 2** Turn PLC toggle switch to the “OFF” position.

**Step 3** Remove power failure jumper from terminal block in the controller (terminal PF1 to terminal PF2).

**Step 4** Rotate pendant nut counterclockwise and remove from receptacle.
NOTE: Some wires not shown for clarity. Install prior to car wall installation. Slack cable plugs contained in the COP are only used for Series 021, 022, & 114 units.

1. Remove (2) screws from COP cover plate and place off to the side for use later. Locate COP hole in the wall and measure the wall thickness.

2. Place the COP brackets in position on the COP. Offset the brackets from the front edge of the box by the distance measured in the previous step. Fasten (4) COP brackets to COP box with the following provided hardware:

3. Slide COP panel through the hole in the car wall. Be careful not to scratch any surfaces.

4. Place COP box into COP hole and fasten to wall using the following provided hardware:

   Verify screws do not pierce through the interior wall of the car.

5. For series 021, 022, and 114 route slack cable flex into the bottom of the COP box and fasten. Connect (2) slack cable plugs together inside the COP box.

6. Fasten COP panel onto box with previously removed screws.
ATTENTION
Verify clearance between car floor and all hoistway walls. Refer to field drawings for details. Individual car layouts may be different; however, always treat the rail wall as the B wall during assembly. Verify handrail type. Flat wood handrails must be installed before car assembly (reference INTERIOR CAR FIXTURES page).

NOTE
We recommend the following tools should be available:
Wallboard Roll Lifter - Rubber Mallet - Drill - Level - Screw Driver Set

Step 1
Insert provided dowels into pre-drilled holes along the top of the walls (wall B [or rail wall] will have fasteners already attached to the bottom). Insert dowels into pre-drilled holes along the top and bottom of post(s) and pocket(s) if provided, and opposing wall if opposite opening layout.

Step 2
Warping before installation may occur. To correct the warping, place provided shims between the outside wall and the uni-strut as necessary to correct the warp. Verify the uni-struts are securely fastened to the walls.

Step 3
The COP must be installed into the wall prior to car assembly. Using the provided conduit clips & hardware, secure the COP conduit to the upper outside car wall for easy access during cartop box installation.
Support walls during assembly. Tilting forwards or backwards on dowels could result in damage to the walls and/or fasteners and prevent proper assembly of car. Do not allow walls to slide off the floor this may cause harm to yourself and the walls.

Step 4
Walls on all cars except the Designer hang past the car floor. Before fastening floor to sling be sure to allow enough clearance between car floor and sling upright.

Step 5
Drill (4) holes minimum (If sling extensions are provided, drill 6 - 8 holes depending on extension configuration) and bolt floor to sling using provided hardware (Verify clearance between car floor and all hoistway walls. Refer to field drawings for details).

Step 6
Insert wall B [or rail wall] with fasteners onto floor A pins and slide into place.
Note: Do not allow the wall to tilt forward or backward as this may cause damage.

Step 7
Carefully place the gate pocket C with dowels into floor at the same time connecting the fasteners between B & C.
Support walls during assembly. Tilting forwards or backwards on dowels could result in damage to the walls and/or fasteners and prevent proper assembly of car. Do not allow walls to slide off the floor this may cause harm to yourself and the walls.

Step 8 Carefully lift at the connecting corner and connect the pins in wall D into the fasteners in wall B.

Step 9 Drive dowels from floor A into wall D with a rubber mallet to prevent walls from moving or sliding.

Step 10 Set wall E into place. Carefully lift wall E at the connecting corner and connect the pins in wall E into the fasteners in wall D.

Step 11 Drive dowels from floor A into wall E with a rubber mallet to prevent walls from moving or sliding.

Verify flush alignment across top of walls and gate pocket. Use a rubber mallet to bring the walls into alignment. Do not rely on ceiling screws to close gaps. Check to make certain all fasteners are seated completely and all walls are level.

Step 12 Set ceiling F onto walls B, C, D and E with dowels.

Step 13 Use rubber mallet to drive dowels through the ceiling and into walls.

Step 14 Fasten ceiling first then floor panel to walls with provided hardware in pre-drilled locations.

VERIFY ALL FASTENERS ARE SECURE!

Note: Use a small amount of wax or liquid soap for lubricating hardware.
Re-attach stabilizer bracket to uni-strut with previously removed hardware and securely fasten.

Use Stabilizer adjustment bolts and adjust up or down to allow stabilizer bracket to rest on car and securely fasten.

Drill appropriate sized pilot holes for the stabilizer brackets. **Do not pierce through the interior car ceiling.** Securely fasten stabilizer brackets with the following hardware:

- (8) - 5/16” x 1” Lag Bolt
- (8) - 5/16” Flat Washer

Slide Tape Reader onto steel tape.

Fasten tape reader to tape reader bracket with provided hardware. Do not over tighten, tape reader should pivot on bracket.

Verify the tape reader is centered with the steel tape, and fasten to car with (4) - #12 X 3/4” phillips head pan screws. **Do not pierce through the interior car ceiling.**
**Final Limit Installation**

**Series:** 008, 210, 118, 115, 022, 021

**DO NOT RUN ELEVATOR WITHOUT THE FINAL LIMIT SWITCHED INSTALLED!**

1. Remove screws and open covers.
2. Determine normally closed contacts with multi-meter.
3. **SERIES 008, 108:** Locate 1st top final switch so actuator arm is over the highest point of the sling, and 2" from the top of the car at the top floor.
   
   **SERIES 210:** Locate 1st top final switch so actuator arm is 2" above car.

4. Locate 2nd top final switch so actuator arm is 2" from the top of the car at the top floor.
5. Reverse the final switch actuator for the bottom final switch (top to bottom).
6. Locate bottom final switch so actuator arm is 2" from the bottom of the car floor at the lowest level.
7. Install final limit switches using appropriate hardware.
8. Route wires through connectors and fasten to normally closed terminals.
9. Replace covers and refasten screws.
Assemble all the LED light Covers with the provided hardware.

Insert all the LED lights by pulling the springs back and feeding the plug and light through the holes in the ceiling from the inside of the elevator car.

Place and temporarily secure the power supply on top of the elevator car in desired location.

Note: While securing anything to the elevator car, verify nothing punctures through to the interior of the elevator car.

Plug the LED extension cords into the LED lights after the desired route has been laid out. Cut the connector off the unused end of the LED extension cord. Next feed it through the conduit until it reaches the power supply. If the LED extension cord needs to be shortened remove it from the conduit and cut to the desired length. Finally feed the wire back through the conduit.

Note: Before cutting, verify you’re cutting the right end of the LED extension cords, have enough extension cord to reach the LED light controller box and enough to for future maintenance. (Like changing out a light) You may need to supply your own flexible conduit if more than 18” is required.

Remove a knock out and connect the power supply to the car top with the provided conduit wire harness. Wire per wiring schematic.

Knock out the holes required on the power supply for the LED lights and securely fasten the loose whips of the LED light cover assemblies.
LED Light Wiring

ATTENTION: REMOVE ALL JUMPERS AS REQUIRED OUT OF THE LED LIGHT CONTROLLER BOX

WITH-OUT BATTERY BACK-UP WIRING
(STANDARD)

1. Strip the LED extension cord back to the desired length. Wire per LED light schematic and national and local codes terminating one LED light per terminal.

2. Verify that all LED lights work and adjust the dimmer to desired brightness.

3. Secure the LED Light covers and power supply to the ceiling of the elevator car with provided hardware.

NOTE:
THERE ARE 9 SETS OF TERMINAL BLOCKS, EACH WITH 3 CONDUCTORS PER LIGHT. FOR SIMPLICITY, ONLY 1 SET IS SHOWN IN THIS DIAGRAM. ALWAYS CONNECT ALL 3 WIRES (RED, BLACK, YELLOW), EVEN IF DIMMING IS NOT REQUIRED.

TO TURN LIGHTS ON AND OFF, SIMPLY ENERGIZE OR DE-ENERGIZE THE 120/240V AC INPUT TO THE EL2 POWER BOX.

WITH BATTERY BACK-UP WIRING
(OPTIONAL)

1. Strip the LED extension cord back to the desired length. Wire per LED light schematic and national and local codes terminating one LED light per terminal.

2. Wire 2 LED lights to terminals 8 and 9 for emergency lighting. Wire per LED light schematic and national/local codes.

3. Verify that all LED lights work and adjust the dimmer to desired brightness.

4. Secure the LED Light covers and power supply to the ceiling of the elevator car with provided hardware.

5. When the installation is complete press the test switch to test light operation. Allow up to 10 hours for a battery to fully charge before testing.

WARNING: DO NOT MIX AC AND DC WIRING. MAINTAIN BARRIER AS SHOWN BY THE DOTTED LINE. INPUT AND OUTPUT CONDUCTORS ARE TO BE INSULATED FOR A MINIMUM OF 300V FOR ALL CIRCUIT CONNECTIONS.
**HANDRAIL INSTALLATION**

**METAL ROUND or FLAT HANDRAIL with SPACER STANDOFFS**

1. Locate standoff spacer on appropriate wall with the pre-drilled holes and fasten snugly in place with set screws facing downward. Then loosen the set screws.

2. Align the edges of the standoff so its level. Verify the seams are free of gaps. Securely fasten in place.

3. Align handrail with aluminum studs and press into position on wall. Verify a tight fit between handrail and handrail spacer.

4. Securely fasten (2) 1/4”-20 x 1/4” set screws in place.

**FLAT WOOD HANDRAIL**

**NOTE:** NEEDS TO BE FASTENED TO BACK OF WALL BEFORE CAR ASSEMBLY.

1. Locate wall with pre-drilled holes for handrail.

2. Align handrail with fastening holes and fasten handrail to wall with (4) #10 x 3” wood screws.

**WOODEN DOWEL HANDRAIL with RING STANDOFFS**

1. Locate wall with predrilled holes for handrail.

2. Align handrail with fastening holes with set screws facing downward.

3. Fasten handrail to wall with (4) 1” wood screws.

4. Lock handrail into position in standoff by fastening (2) 8-32 x 3/16” set screws.

---

Verify that both curved opening on the standoff’s are lined up with the round handrail prior to installation.

LOCATE STANDOFF SPACER ON APPROPRIATE WALL WITH THE PRE-DRILLED HOLES AND FASTEN SNUGGLY IN PLACE WITH SET SCREWS FACING DOWNWARD. THEN LOOSEN THE SET SCREWS.
Locate the telephone jack inside the car at a convenient location or as directed by local codes.

Installing the Telephone Jack

Step 1. Drill 1” opening in car wall.

Step 2. Mark and drill (4) 1/16” pilot holes.

Step 3. Run wire from the wall mount telephone jack (red & green wires) to the phone (PH) terminals in the car top box and connect both ends of wires to correct terminals (reference ‘Travel Cable to Controller Wiring’ installation page). Do not route over high voltage wires.

Step 4. The terminals located in the controller should then be connected to the central telephone exchange connection (by others) in the machine room.

Step 5. Secure plate cover with provided screws.

Step 6. Insert appropriate shoulder screws.

Install the phone in the elevator before it is released to the customer!
CAUTION: Over tightening top gate track screws may cause track to bend inward on the lead post of the gate and cause added resistance, or fasteners may strip out in the ceiling. This may cause problems when opening or closing the gate.

1. Remove gate track from the ceiling panel. If necessary, place a mark on the sides of the track for a position locator to aid in alignment upon installation. **Be careful not to mark in a noticeable location.** Keep in mind the screw holes in the ceiling may be used as locators. Since the track will be reinstalled using the same holes and screws maintain gate track orientation. Place screws off to the side for use later.

2. Collapse gate and place the bottom guides into the floor track.

3. Stand gate upright while maintaining the gate stack in the correct orientation (locate handle on the strike side), and slide the track onto the wheels. Lineup the wheels properly in the track grooves. **Be careful not to slide the wheels in sideways.** If necessary, reference field drawings for correct gate orientation.

4. Slide top of gate with gate track in place on the car ceiling in original factory location. Align the track in the same place with the previously noted locators such as marks and/or hole locations for proper alignment.

5. Stack the gate to one end of the track (either side of the opening), and fasten the other end of the track to the ceiling of the car using previously removed screws. Seat the screws firmly against the track resulting in full contact between the track and the ceiling. **Be careful not to bend the track.** Fasten at all visible hole locations in track. Slide the gate to the attached end of the track and finish fastening the track to the ceiling.

6. Slide the gate back and forth along the track observing smooth operation. If gate does not slide smoothly check for screw heads not fully seated, wheel not properly aligned, or dirt/debris in the track.
7 Stand inside the car, and push the gate to the stack side. Let the gate form its own plumb, and carefully mark a line with a nonpermanent mark on the wall/pocket/post at the edge of the mounting panel near the top and bottom. It is important to make this mark while the gate is in the stacked position.

8 Extend the gate to have access to the mounting panel. Hold the mounting panel edge at the nonpermanent marks. **Note, the position of the mounting panel may move away from the marks as the gate is extended open. The panel position must be maintained at the marked edge.** Fasten mounting panel in place with (2) - #6 x 1-1/2” flat head screws 8” down from the ceiling and 8” up from the floor.

9 Stack the gate against the mounting panel to form a neat, tight stack. Do not force the stack into position. If gate stack binds, the mounting panel moved from the marked edge, and the previous step needs to be repeated.

10 Once the gate stacks properly, re-extend the gate and fasten the mounting panel with (2) - #6 x 1-1/2” flat head screws between the first (2) screws evenly splitting the distance.

11 Dry fit the gate strike jamb against the opposite wall of the stack. The strike jamb needs to be centered with the top gate track and the floor track groove. Slide the gate lead post over to the strike to verify proper placement. Fasten the gate strike jamb with (4) - #6 x 1-1/2” flat head screws.

12 Center the strike plate on the magnet with the adhesive side out. Remove the protective tape from the adhesive backing, and push the door firmly shut.

13 Slide the gate open while pressing on the strike plate with a small flathead screw driver to maintain placement. Drill through the center of each strike plate screw hole and gate strike jamb using a 3/32” drill bit. Fasten the strike plate in place with (2) - #6 x 1-1/2” flat head screws.

14 If provided, install gate operator at this time (reference gate operator installation manual).
Frameless Car Gate Switch Installation

NOTE:
If Automatic Gate Operator is not provided, continue installation with the instructions provide below.
If Automatic Gate Operator is provided, follow the instructions provided with the Automatic Gate Opener.

1. Place the gate switch actuator arm onto the lead post of gate, measuring 1 ¼” - 1 ½” from the bottom of the actuator block to the top of the trim of the elevator car. Verify the gate arm will be level on the gate and mark the holes that will need to be drilled.

2. With a 9/64th drill bit drill the 2 marked holes and fasten the gate switch actuator arm onto the gate lead post with the provided hardware.

3. Verify the gate switch is the correct hand for the gate.

4. Remove the cover of the gate switch and place the cover and screws aside. Remove the (2) knock-outs on the back of the gate switch. Fasten the gate switch to the gate switch bracket with provided hardware. Make sure the gate switch is level on the gate switch bracket.

5. With the gate closed, fasten the assembled gate switch and gate switch bracket to the top of the elevator car with provided hardware. Verify the gate actuator arm will activate the gate switch.

NOTE: If the actuator arm does not activate the gate switch, adjust the gate switch height by loosening the hardware and moving the gate switch up or down to the desired position and tightening the hardware.

6. Verify the gate switch is fastened level on the gate switch bracket. Open and close the gate to verify the gate switch actuates and makes proper contact with the flipper.

7. Replace the gate switch cover.

BEFORE INSTALLATION REFERENCE ASME A17.1/CSA B44 CODE
VERIFY TRAVEL CABLE WILL NOT CATCH, FRAY, OR SLICE ON OTHER COMPONENTS!

1. Plug cable into the car top box and anchor to the top of car with strain relief.

   NOTE: If connector has separated, plug in using diagonal reference line as a guide.

2. In the hoistway, anchor travel cable with strain relief 2 feet above the midpoint of travel with car at the lowest floor. **Verify** the travel cable loop hangs no lower than the car floor.

3. Route travel cable to the controller. All wiring and strain relief must meet N.E.C. and local code requirements.
Align toe guard with the bottom of the floor sill and one edge of either outside wall with the bend facing into the hoistway.

2 Mark all hole locations.

3 Drill all hole locations previously marked in step 2 with a 3/32" drill bit x 1-1/4" deep pilot hole.

4 Place toe guard into position established in step 1. **Verify both toe guard edges line up with the outside wall edges, the top of the toe guard lines up with the bottom of the floor sill, and the hole patterns align with the pilot holes drilled.**

5 Fasten toe guard onto cab floor with a # 6 x 1-1/4" coarse screw per each hole. 
*Note: Quantity of holes depend on toe guard length.*
### Travel Cable to Controller Wiring

#### 2-5 STOP

<table>
<thead>
<tr>
<th>Travel Cable Wire Number</th>
<th>Controller Terminal</th>
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<tbody>
<tr>
<td>1</td>
<td>1F</td>
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<td>4</td>
<td>4F</td>
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<tr>
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<tr>
<td>6</td>
<td>6F</td>
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<tr>
<td>7</td>
<td>FC</td>
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<tr>
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<td>1A</td>
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<tr>
<td>9</td>
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<tr>
<td>12</td>
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<td>AG3</td>
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<td>27</td>
<td>DZ</td>
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<td>28</td>
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<tr>
<td>29</td>
<td>+24</td>
</tr>
<tr>
<td>30</td>
<td>-24</td>
</tr>
<tr>
<td>31</td>
<td>AG1</td>
</tr>
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</table>

**NOTE:**
Not all terminals and travel cable wires will be used in every application.

#### 6 STOP

<table>
<thead>
<tr>
<th>Travel Cable Wire Number</th>
<th>Controller Terminal</th>
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<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
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<tr>
<td>3</td>
<td>3F</td>
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<td>5F</td>
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<tr>
<td>6</td>
<td>6F</td>
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<tr>
<td>7</td>
<td>FC</td>
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<tr>
<td>8</td>
<td>1A</td>
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<td>9</td>
<td>2A</td>
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<td>10</td>
<td>3A</td>
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<td>AC</td>
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<td>15</td>
<td>ESTP</td>
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<tr>
<td>16</td>
<td>SC</td>
</tr>
<tr>
<td>17</td>
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</tr>
<tr>
<td>18</td>
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<td>EZ2</td>
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<td>24</td>
<td>EZ1</td>
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<tr>
<td>25</td>
<td>AG3</td>
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<tr>
<td>26</td>
<td>AG2</td>
</tr>
<tr>
<td>27</td>
<td>DZ</td>
</tr>
<tr>
<td>28</td>
<td>NOT USED</td>
</tr>
<tr>
<td>29</td>
<td>+24</td>
</tr>
<tr>
<td>30</td>
<td>-24</td>
</tr>
<tr>
<td>31</td>
<td>AG1</td>
</tr>
</tbody>
</table>

**NOTES:**
- BLACK 14 GAUGE: 110C
- GREEN 14 GAUGE: GRD
- SHIELDED RED: PHONE
- SHIELDED WHITE: PHONE

**Wiring Colors:**
- PURPLE 14 GAUGE: LITE
- WHITE 14 GAUGE: NEUT
- BLACK 14 GAUGE: 110C
- GREEN 14 GAUGE: GRD
- SHIELDED RED: PHONE
- SHIELDED WHITE: PHONE
**VERIFY POWER IS “OFF” AT THE CONTROLLER AND DISCONNECT!**

**Step 1** Place car top assembly on the top of the car and center (reference Modular Wiring Car Top).

**Step 2** Remove cover with alarm bell attached by removing (2) sheet metal screws and placing to the side for use later.
   *If COP has a built-in e-light, skip to step 11*

**Step 3** Remove black and white emergency light wires from the terminal block. Note the location of the wires, and slide through the bushing on the box.

**Step 4** Remove light cover by removing (2) pan head screws, and place off to the side for use later.

**Step 5** Place light against the best interior car wall and ceiling to determine location.

**Step 6** Remove light and mark wire location on wall or ceiling depending on chosen mounting position, and drill 1/4” hole through on mark. Verify the wire length is long enough to reach the alarm box.

**Step 7** Feed emergency light wires through 1/4” hole to alarm box and through the bushing into the alarm box.

**Step 8** Fasten light fixture into place with appropriate hardware.

**Step 9** Fasten cover to light fixture with (2) pan head screws previously removed.

**Step 10** Fasten black wire to terminal 1 and white wire to terminal 2.

**Step 11** Install (2) provided fuses into circuit board.

   **Note:** The battery will drain when power is not supplied to the unit.

**Step 12** Fasten alarm cover onto box with (2) previously removed sheet metal screws.

**Step 13** Finish car top wiring and elevator installation. When the installation is complete press the test switch to test light operation. Allow up to 10 hours for battery to charge before testing.
1. Install tape reader and gate operator/gate switch whips to car top box with connectors, and plug into appropriate receptacles (reference Tape Reader Driver Board and Car Top Modular Wiring). If provided, plug autogate plugs into plugs based on floor usage defined below:
   - AG1: Primary Floor
   - AG2: Secondary Floor
   - AG3: Tertiary Floor

2. Set lights over holes --do not anchor them at this time.

3. Locate car top box as dictated by the lengths of the tape reader, lights, and gate switch whips.

4. Install whips from lights, and mate plugs with those in car top box.

5. Anchor car top box and lights, with provided hardware.

6. Plug final limit into car top box. For series 115, 116, and 118 units final limits need to plug into male pig tail wired to the emergency stop on the car top circuit board.

7. Install travel cable, car operating panel and slack cable switch whips to car top box with connectors.

8. Install remaining plugs to circuit board per Car Top Modular Wiring.

9. If provided, install light curtain (reference Light Curtain Installation).

10. If provided, COP with Position Indicator (PI) will have one or two additional plugs extending from the COP whip. The amount of plugs extending from the whip depends on the quantity of floors. One to three floors will contain one plug, and four to six floors will have two plugs. Plug into the mating plugs extending from the tape reader interface.

**WARNING:** Before running elevator, verify emergency stop switch functions correctly. Use a tool to reach and press down on the switch from outside the hoistway.

**EMERGENCY STOP SWITCH OPERATION**

**STOP:** Press knob to stop the elevator.

**RELEASE:** Twist knob counterclockwise and the button will click with an audible sound and release.
Note: Depending on application not all plugs may be used.
TYPICAL

TO CAR TOP TERMINALS

TO TAPE READER

Plug

Receptical

Circuit Board

White Wire Fits to 1st Pin

TYPICAL TAPE READER DRIVER BOARD CONNECTIONS

SERIES: 008 - 114 - 115 - 116 - 118 - 021 - 022 - 210 - 311 - 511
Disconnect power to the elevator before wiring these components. All wiring must meet N.E.C. and local codes. Note, high voltage and low voltage must run separate and only cross over perpendicular to each other.

Use 18 gauge wire for field wiring.

Be warned of the potential for personal injury if you are not careful.

Do not route wires across landing face walls.

This illustration is an example of cable layout with the least voltage drop throughout the circuit.

Refer to proper pages for individual component installation.

The total number of conductors needed is:

\[10 + 2 \times \text{number of stops}\]

\[(2 \times ____ ) + 10 = ____ \]

**SERIES 015, 115, & 021 ONLY!**

**Step 1** Test operation of car top final limit switch.

**Step 2** Remove temporary top limit.

Series 015 Shown
Step 1  Verify power at the controller and disconnect is “OFF”.

Step 2  Using appropriate hardware mount pit switch box in pit within reach of door opening and clear of sling and car.

Step 3  Wire switch to control box per schematic and mount switch in pit switch box with previously removed hardware. Pit switch must be wired to meet N.E.C. and local code.

Step 4  Install cover with previously removed hardware. Verify the cover is orientated to allow the switch to be locked in the “OFF” position with a lockout/tagout lock and the switch eliminates power to the unit in the “OFF” position.
1 Install hall station boxes. Refer to field drawings for location.

2 Verify all power at the controller and disconnect is “OFF”. Wire hall station per schematic provided with unit. Wiring must meet N.E.C. and local codes.

3 Fasten hall station plate onto box with provided hardware. **Do not** allow any of the wires to become kinked or pinched by the cover.
PROGRAM FEATURES

Field Programmable Floor Homing:
This program allows the elevator to home to a floor of choice every 30 minutes with no active calls.

Enabling & Disabling Instructions:
- Call unit to first stop (tape reader must be on EZ1 magnet).
- Open gate and pull Emergency-Stop button (Gate/ESTP input must be disengaged).
- While in the car, push and hold COP buttons 1 & 2 (simultaneously) until both illuminate, then release.
- Immediately push the desired homing floor button while 1 & 2 are illuminated (they will time out in 3 seconds); Selection will flash three times to acknowledge program acceptance.
- To cancel the homing feature, push and hold buttons 1 & 2 (simultaneously) until they both flash to acknowledge homing feature cancellation.

VR 1 (Car Light Timeout)
- Maximum = 30 minutes
- Minimum = 5 minutes

Field Programmed Timer for EMI Timeout Applications

Adjustment Instructions:
- VR 2 on the PLC adjusts the timer for the EMIs, turn the pot (rheostat) to fit the application:
  - Fully counterclockwise is 10 seconds.

Gate Cycle Safety Feature

Proper Use
- The elevator will stop running after four (4) calls if the gate switch is bypassed or used improperly.
- To reset elevator program, the gate switch contact must be broken and re-contacted to resume proper function.

Low Speed EZ Search Feature
- If the elevator car stops short of the floor (or the tape reader passes the DZ magnet and stops short of the EZ magnet) the PLC will initiate the Low Speed EZ Search Feature. The elevator car will begin moving again in the same direction of travel approximately 1/3 of the elevators full speed for 120 seconds, or until the tape reader sees the next magnet.
**Auto Gate Program**

Move Elevator to Desired Floor.

*NOTE:* Elevator must be on EZ magnet/input.

Flip SW1 to "CLOSED" POSITION.
*(located inside controller)*

*NOTE:* Unit will not accept floor calls with SW1 in closed position.

Press the Corresponding Call Floor Button.

<table>
<thead>
<tr>
<th>AG1</th>
<th>AG2</th>
<th>AG3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESS 0x's</td>
<td>PRESS 1x's</td>
<td>PRESS 2x's</td>
</tr>
<tr>
<td>PRESS 3x's</td>
<td>PRESS 4x's</td>
<td>PRESS 5x's</td>
</tr>
<tr>
<td>PRESS 6x's</td>
<td>PRESS 7x's</td>
<td>PRESS 8x's</td>
</tr>
</tbody>
</table>

Gray square indicates AG programmed to open.

All Desired Gates Open Correctly.

Wrong Gates Opens.

Flip SW1 to "OPEN" POSITION TO END this floor's programming.

*NOTE:* Unit will not accept floor calls with SW1 in closed position.

Press the Corresponding Call Floor Button.

*(with all doors & gates closed)*

Reference chart for number of times to push the button.

Move Elevator to Any Other Desired Floor and Repeat.
Monitor (4-digit LED)
Shows the frequency, parameter number, etc.

Setting dial
(Setting dial: Mitsubishi inverter dial)
Used to change the frequency setting and parameter values.
Press to display the following:
• Displays the set frequency in the monitor mode
• Present set value is displayed during calibration
• Displays the order in the faults history mode

Unit indication
Hz: Lit to indicate frequency.
(Flickers when the set frequency monitor is displayed.)
A: Lit to indicate current.
(Both "Hz" and "A" turn off when other than the above is displayed.)

Operating status indication
Lit or flicker during inverter operation.
* On: Indicates that forward rotation operation is being performed.
Slow flickering (1.4s cycle):
Reverse rotation operation
Fast flickering (0.2s cycle):
When RUN was pressed or the start command was given, but the operation can not be made.
• When the frequency command is less than the starting frequency.
• When the MRS signal is input.

Determination of each setting
If pressed during operation, monitor changes as below;
Running frequency
Output current
Output voltage
**Note:** Turn on PLC with toggle switch 1 to activate automatic mode. **Highlighted inputs must be “ON” for the elevator to run in automatic mode.**

**Main PLC Inputs:**
- X0 = DZ Door Zone Sensor
- X1 = RUN Run Contact
- X2 = MCR Master Control Relay
- X3 = SC Slack Cable
- X4 = DC Door Closed Switch
- X5 = DL Door Locked Switch
- X6 = GATE Gate Switch (Cotop ESTOP Cartop ESTOP)
- X7 = PF Power Fail Relay
- X10 = CRI/PS/TF CR/PS Control Relay (Pit Switch (TF) Top Final (TF) Bottom Final)
- X11 = DNL Down Normal Limit
- X12 = E21 EMI Zone Sensor 1
- X13 = TF 1st Floor Push Button
- X14 = EZ2 EMI Zone Sensor 2
- X15 = 2F 2nd Floor Push Button

**Main PLC Outputs:**
- Y0 = LR Light Relay
- Y1 = MCR Master Control Relay Drive Safety
- Y2 = BR/RUN (BR) Brake Relay (RUN) Run Contact
- Y3 = CRB CRI Control Relay (DRSD) Drive Slow Down
- Y4 = UP UP
- Y5 = DN DOWN
- Y6 = EM1 EMI 1st Floor Indicator Light
- Y7 = IA 1st Floor Indicator Light
- Y10 = EM2 EMI 2nd Floor Indicator Light
- Y11 = 2A 2nd Floor Indicator Light

**Expansion Module Inputs:**
- X20 = SW1 AutoGate 1
- X21 = ACC Access Door Switch
- Y20 = AG1 AutoGate 1
- Y21 = AG2 AutoGate 2

**Expansion Module Outputs:**
- Y10 = EM2 EMI 2nd Floor Indicator Light
- Y11 = 2A 2nd Floor Indicator Light
**Note:** Turn on PLC with toggle switch 1 to activate automatic mode. Highlighted inputs must be “ON” for the elevator to run in automatic mode.
<table>
<thead>
<tr>
<th>Error message</th>
<th>Operation Panel Indication</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>E---</td>
<td>E---</td>
<td>Faults history</td>
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<tr>
<td>HOLD</td>
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<td>Operation panel lock</td>
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<td>LOCd</td>
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<td>Password locked</td>
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<td>Er 1 to Er 4</td>
<td>Er1 to 4</td>
<td>Parameter write error</td>
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<td>Err.</td>
<td>Err.</td>
<td>Inverter reset</td>
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<tr>
<td>OL</td>
<td>OL</td>
<td>Stall prevention (overcurrent)</td>
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<tr>
<td>oL</td>
<td>oL</td>
<td>Stall prevention (over voltage)</td>
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<td>RB</td>
<td>RB</td>
<td>Regenerative brake prealarm</td>
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<td>TH</td>
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<td>Electric thermal relay function prealarm</td>
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<td>E.OC1</td>
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<td>Overcurrent trip during acceleration</td>
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<td>Overcurrent trip during constant speed</td>
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<td>Overcurrent trip during deceleration or stop</td>
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<tr>
<td>E.OV1</td>
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<td>Regenerative overvoltage trip during acceleration</td>
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<tr>
<td>E.OV2</td>
<td>E.OV2</td>
<td>Regenerative overvoltage trip during constant speed</td>
</tr>
<tr>
<td>E.OV3</td>
<td>E.OV3</td>
<td>Regenerative overvoltage trip during deceleration or stop</td>
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<tr>
<td>E.THT</td>
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<td>Inverter overload trip (electronic thermal relay function)</td>
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<td>Motor overload trip (electronic thermal relay function)</td>
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<td>External thermal relay operation</td>
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<td>E.PUE</td>
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<td>Retry count excess</td>
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<td>E.S / E.CPU</td>
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<td>OUTPUT current detection value exceeded</td>
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<tr>
<td>E.IOH</td>
<td>E.IOH</td>
<td>Inrush current limit circuit fault</td>
</tr>
<tr>
<td>E.A1E</td>
<td>E.A1E</td>
<td>Analog input fault</td>
</tr>
<tr>
<td>E.SAF</td>
<td>E.SAF</td>
<td>Safety circuit fault</td>
</tr>
</tbody>
</table>
ATTENTION: TURN “OFF” ALL POWER TO THE DISCONNECT, CONTROLLER, & UPS.

BATTERY DESCENT WILL NOT WORK WITH GENERATORS. BATTERY DESCENT REQUIRES UTILITY BASED REGULATED POWER.

1. Mount battery descent box per N.E.C. standards. For units with a large UPS, locate appropriately near battery descent box. Do not locate in damp areas. Place on 1” x 8” x 24” rubber floor mat. Verify electrical plugs from battery descent box are able to plug into each other.

2. Wire Battery descent per schematic. All wiring must meet N.E.C. and local codes.

3. Reference provided UPS manuals for making proper plug connections, turning “ON”, and operating UPS.

4. Using provided screws securely fasten cover in place.

1,000 LBS BATTERY DESCENT PACKAGE SHOWN
## WINDING DRUM MODELS

### IN THE CAB
- [ ] Pushbuttons
- [ ] Acknowledge lights
- [ ] Emergency stop
- [ ] Telephone
- [ ] Alarm button
- [ ] Emergency light
- [ ] Gate(s)
- [ ] Gate switch(es)
- [ ] Gate Operator

### IN THE MACHINE ROOM
- [ ] Fuses
- [ ] Remove all temporary jumpers
- [ ] Check all fasteners
- [ ] Leave area & equipment clean
- [ ] Slack Cable Switch
- [ ] Re-verify Wire Rope Tension
- [ ] Interlock Key stored correctly
- [ ] Controller Door Storage Pouch:
  - [ ] Wiring documents
  - [ ] Microprocessor I/O chart
  - [ ] Maintenance chart

### IN THE HALLWAY
- [ ] Hall stations
- [ ] Interlocks
- [ ] ‘In Use’ lights
- [ ] ‘Car Here’ lights
- [ ] Proper leveling
- [ ] Proper clearance (between car & threshold)

### IN THE HOISTWAY
- [ ] Clearance for travel cable and all wiring
- [ ] Lubrication of rails
- [ ] Final limit switches
- [ ] DNL (6 STOP ONLY)
- [ ] Warning labels
- [ ] Limit Switches (010 SERIES ONLY)

### LABEL OR FILL IN
- [ ] Home Owners Guide - Serial # & Dealer Info.

### EDUCATE HOME OWNER
- [ ] Present and explain ‘Owner’s Guide’
- [ ] Demonstrate normal operating procedures
- [ ] Demonstrate emergency procedures
- [ ] Explain the operation of safety systems
- [ ] Explain the need for routine maintenance
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