Vehicle Restraint
Owner's/User's Manual

Manual No. IMAR-012-000 - Rev._A_March 2025

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a. PRECAUTIONS

Recognize Precautionary Information

Safety-Alert Symbol

The Safety- Alert Symbol is a graphic representation intended to convey a safety message without the use of words. When you see this symbol, be alert to the possibility of death or serious injury. Follow the instructions in the safety message panel.

⚠ DANGER

The use of the word DANGER signifies the presence of an extreme hazard or unsafe practice which will most likely result in death or serious injury.

⚠ WARNING

The use of the word WARNING signifies the presence of a serious hazard or unsafe practice which could result in death or serious injury.

⚠ CAUTION

The use of the word CAUTION signifies possible hazard or unsafe practice which could result in minor or moderate injury.

NOTICE

The use of the word NOTICE indicates information considered important, but not hazard-related, to prevent machine or property damage.

SAFETY INSTRUCTIONS

Indicates a type of safety sign, or separate panel on a safety sign, where safety-related instructions or procedures are described.

General Operational Precautions

Read and understand the Owner's/User's Manual and become thoroughly familiar with the equipment and its controls before operating the transport vehicle restraint.

Never operate a transport vehicle restraint while a safety device or guard is removed or disconnected.

Never remove DANGER, WARNING, or CAUTION signs, Placards, or Decals on the equipment unless replacing them.

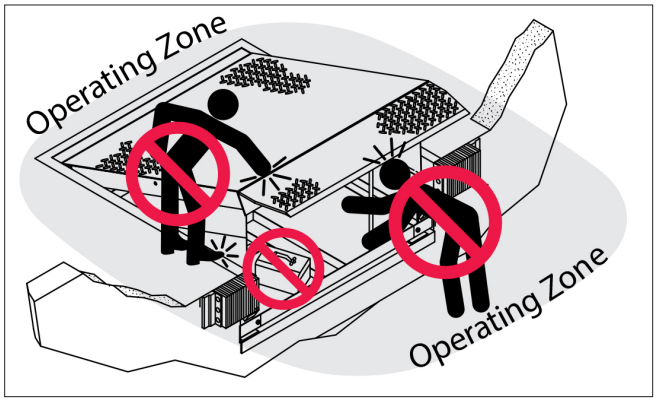


Figure 1

Do not start the equipment until all unauthorized personnel in the area have been warned and have moved outside the operating zone (see Figure 1).

Remove any tools or foreign objects from the operating zone before starting.

Keep the operating zone free of obstacles that could cause a person to trip or fall.

⚠ **WARNING:** This product can expose you to chemicals including lead, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

a. PRECAUTIONS

Operational Precautions

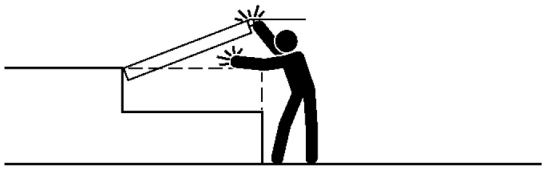
Learn the safe way to operate this equipment. Read and understand the manufacturer's instructions. If you have any questions, ask your supervisor.

If the NOVA OmniLock™ vehicle restraint does not operate properly using the procedures in this manual, enter HORN OVER-RIDE mode or contact your local representative for service.

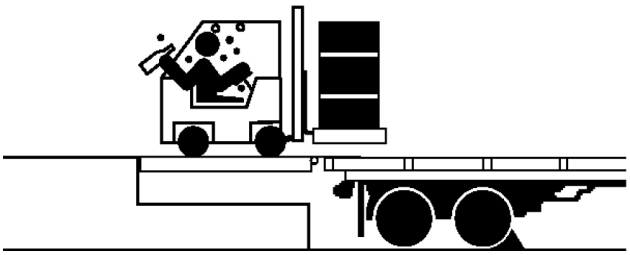
⚠DANGER

Stay clear of dock leveling device and restraint when transport vehicle is entering or leaving area.

Do not move or use the dock leveling device and restraint if anyone is under in front or near it.

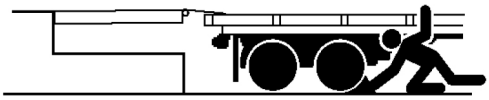


Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.



Do not operate any equipment while under the influence of alcohol or drugs.

⚠WARNING



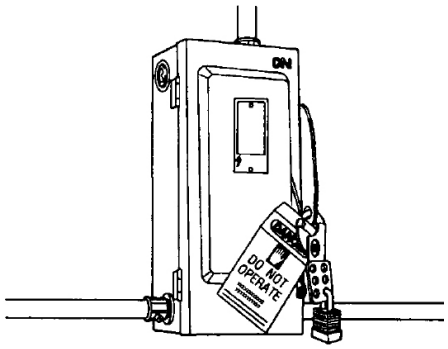
Chock/restrain all transport vehicles. Never remove the wheel chocks until loading or unloading is finished and transport vehicles driver has been given permission to drive away.

Do not use a broken or damaged restraint device. Make sure proper service and maintenance procedures have been performed before using.

a. PRECAUTIONS - CONTROL BOX

Maintenance Precautions

⚠ DANGER



Electrical power must be OFF when servicing the equipment. For maximum protection, use an OSHA* approved locking device to lock out all power sources. Only the person servicing the equipment should have the key to unlock the device.

COMBINATION CONTROL BOX SAFETY DECALS

Every 90 days (quarterly) inspect all safety labels, placards, and tags to ensure they are present, easily seen, and legible. Refer to the Parts section of this publication to identify the location of the safety items listed below. Call NOVA Technical Service for replacements.

Page #	Item #	Description
105	41	No Step Decal
108	4	Caution Sign
108	3	Enter on Green Sign
109	5	Decal, Arc Flash
109	6	Decal, Hook Position
108	5	Placard, Restraint Operation

Read and understand the PRECAUTIONS section of the OEM Owner's/User's Manual for each piece of loading dock equipment interfaced with the Combination Control Box.

⚠ DANGER

Arc Flash and Shock Hazard
PPE [Personal Protection Equipment] Required

De-energize equipment before working on or inside.
Do not open cover without appropriate PPE.
Refer to NFPA 70E for PPE requirements.
This panel may contain more than one power source.

MF2-202-000

Hazardous Voltage Will Result in Death or Serious Injury

⚠ WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

ALWAYS disconnect electrical power source and ground wire before welding on restraint.

DO NOT ground welding equipment to any electrical components of the restraint. Always ground to the restraint frame.

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded.

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

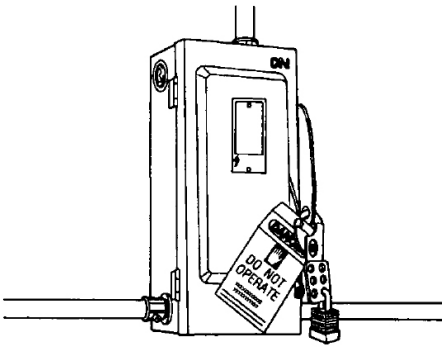
Always keep a fire extinguisher of the proper type nearby when grinding or welding.

* Refer to OSHA Regulation 1910.146 Confine Spaces, 1910.147 Lockout/Tagout.

a. PRECAUTIONS - VEHICLE RESTRAINT

Maintenance Precautions

⚠ DANGER



Electrical power must be OFF when servicing the equipment. For maximum protection, use an OSHA* approved locking device to lock out all power sources. Only the person servicing the equipment should have the key to unlock the device.

VEHICLE RESTRAINT SAFETY DECALS

Every 90 days (quarterly) inspect all safety labels, placards, and tags to ensure they are present, easily seen, and legible. Refer to the Parts section of this publication to identify the location of the safety items listed below. Call NOVA Technical Service for replacements.

Page #	Item #	Description
105	41	No Step Decal
108	4	Caution Sign
108	3	Enter on Green Sign
109	5	Decal, Arc Flash
109	6	Decal, Hook Position
108	5	Placard, Restraint Operation

⚠ DANGER

Arc Flash and Shock Hazard
PPE [Personal Protection Equipment] Required

De-energize equipment before working on or inside.
Do not open cover without appropriate PPE.
Refer to NFPA 70E for PPE requirements.
This panel may contain more than one power source.

MF2-202-000

Hazardous Voltage Will Result in Death or Serious Injury

⚠ WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

ALWAYS disconnect electrical power source and ground wire before welding on restraint.

DO NOT ground welding equipment to any electrical components of the restraint. Always ground to the restraint frame.

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded.

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.

* Refer to OSHA Regulation 1910.146 Confine Spaces, 1910.147 Lockout/Tagout.

a. PRECAUTIONS

LOADING DOCK SAFETY SIGNS

MF-SS-1003
"A" Frame Loading Dock Safety Sign,
Size: 12-1/2"W X 23-1/2" H w/ English/Spanish Double Sided

b. OWNER'S/USER'S RESPONSIBILITIES

1. The manufacturer shall provide to the initial purchaser and make the following information readily available to the owners/users and their agents, all necessary information regarding Safety Information, Operation, Installation and Safety Precautions, Recommended Initial and Periodic Inspections Procedures, Planned Maintenance Schedule, Product Specifications, Troubleshooting Guide, Service Parts Listing, Warranty Information, and Manufacturer's Contact Information.

2. The owner/user should recognize the inherent dangers of the interface between the loading dock and the transport vehicle. The owner/user should, therefore, train and instruct all operators in the safe operation and use of the restraining device in accordance with manufacturer's recommendations and industry standards. Effective operator training should also focus on the owner's/user's company policies, operating conditions, and the manufacturer's specific instructions provided with the restraining device. Maintaining, updating, and retraining all operators on safe working habits and operation of the equipment, regardless of previous experience, should be done on a regular basis and should include an understanding and familiarity with all functions of the equipment. Owners/users shall actively maintain, update, and retrain all operators on safe working habits and operations of the equipment.

3. When selecting a restraining device, it is important to consider not only present requirements but also future plans and any possible adverse conditions, environmental factors, or usage. The owners/users shall provide application information to the manufacturer to receive recommendations on appropriate equipment specifications.

4. The owner/user must see all nameplates, placards, decals, instructions, and posted warnings are in place and legible and shall not be obscured from the view of the operator or maintenance personnel for whom such warnings are intended for. Contact manufacturer for any replacements.

5. Modifications or alterations of restraining devices shall be made only with prior written approval from the original manufacturer. These changes shall be in conformance with all applicable provisions of the MH30.3 standard and shall also satisfy all safety recommendations of the original equipment manufacturer of the particular application.

6. An operator training program should consist of, but not necessarily be limited to, the following:
   a. Select the operator carefully. Consider the physical qualifications, job attitude and aptitude.
   b. Assure that the operator reads and fully understands the complete manufacturer's owner's/user's manual.
   c. Emphasize the impact of proper operation upon the operator, other personnel, material being handled, and equipment. Cite all rules and why they are formulated.
   d. Describe the basic fundamentals of the restraining device and components design as related to safety, e.g., mechanical limitation, stability, functionality, etc.
   e. Introduce the equipment. Show the control locations and demonstrate functions. Explain how they work when used properly and maintained as well problems when they are used improperly.
   f. Assure that the operator understands nameplate data, placards and all precautionary information appearing on the restraining device.
   g. Supervise operator practice of equipment.
   h. Develop and administer written and practical performance tests. Evaluate progress during and at completion of the course.
   i. Administer periodic refresher courses. These may be condensed versions of the primary course and include on-the-job operator evaluation.

7. It is recommended that the transport vehicle is positioned as close as practical to the dock leveling device and in contact with both bumpers. When an industrial vehicle is driven on or off a transport vehicle during the loading and unloading operation, the transport vehicle parking brakes shall be applied and wheel chocks or restraining device that provides equal or better protection of wheel chocks shall be engaged. Also, whenever possible, air-ride suspension systems should have the air exhausted prior to performing said loading and unloading operations.

b. OWNER'S/USER'S RESPONSIBILITIES

8. When goods are transferred between the loading dock and a trailer resting on its support legs/ landing gear instead of a tractor fifth wheel or converter dolly, it is recommended that an adequate stabilizing device or devices shall be utilized at the front of the trailer.

9. In order to be entitled to the benefits of the standard product warranty, the dock safety equipment must have been properly installed, maintained, and operated in accordance with all manufacturer's recommendations and/or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment, or lack of maintenance. Periodic lubrication, adjustment, and inspection in accordance with all manufacturer's recommendations are the sole responsibility of the owner/user.

10. Manufacturer's recommended maintenance and inspection of all restraining devices shall be performed in conformance with the following practices: A planned Maintenance Schedule Program must be followed, only trained and authorized personnel shall be permitted to maintain, repair, adjust, and inspect restraining devices, and only the use of original equipment manufacturer parts, manuals, maintenance instructions, labels, decals, and placards or their equivalent. Written documentation of maintenance, replacement parts, or damage should be kept. In the event of damage, notification to the manufacturer is required.

11. Restraining devices that are structurally damaged shall be removed from service, inspected by a manufacturer's authorized representative, and repaired or replaced as needed or recommended by the manufacturer before being placed back in service.

1. RESTRAINT INSTALLATION INSTRUCTIONS

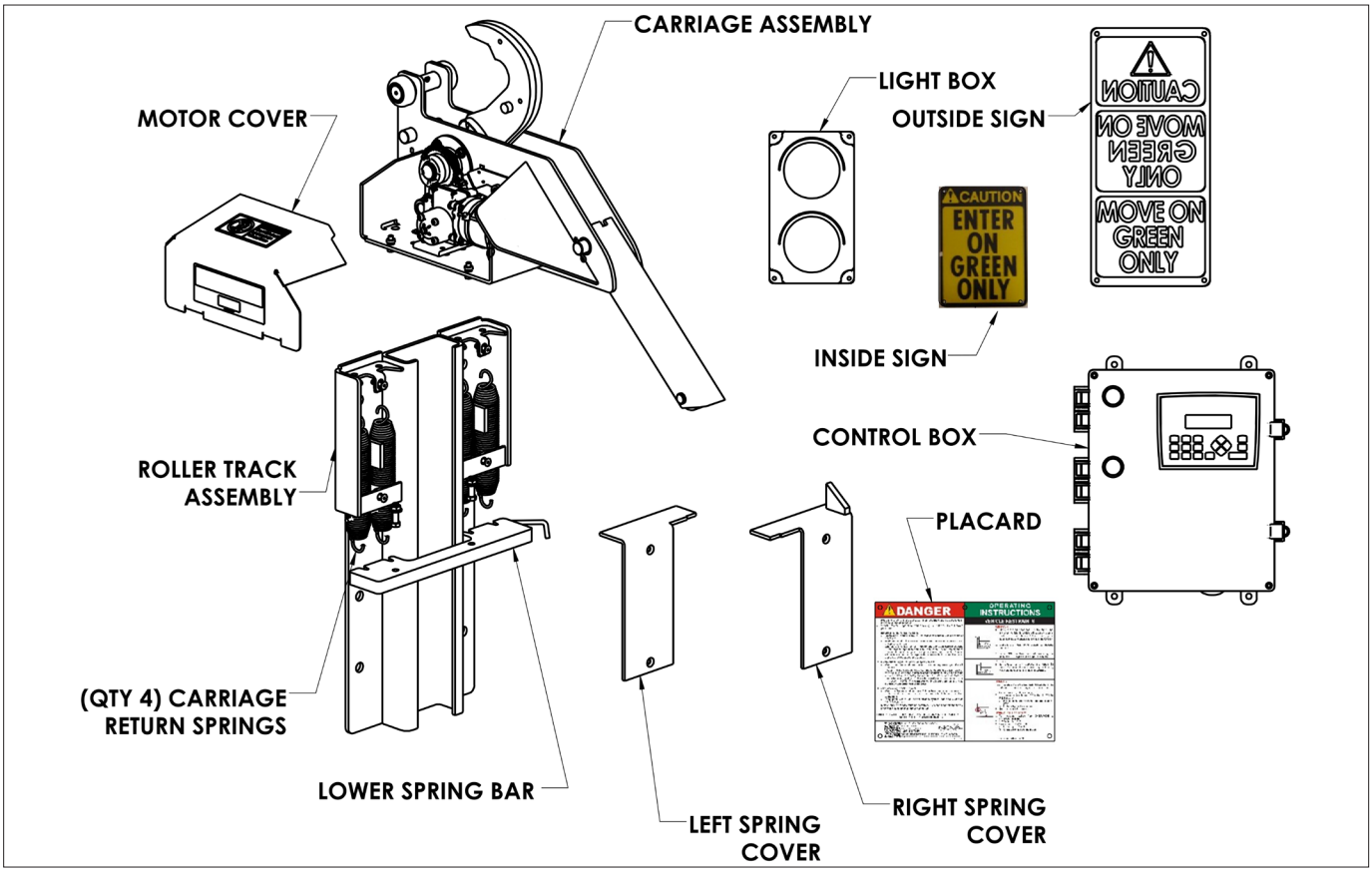


FIGURE 1.A—OMNILOCK™ COMPONENTS DESCRIPTION

NOTICE

A 4" thick bumper is required regardless of whether or not there is a leveler. DO NOT install a NOVA OmniLock™ vehicle restraint on docks without 4" thick bumpers. For thicker bumpers consult factory.

⚠ DANGER

Post safety warnings and barricade work area, at dock level and at ground level, to prevent unauthorized use of the dock position.

INSPECT NOVA OMNILOCK™ PARTS

Open packaging and inspect all parts and materials—see Figure 1.A above. Immediately report any damage or missing materials to factory. Review the component assemblies to determine their correct locations.

1.1 INSTALLATION OVERVIEW

A NOVA OmniLock™ vehicle restraint may be installed on docks with or without levelers; consult NOVA for proper application.

Follow the simple installation procedures below:

- Inspect NOVA OmniLock™ vehicle restraint parts.
- Install roller track.
- Install NOVA OmniLock™ vehicle restraint into roller track.
- Install electrical components.
- Install safety & instruction signs.
- Test operation.

1. RESTRAINT INSTALLATION INSTRUCTIONS

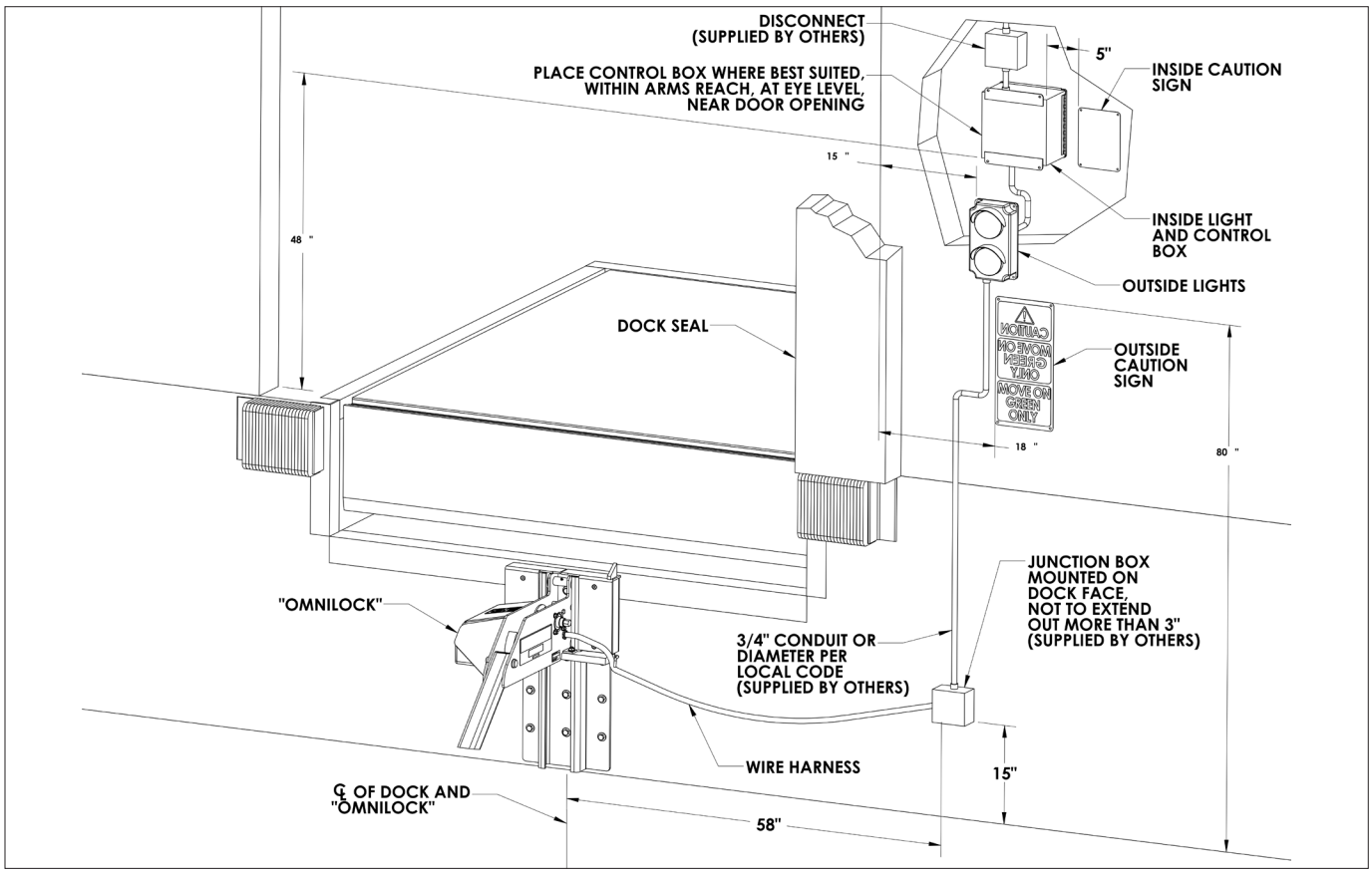


FIGURE 1.B—SUGGESTED COMPONENT LOCATION

There is one (1) driver outside caution sign and one (1) operator inside caution signed supplied with each NOVA OmniLock™ vehicle restraint. (Mounting hardware supplied by others.) Mount outside sign as shown in Figure 1.B. Mount the inside sign next to the control box. Attach placard to control box with zip tie supplied or mount next to the control box. Install all signs provided.

NOTICE

- Some docks may have dock/truck seals or shelters which are larger than standard. The outside light, sign location, and mounting should be studied before proceeding to avoid interference.
- If necessary, signs may be trimmed for fit. However, DO NOT cut or eliminate sign letters or words.
- Attach signs with concrete anchors or screws. Do not use nails.
- NEVER put conduit in front of signs. A clear view must be maintained at all times of the exterior and interior signs.

1. RESTRAINT INSTALLATION INSTRUCTIONS

1.2 INSTALL ROLLER TRACK

Install roller track onto dock face at specified location by welding to an embedded steel plate or by using the fifteen (15) concrete anchors provided in conjunction with welding to pit steel and a leveler frame. Refer to Figures 1.C and 1.D.

If you have questions, contact NOVA Technical Support at (800) 236-7325.

⚠WARNING

Walls must be poured concrete 8" thick minimum to install wedge anchors. Block or brick wall is not acceptable.

NOTICE

The roller track must be plumb with dock face. If not, use and weld (6) shims 2" wide x 25 5/8" long. If shims are over 1/2" thick use longer anchors. If shims need to be 1" thick or more, contact NOVA.

If the dock face is not perpendicular, contact NOVA Technical Support at (800) 236-7325.

The carriage roller track cannot be bent or deformed. Straighten or replace if necessary.

Some mechanical dock levelers have an adjusting nut access hole in the leveler front subframe. If the NOVA OmniLock™ vehicle restraint roller track interferes with the access hole, contact NOVA Technical Service.

Some levelers are slightly recessed within the pit and thus require a shim to be inserted between the roller track and the leveler front subframe and welded in place.

NOTICE

Fifteen (15) concrete anchors are provided with each NOVA OmniLock™ vehicle restraint. An anchor must be installed in each roller track hole except for those plug-welded to embedded steel.

ANCHOR INSTALLATION INSTRUCTIONS

1. Put roller track in place.
2. Drill hole of 5/8" diameter and minimum of 4-5/8" deep. Clean out hole.
3. Insert anchor and drive flush with roller track, making sure that the threaded wedge is inserted first. Do not disassemble anchor prior to installation.
4. Install all anchors and torque to 60 ft-lbs. See Figure 1.C.

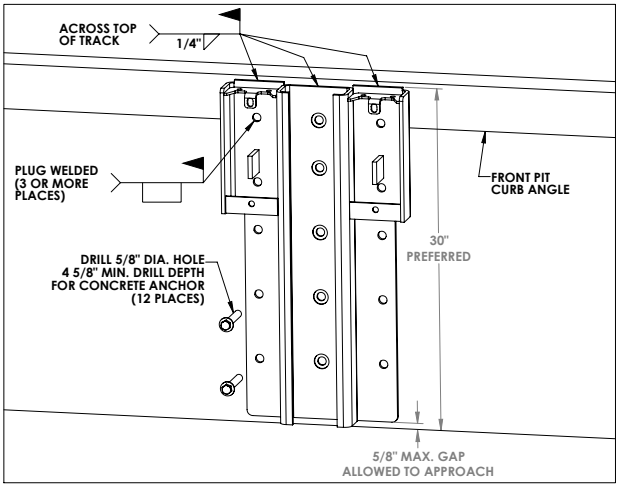


FIGURE 1.C—ANCHORING ROLLER TRACK

1. RESTRAINT INSTALLATION INSTRUCTIONS

1.3 WELDING INSTALLATION INSTRUCTIONS

If the installation being worked on is a retrofit or replacement situation, the following electrical connections must be disconnected prior to welding.

LOCKOUT/TAGOUT the power at the fused disconnect, then remove the motor and limit switch connections from the control harness located in the outside junction box. Once all welding has been completed, reconnect all the wires.

NOTICE

Never install the NOVA OmniLock™ vehicle restraint directly onto concrete block or brick dock face.

When welding the NOVA OmniLock™ vehicle restraint, disconnect power and ground leads to leveler.

Due to actual conditions, total mounting height may be different.

Plug weld all holes that are in contact with the embedded mounting plate. All fifteen (15) holes must be either plug welded or anchored. See Figure 1.C.

Shims must be the full length of the roller track. Minimum electrode must be 1/8" 7018 or better. See Figure 1.E.

Never weld on the NOVA OmniLock™ vehicle restraint after the motor is wired into the control box and power to the control box is on. Electrical current from the welder can loop back through the circuit and damage the motor and other components.

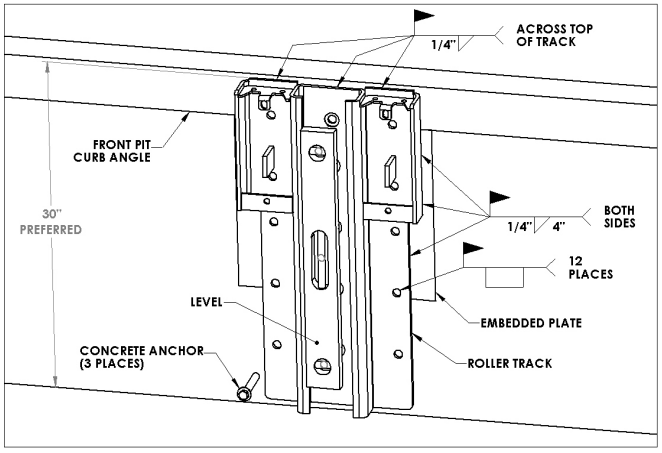


FIGURE 1.D—WELDING ROLLER TRACK FRONT VIEW (WITH EMBEDDED PLATE)

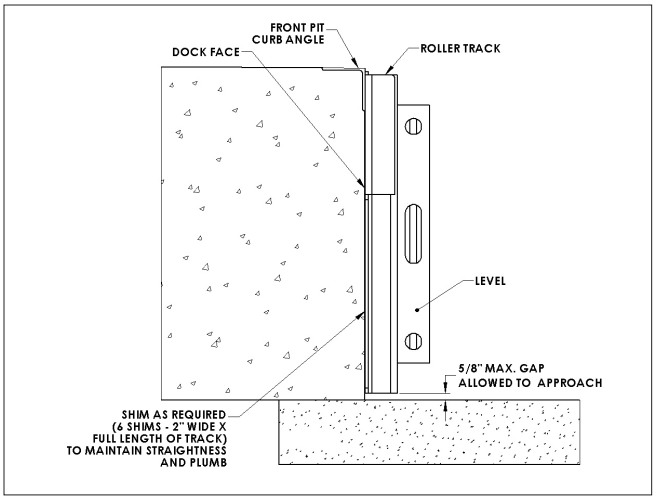


FIGURE 1.E—WELDING ROLLER TRACK SIDE VIEW

1. RESTRAINT INSTALLATION INSTRUCTIONS

1.4 INSTALL RESTRAINT INTO ROLLER TRACK

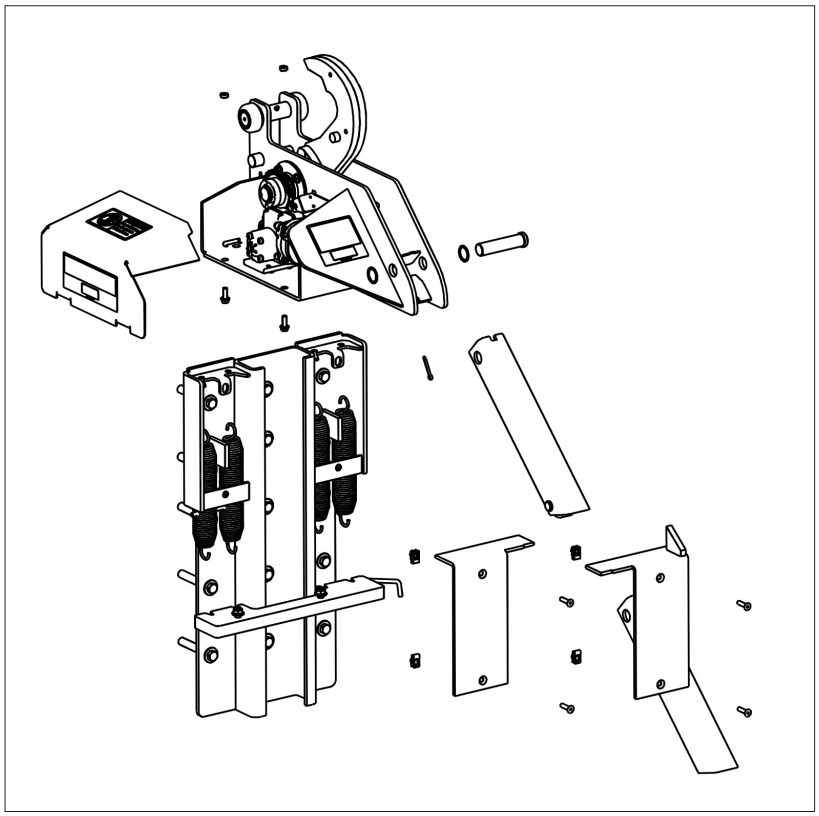


FIGURE 1.F—INSTALL CARRIAGE ASSEMBLY INTO ROLLER TRACK

⚠ CAUTION

Use lifting device (e.g. crane, jack) when lifting carriage (approx. 110 lbs.). Lifting by hand may cause back injury.

- Attach the four (4) springs to the lower spring bar.
- Pull springs upward and slide over top spring mount on the track roller.
- Slide the carriage assembly into the roller track. Refer to Figure 1.F.
- Apply anti-seize lubricant to clip nut threads. Install right and left spring cover with clip nuts and nut head screws provided.
- Position and bolt the lower spring bar to the bottom of the NOVA OmniLock™ vehicle restraint carriage.
- Install the motor cover and spring covers.
- Install slope extension.

2. CB-60 INSTALLATION INSTRUCTIONS

2.1 OVERVIEW/ELECTRICIAN'S NOTES

⚠ DANGER

Make sure that the power source has been locked out and tagged according to OSHA* regulations and approved local electrical codes.

If the incoming electrical power for the NOVA OmniLock™ vehicle restraint is taken from a nearby electrical appliance, e.g., overhead door opener, verify that the amperage is in accordance with local and federal codes.

The NOVA OmniLock™ vehicle restraint 1/10 HP motor requires 120V 60 Hz single power with 10 amps of current to operate properly.

Two (2) NOVA OmniLock™ vehicle restraints can be connected into one (1) 20 amp branch circuit breaker per the 1999 National Electrical Code Paragraph 430-53.

If you have questions, contact NOVA Technical Support at (800) 236-7325.

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

The NOVA OmniLock™ vehicle restraint assembly includes a 63" long flexible wiring harness, the control box with lights, and the outside signal light box. The outside junction box, conduit fittings, and wire are provided by others; be sure to use a qualified installer utilizing quality materials.

Refer to Figure 2.A for wiring diagrams.

CONTROL BOX INSTALLATION GUIDELINES—TEMPERATURE CONTROLLED APPLICATIONS.

1. Route the conduit to enter through the side or bottom of the enclosure. If the conduit could fill with water, a drip leg may be needed.
2. Seal the conduit in any location where the conduit crosses over temperature zones that could produce condensation.
3. Install spacers between the wall and enclosure to provide temperature insulation and air flow.

* Refer to OSHA Regulation 1910.146 Confine Spaces, 1910.197 Lockout/Tagout.

2. CB-60 INSTALLATION INSTRUCTIONS

2.2 CB-60 WIRING DIAGRAM

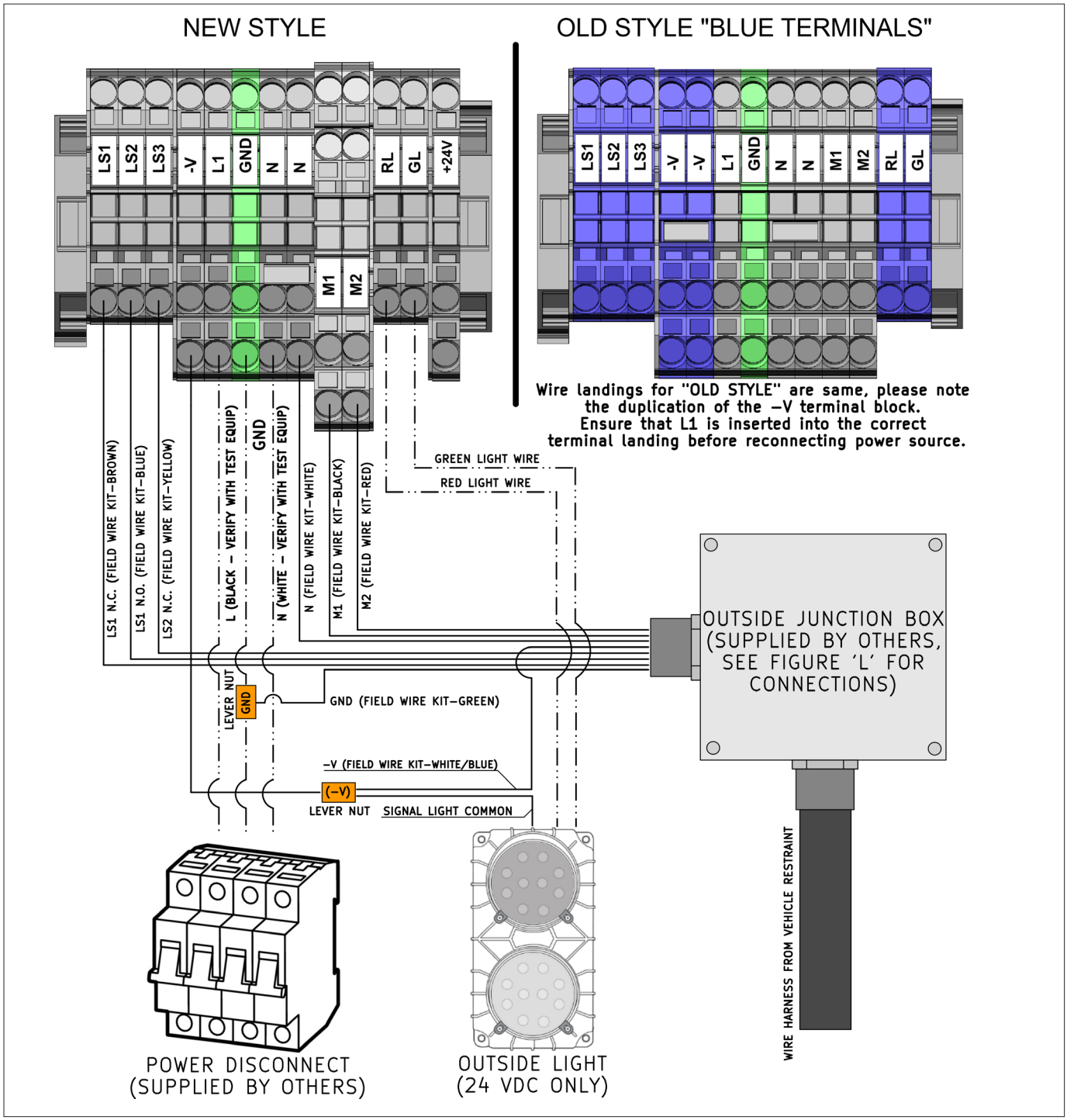


FIGURE 2.A

2. CB-60 INSTALLATION INSTRUCTIONS

2.3 JUNCTION BOX WIRING DIAGRAM

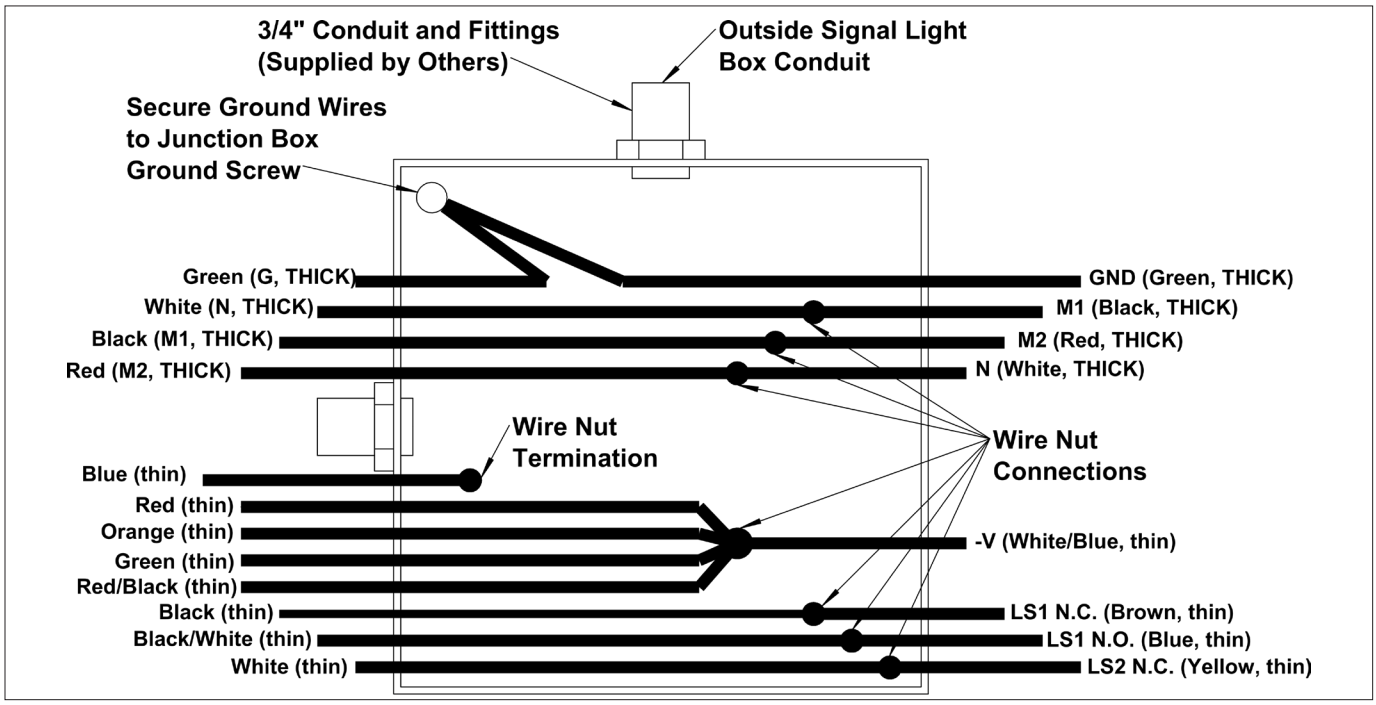


FIGURE 2.B—OUTSIDE JUNCTION BOX

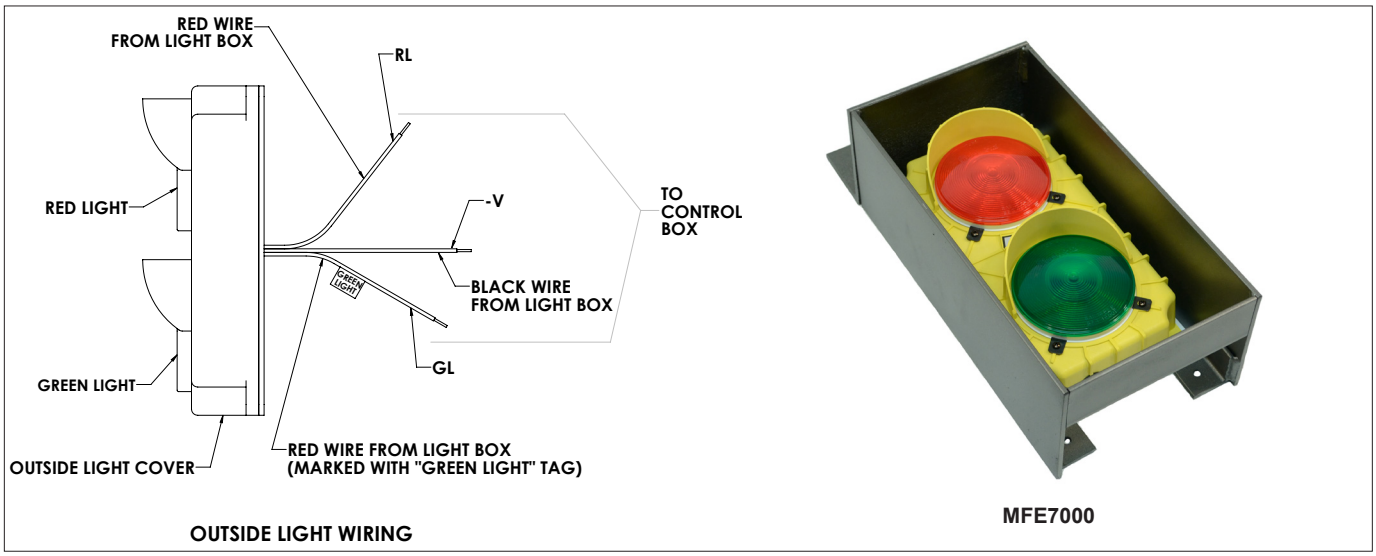


FIGURE 2.C—OUTSIDE SIGNAL LIGHT WIRING

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

3. CB-61 INSTALLATION INSTRUCTIONS

3.1 DISCLAIMERS AND NOTES

NOTE 1 : CONTROL BOX WIRING - INTERLOCKED DOOR

- Disclosure:

    - Door logic board example may vary. Reference door operator owner's/user's manual before installation.
    - For example that follows, remove jumper from 2 and 3 and run wires from IRA to 2 and IRB to 3 on DOOR LOGIC BOARD EXAMPLE.
    - Door limit switch example may vary. Limit switch should be installed in door operator electrical box. Do not splice or cut existing limit switch wires. Reference door operator owner's/user's manual before installing.

NOTE 2 : CONTROL BOX WIRING - INTERLOCKED LEVELER

- Disclosure:

    - Leveler example may vary. Reference leveler owner's/user's manual before installation.
    - For example as follows, remove jumper from interlock terminals and run wires from IRA to one and IRB to the other on "LEVELER INTERLOCK BOARD".
    - For 3-Phase Hydraulic Powered Levelers, it is required that CR3 dry contact is used only to complete an interlock enable circuit. The CB-61 Control Box CANNOT pass 3-Phase power with it's interlock output.
    - Leveler proximity sensor example may vary. Proximity sensor should be installed with the sensor facing the lip of the leveler. Do not splice or cut existing limit switch wires. Reference leveler owner's/user's manual before installation.

NOTE 3 : CONTROL BOX WIRING - INTERLOCKED GATE

- Disclosure:

    - Gate wiring diagram references NOVA Defender Gate kits. Please see instructions provided with Gate for proper installation and hook-up.

3. CB-61 INSTALLATION INSTRUCTIONS

3.2 CB-61-A/B (DOOR) WIRING DIAGRAM - SEE NOTE 1 ON PAGE 19

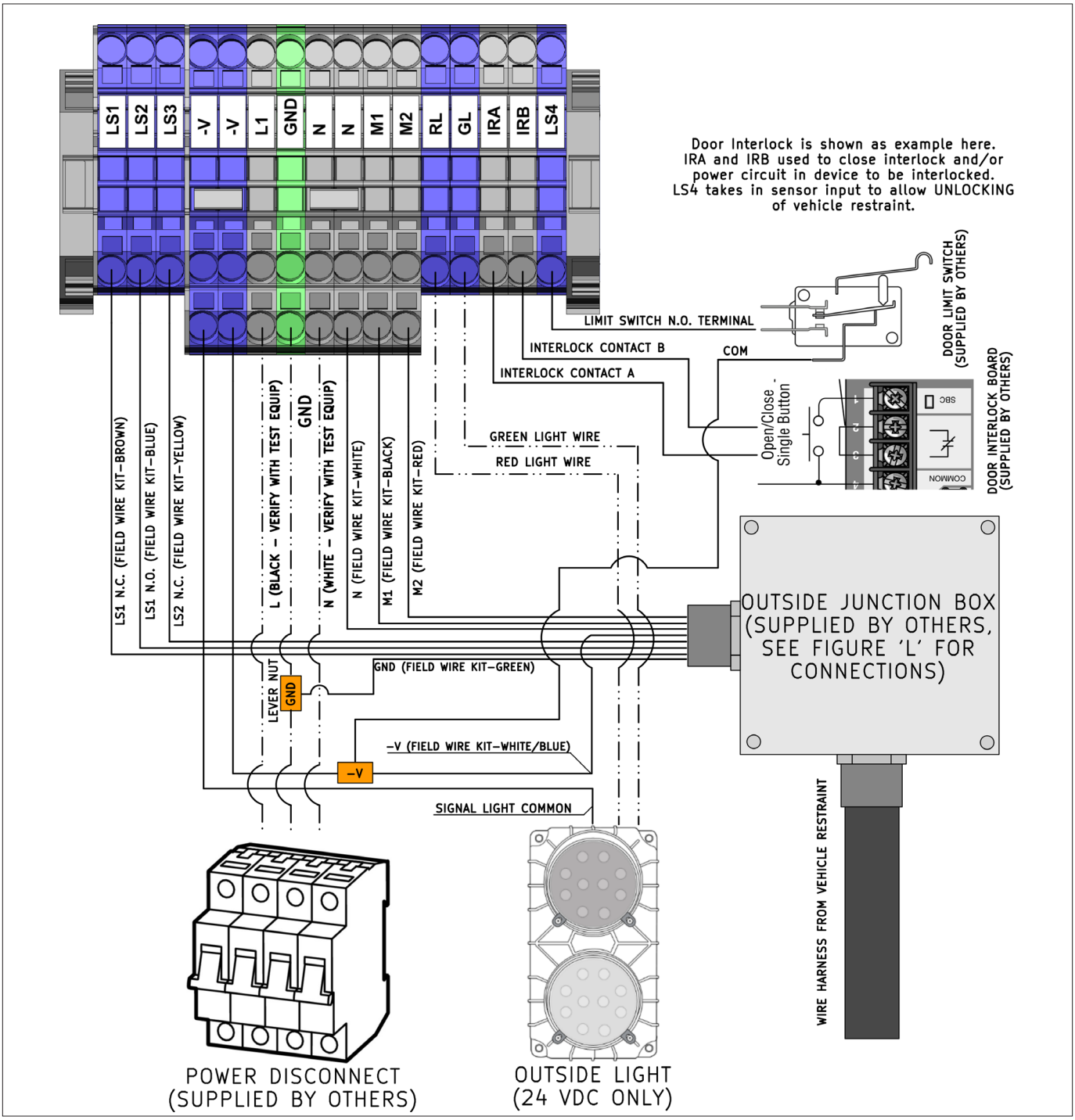


FIGURE 3.A—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

3. CB-61 INSTALLATION INSTRUCTIONS

3.3 CB-61-C (LEVELER) WIRING DIAGRAM - SEE NOTE 2 ON PAGE 19

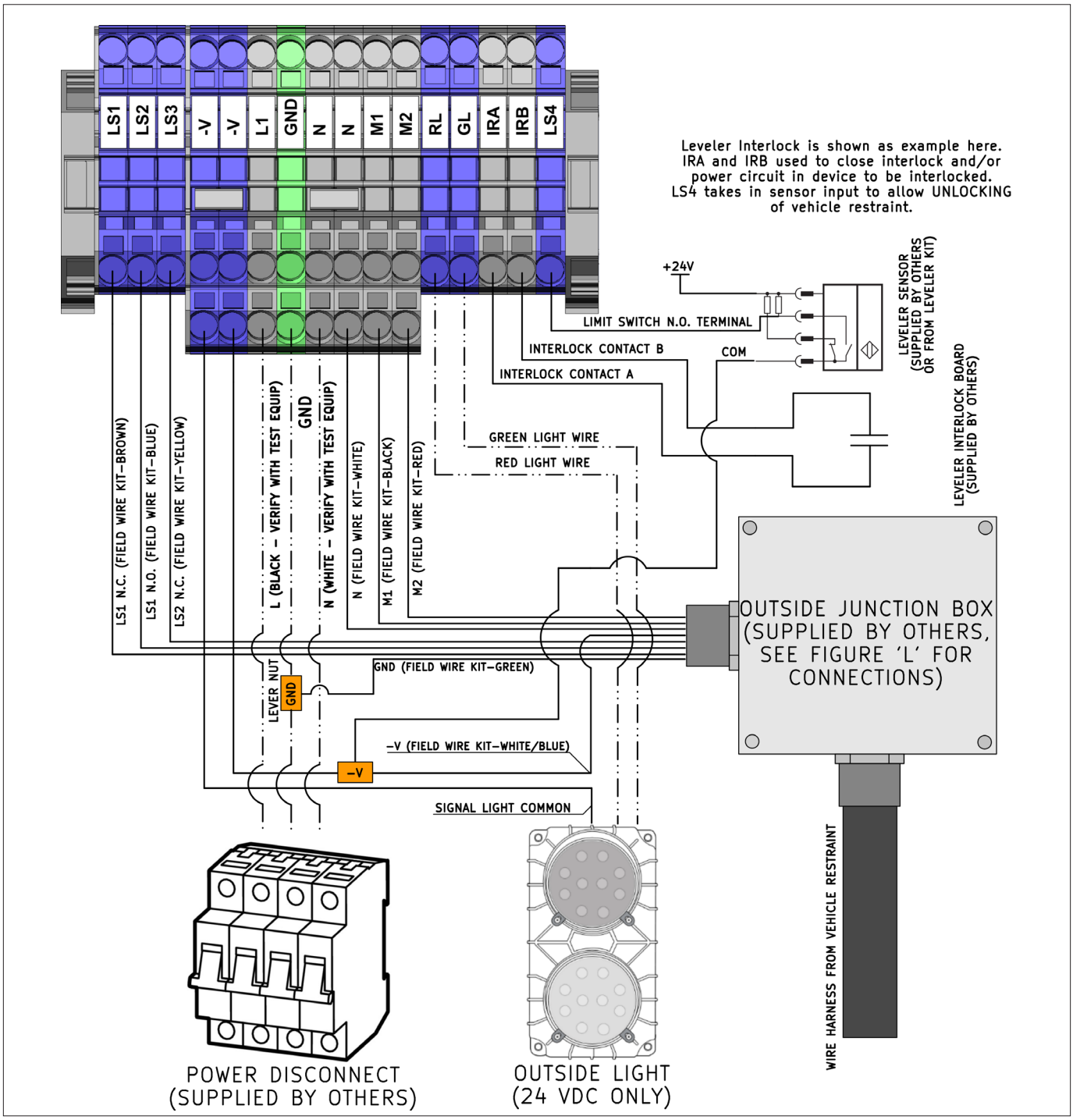


FIGURE 3.B—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

3. CB-61 INSTALLATION INSTRUCTIONS

3.4 CB-61-G (GATE) WIRING DIAGRAM - SEE NOTE 3 ON PAGE 19

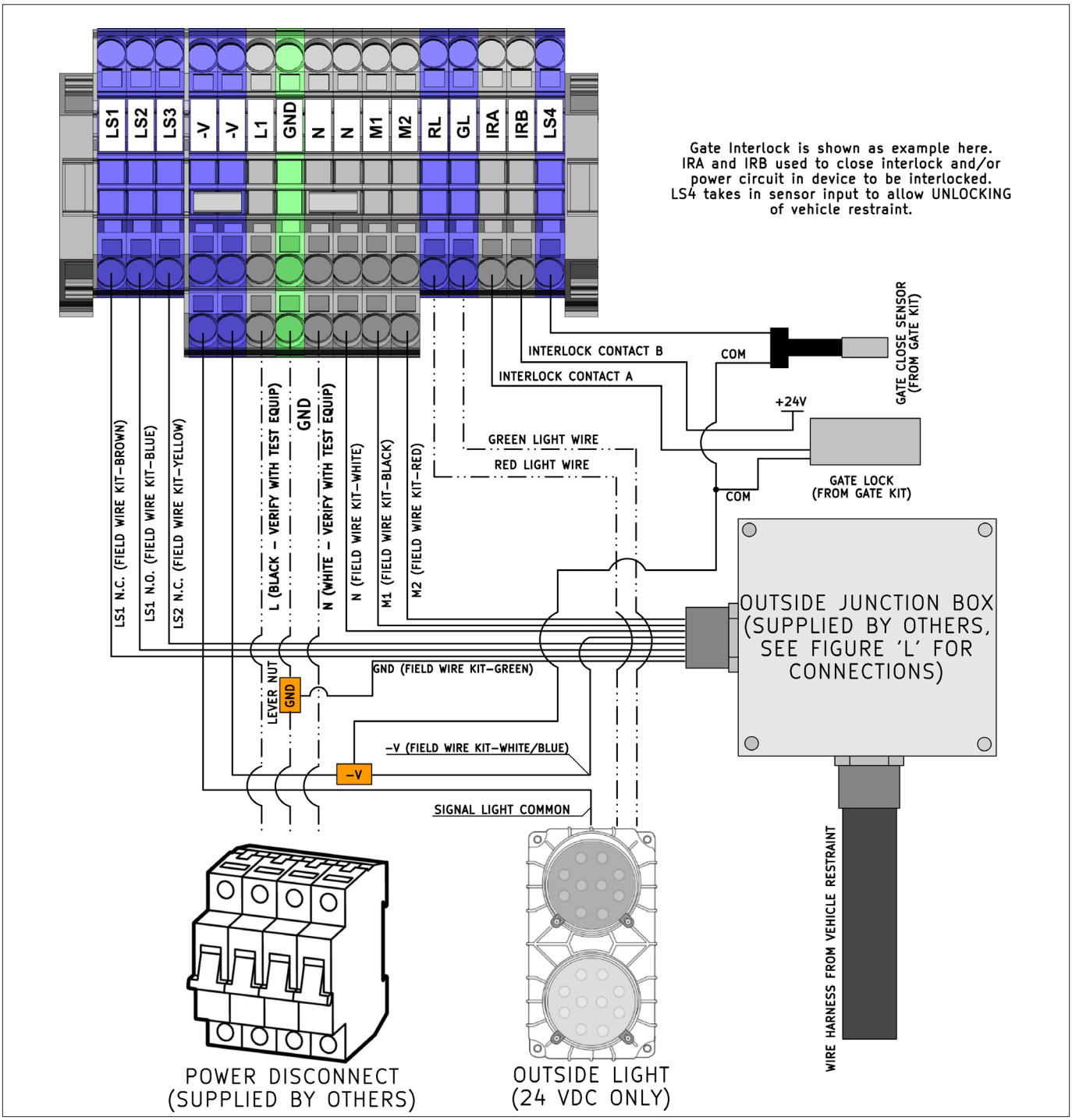


FIGURE 3.C—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

3. CB-61 INSTALLATION INSTRUCTIONS

3.5 JUNCTION BOX WIRING DIAGRAM

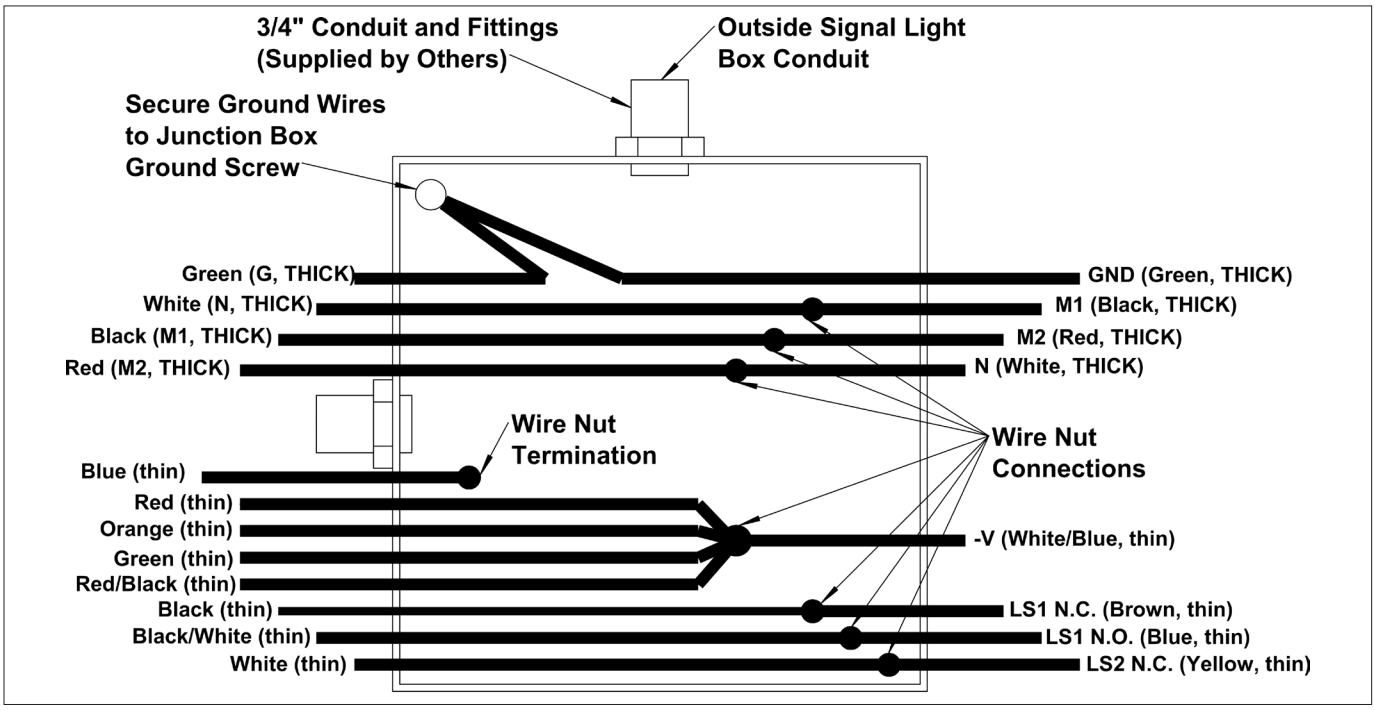


FIGURE 3.D—OUTSIDE JUNCTION BOX

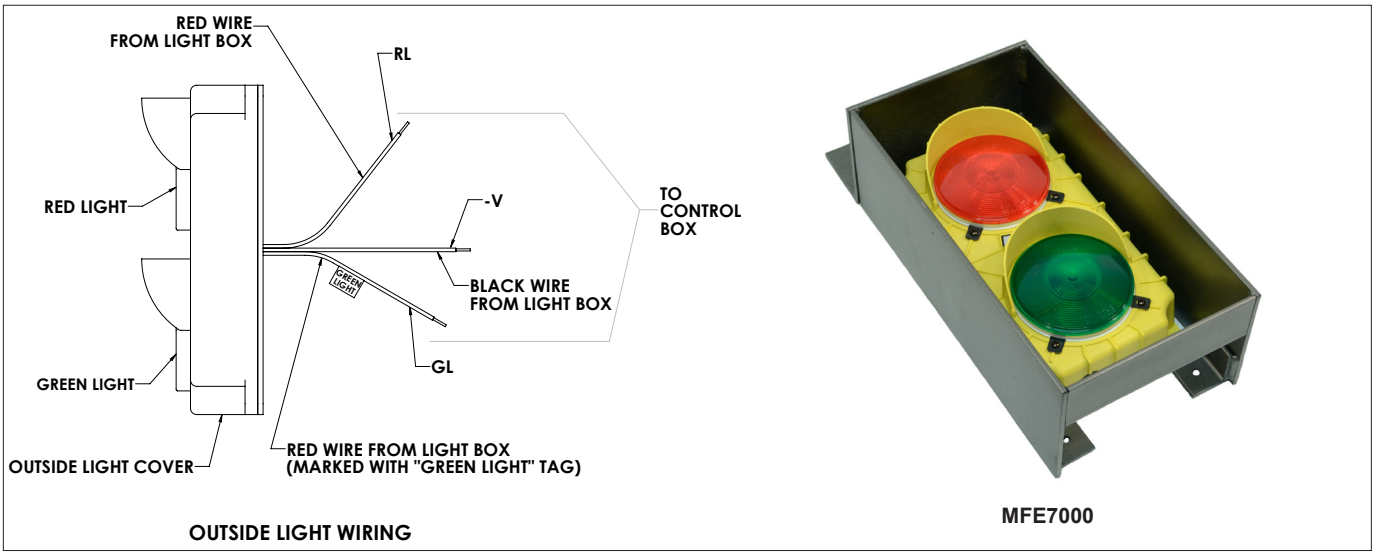


FIGURE 3.E—OUTSIDE SIGNAL LIGHT WIRING

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

4. CB-62 INSTALLATION INSTRUCTIONS

4.1 CB-62 OVERVIEW

The following pages demonstrate how to install the NOVA OmniLock™ with the CB-62 Control Box. The CB-62 Combination Control box allows the operator to control multiple dock equipment types. Figure 4.A shows the different option codes available for the CB-62 Control Box. The items highlighted are the options pertinent to the CB-62 Control Box.

OPTION CODE MATRIX			
Digit	**Feature**	**Value**	**Function**
Digit 1	Independent Lip Control	1	Disable Independent Lip Control
		2	Enable Independent Lip Control
Digit 2	Dock Leveler Motor Type	1	1 Phase Hydraulic Motor
		2	3 Phase Hydraulic Motor
		3	Electric Blower Airbag Motor
		4	No Leveler Motor
Digit 3	Control Box Hardware Type (Standard Interlock or Combo)	1	"CB-x1 Style" 'A' Interlock (Door)
		2	"CB-x1 Style" 'B' Interlock (Independent Door)
		3	"CB-x1 Style" 'C' Interlock (Leveler)
		4	"CB-x1 Style" 'G' Interlock (Gate)
		5	"Combo Style" 'Capital D' Interlock (Door)
		6	"Combo Style" 'Lowercase d' Interlock (Independent Door)
		7	"Combo Style" No Door Interlock
		8	"CB-x0 Style" No Interlock
Digit 4	ARTD	1	Disable ARTD
		2	Enable ARTD
Digit 5	Combo Box Gate-Leveler Interlock Types	1	Leveler Only
		2	Gate RS
		3	Gate LS
		4	Gate RS LS
		5	Gate RL (Includes RS)
		6	Gate RL LS (Includes RS)
		7	Disable Gate-Leveler Interlocks

FIGURE 4.A

The combined code is displayed on the PLC screen. When troubleshooting the dock control system, please note this number down for your own information, and give it to a Nova Technical Support member should further assistance be needed.

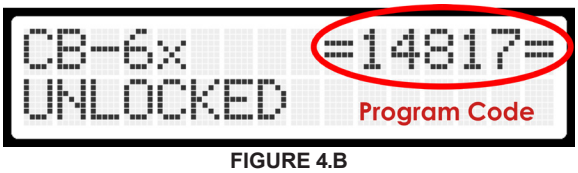


FIGURE 4.B

4. CB-62 INSTALLATION INSTRUCTIONS

4.2 SET-UP PHOTOELECTRIC SENSOR CONT. (ONLY WITH OVERHEAD DOOR OPTION)

1. Verify the overhead door is fully closed. Fasten reflector bracket to stile on overhead door.
   a. See Figure 4.C
   b. Roughly 24 to 36 inches from the floor.
      ii. Reflector must be facing the closest door track.
   c. Use the following hardware.
      i. 2 (CB-1017) No.12 X 3/4" Hex Head Self-Drilling Screw.

2. Mount photoelectric sensor bracket to door track across from reflector at lower part of door.
   a. See Figure 4.D.
   b. Line up photoelectric sensor. Clearance hole to be in line with center of reflector.
   c. Drill two Ø 5/16" clearance holes through door track for bolts to fasten bracket.
   d. Use the following hardware to mount sensor bracket to door track.
      i. 2 (CB-1018) 1/4"-20 Nyloc Nut.
      ii. 2 (CB-1019) 1/4"-20 X 5/8" Button Head Cap Screw.

3. Open overhead door and verify overhead door is in the fully open position.

4. Mount photoelectric sensor bracket to door track across from reflector at upper part of door.
   a. See Figure 4.D.
   b. Line up photoelectric sensor. Clearance hole to be in line with center of reflector.
   c. Drill two Ø 5/16" clearance holes through door track for bolts to fasten bracket.
   d. Use the following hardware to mount sensor bracket to door track.
      i. 2 (CB-1018) 1/4"-20 Nyloc Nut.
      ii. 2 (CB-1019) 1/4"-20 X 5/8" Button Head Cap Screw.

5. Install photoelectric sensor into bottom mounting bracket.
   a. See Figure 4.E.

6. Install photoelectric sensor into bottom mounting bracket.
   a. See Figure 4.E.

7. Connect the M12 cord (CB-1016) to each photoelectric sensor and route other end of the cord to the combination control box.

8. Perform electrical connections per instructions found on page 33.

9. Once the photoelectric sensors are wired and the combination control box is powered up, verify the three LEDs on each photoelectric sensor are on as listed below:
   a. Green
      i. On – Power is applied.
      ii. Off – No power going to sensor, verify wiring on page 33.
   b. Red
      i. On – Output is on.
      ii. Off – No Output coming from sensor.
   c. Orange (LED will only be on if reflector is in front of sensor).
      i. On (No Flashing) – Great alignment.
      ii. Long Flashing – Good alignment.
      iii. Short Flashing – Poor alignment.

4. CB-62 INSTALLATION INSTRUCTIONS

4.2 SET-UP PHOTOELECTRIC SENSOR CONT. (ONLY WITH OVERHEAD DOOR OPTION)

iv. Off – Out of alignment OR photoelectric sensor is out of range.

If orange LED is flashing, loosen bolts securing reflector to bracket. Move the reflector to a position that causes the orange LED to illuminate constantly. Secure the reflector in this position.

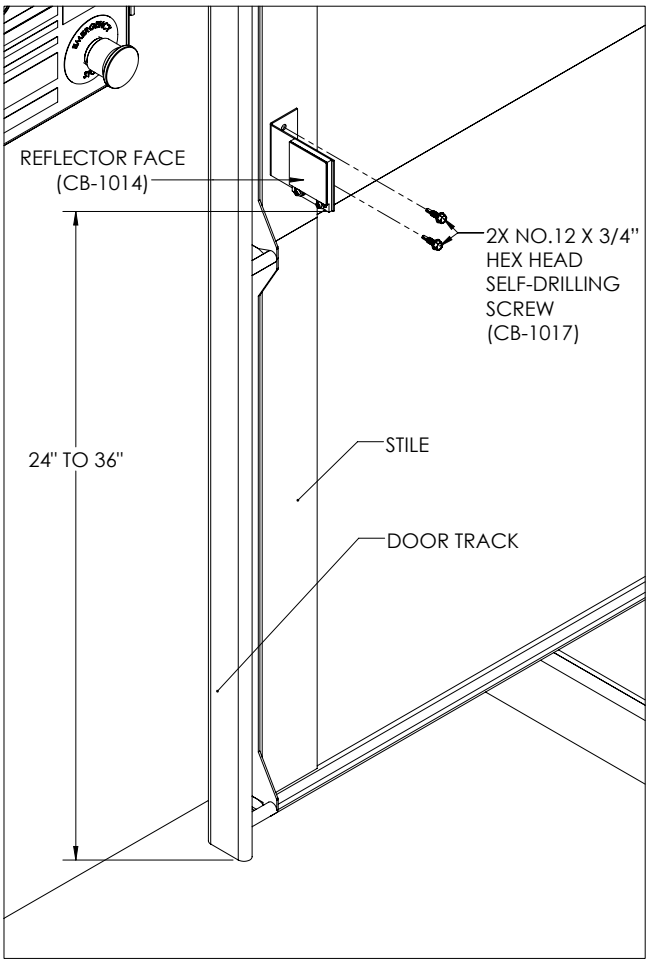


FIGURE 4.C—MOUNTING REFLECTOR

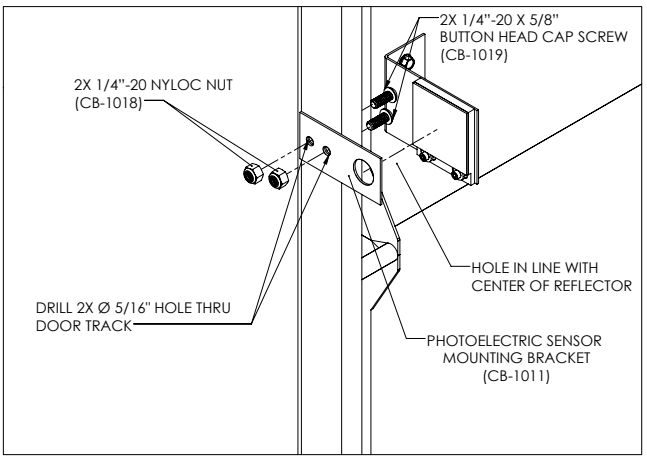


FIGURE 4.D—MOUNTING REFLECTOR

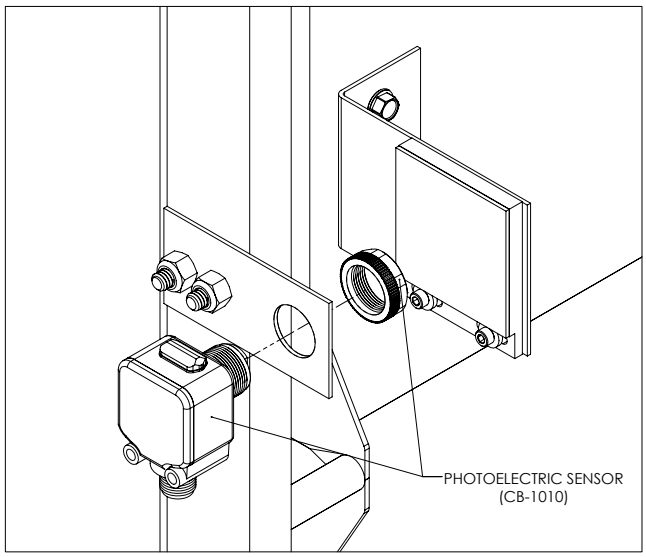


FIGURE 4.E—INSTALLING PHOTOELECTRIC SENSORS

4. CB-62 INSTALLATION INSTRUCTIONS

4.3 SET-UP PROXIMITY SENSOR
(ONLY WITH AIR BAG OR HYDRAULIC DOCK LEVELER)

- If the combination control box installation is with a new dock leveler installation see Section 1.
- If the combination control box installation is with a current dock leveler see Section 2.

Section 1:
NOTE: Installation and wiring of proximity sensor must be completed before wiring dock control to and powering up combination control box.

HYDRAULIC LEVELER

1. Read and understand the maintenance/service of section of the original equipment manufacturer (O.E.M.) owner's/user's manual for the dock leveler.
2. Check that lip is fully resting on the lip keepers and at the lowest part of the keeper cradle in the center. If not, proceed to section: ADJUSTMENTS – ADJUST LIP STOP BOLT(S) on page 102.
3. Place the dock leveler in the maintenance/service position by following the O.E.M. instructions.
4. Place Proximity Sensor Bracket Assembly (CB-1028) on sub-frame as shown in Figure 4.F on page 30.
5. Fasten the Proximity Sensor Bracket Assembly, with the two 1/4"-20 X 1" hex head self-drilling screws, to the sub-frame as shown in Figure 4.G on page 30. (If bracket assembly cannot be fastened to sub-frame, remove sensor from bracket before welding bracket to pit metal).
6. Remove the end of the screws to eliminate any sharp points on the sub-frame and to create a flush surface as shown in Figure 4.H on page 30.
7. Connect the M12 cord (CB-1016 to the proximity sensor and run other end of the cord to the pit junction box.
8. Perform electrical connections per instructions found on page 37.
9. Place the dock leveler in the stored position from maintenance/service position by following the O.E.M. instructions.
10. Once the proximity sensor is wired and the combination control box is powered up, verify the two LEDs on the proximity sensor are illuminated as listed below by using a mechanics mirror.
    a. Green
        i. On – Power is applied
        ii. Off – No power going to sensor, verify wiring on page 37.
    b. Orange (LED will only be on if dock leveler lip is in front of sensor)
        i. On – Output is on.
        ii. Off – No Output coming from sensor.

⚠CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

4. CB-62 INSTALLATION INSTRUCTIONS

4.3 SET-UP PROXIMITY SENSOR CONT.
(ONLY WITH AIR BAG OR HYDRAULIC DOCK LEVELER)

Section 1:
NOTE: Installation and wiring of proximity sensor must be completed before wiring dock control to and powering up combination control box.

AIR BAG LEVELER

1. Read and understand the maintenance/service of section of the original equipment manufacturer (O.E.M.) owner's/user's manual for the dock leveler.
2. Check that lip is fully resting on the lip keepers and at the lowest part of the keeper cradle in the center. If not, proceed to section: ADJUSTMENTS – ADJUST LIP STOP BOLT(S) on page 102.
3. Place the dock leveler in the maintenance/service position by following the O.E.M. instructions.
4. Place Proximity Sensor Bracket Assembly (CB-1028) on sub-frame as shown in Figure 4.F on page 30.
5. Fasten the Proximity Sensor Bracket Assembly, with the two 1/4"-20 X 1" hex head self-drilling screws, to the sub-frame as shown in Figure 4.G on page 30. (If bracket assembly cannot be fastened to sub-frame, remove sensor from bracket before welding bracket to pit metal).
6. Remove the end of the screws to eliminate any sharp points on the sub-frame and to create a flush surface as shown in Figure 4.H on page 30.
7. Connect the M12 cord (CB-1016 to the proximity sensor and run other end of the cord to the pit junction box.
8. Perform electrical connections per instructions found on page 34 or page 37.
9. Place the dock leveler in the stored position from maintenance/service position by following the O.E.M. instructions.
10. Once the proximity sensor is wired and the combination control box is powered up, verify the two LEDs on the proximity sensor are illuminated as listed below by using a mechanics mirror.
    a. Green
        i. On – Power is applied.
        ii. Off – No power going to sensor, verify wiring on page 34 or page 37.
    b. Orange (LED will only be on if dock leveler lip is in front of sensor)
        i. On – Output is on.
        ii. Off – No Output coming from sensor.

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

4. CB-62 INSTALLATION INSTRUCTIONS

4.3 SET-UP PROXIMITY SENSOR CONT.
(ONLY WITH AIR BAG OR HYDRAULIC DOCK LEVELER)

Section 2:
NOTE: Installation and wiring of proximity sensor must be completed before wiring dock control to and powering up combination control box.

1. Read and understand the maintenance/service of section of the original equipment manufacturer (O.E.M.) owner's/user's manual for the dock leveler.
2. Check that lip is fully resting on the lip keepers and at the lowest part of the keeper cradle in the center. If not, proceed to section: ADJUSTMENTS – ADJUST LIP STOP BOLT(S) on page 102.
3. Place the dock leveler in the maintenance/service position by following the O.E.M. instructions.
4. Place Proximity Sensor Bracket Assembly (CB-1028) on sub-frame as shown in Figure 4.F on page 30.
5. Fasten the Proximity Sensor Bracket Assembly, with the two 1/4"-20 X 1" hex head self-drilling screws, to the sub-frame as shown in Figure 4.G on page 30. (If bracket assembly cannot be fastened to sub-frame, remove sensor from bracket before welding bracket to pit metal).
6. Remove the end of the screws to eliminate any sharp points on the sub-frame and to create a flush surface as shown in Figure 4.H on page 30.
7. Connect the M12 cord (CB-1016) to the proximity sensor and run other end of the cord to the pit junction box.
8. Perform electrical connections per instructions found on page 34 or page 37.
9. Place the dock leveler in the stored position from maintenance/service position by following the O.E.M. instructions.
10. Once the proximity sensor is wired and the combination control box is powered up, verify the two LEDs on the proximity sensor are illuminated as listed below by using a mechanics mirror.
    a. Green
        i. On – Power is applied.
        ii. Off – No power going to sensor, verify wiring on page 34 or page 37.
    b. Orange (LED will only be on if dock leveler lip is in front of sensor)
        i. On – Output is on.
        ii. Off – No Output coming from sensor.

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

4. CB-62 INSTALLATION INSTRUCTIONS

4.3 SETUP PROXIMITY SENSOR CONT.
(ONLY WITH AIR BAG OR HYDRAULIC DOCK LEVELER)

NOTE: Sensor must target the back side of the lip.

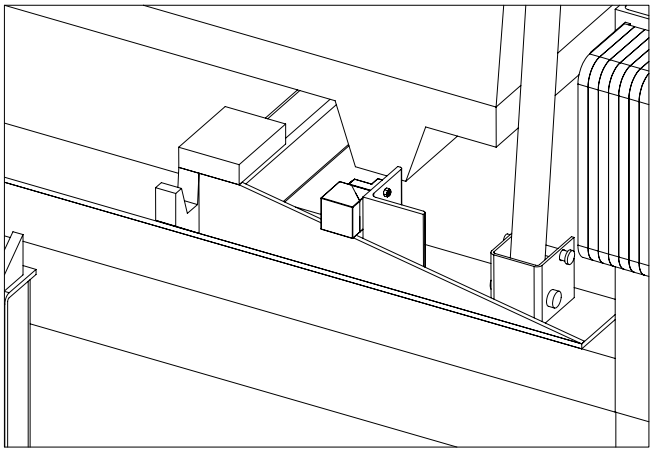


FIGURE 4.F—INSTALLING PROXIMITY SENSOR BRACKET

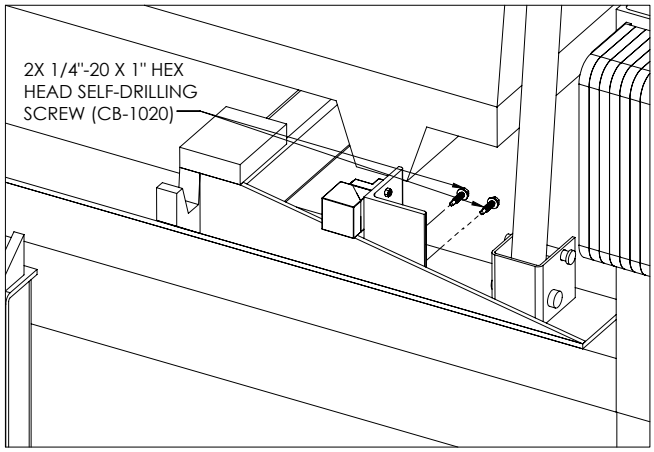


FIGURE 4.G—FASTEN BRACKET TO SUB-FRAME

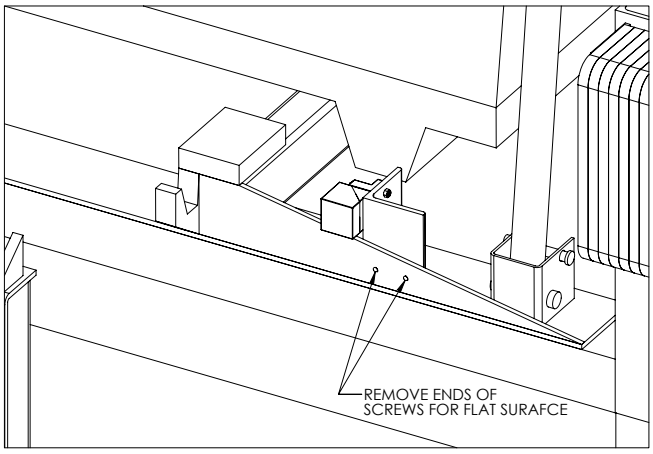
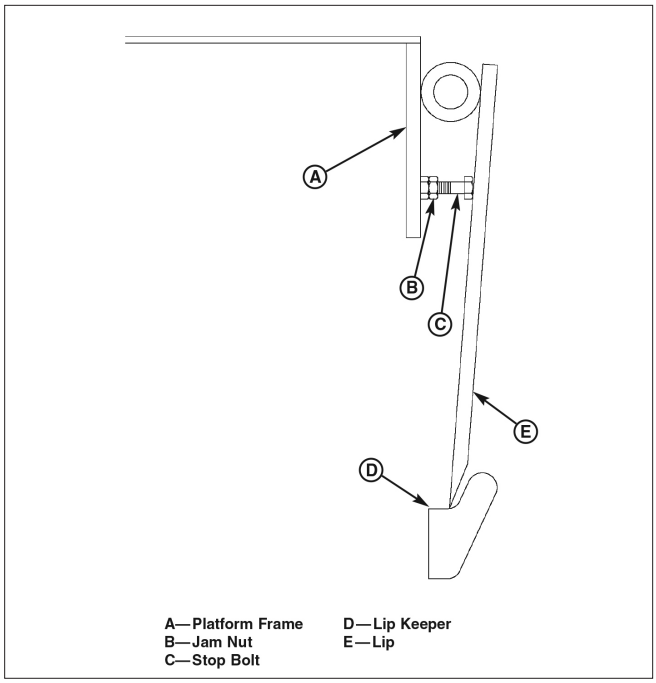


FIGURE 4.H—REMOVED ENDS OF SCREWS



A—Platform Frame
B—Jam Nut
C—Stop Bolt
D—Lip Keeper
E—Lip

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 ELECTRICAL CONNECTIONS

For standard electrical component installation information, reference product Installation Manual. See table below for correct Owner's Manual Number.

Product	Owner's Manual Number
OmniLock™	IMAR-012-000
Lock-Up™	MF4-158-000
Lock & Load™	MF2-093-000
Truck Lock™ – Low Profile	NT-0-351
Truck Lock™ – Standard Profile	NT-0-350
NHS Hydraulic Dock Leveler	4111-0018-N
NAS Air Powered Dock Leveler	4111-0021-N

NOTE:
Interlocked dock leveler and/or overhead door should be in the stored and/or closed position when turning on the Combination Control Box for the first time.

Disclosure:

- All graphics in the "INSTALL ELECTRICAL COMPONENTS" section are shown for representation.
- Actual TB1 and Relay Rail components and wire colors may differ.
- Terminal block labels will not differ.

⚠ DANGER

Make sure that the power source has been locked out and tagged according to OSHA regulations and approved local electrical codes.

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS

4.4.a CONTROL BOX WIRING - CB-62 (RESTRAINT WIRING)

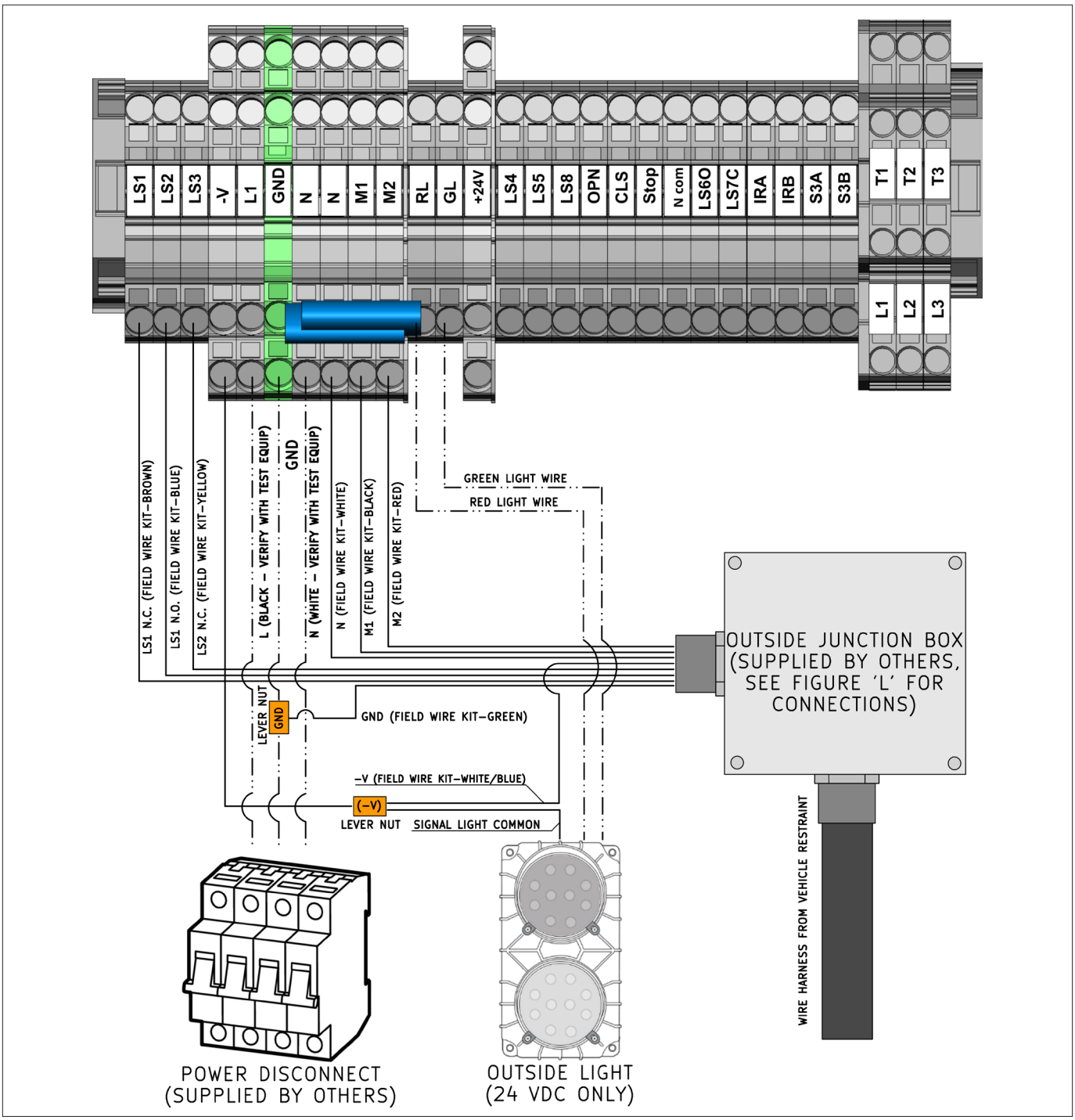


FIGURE 4.J—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS CONT.

4.4.b CONTROL BOX WIRING - CB-62 (DOOR INTERLOCK WIRING)

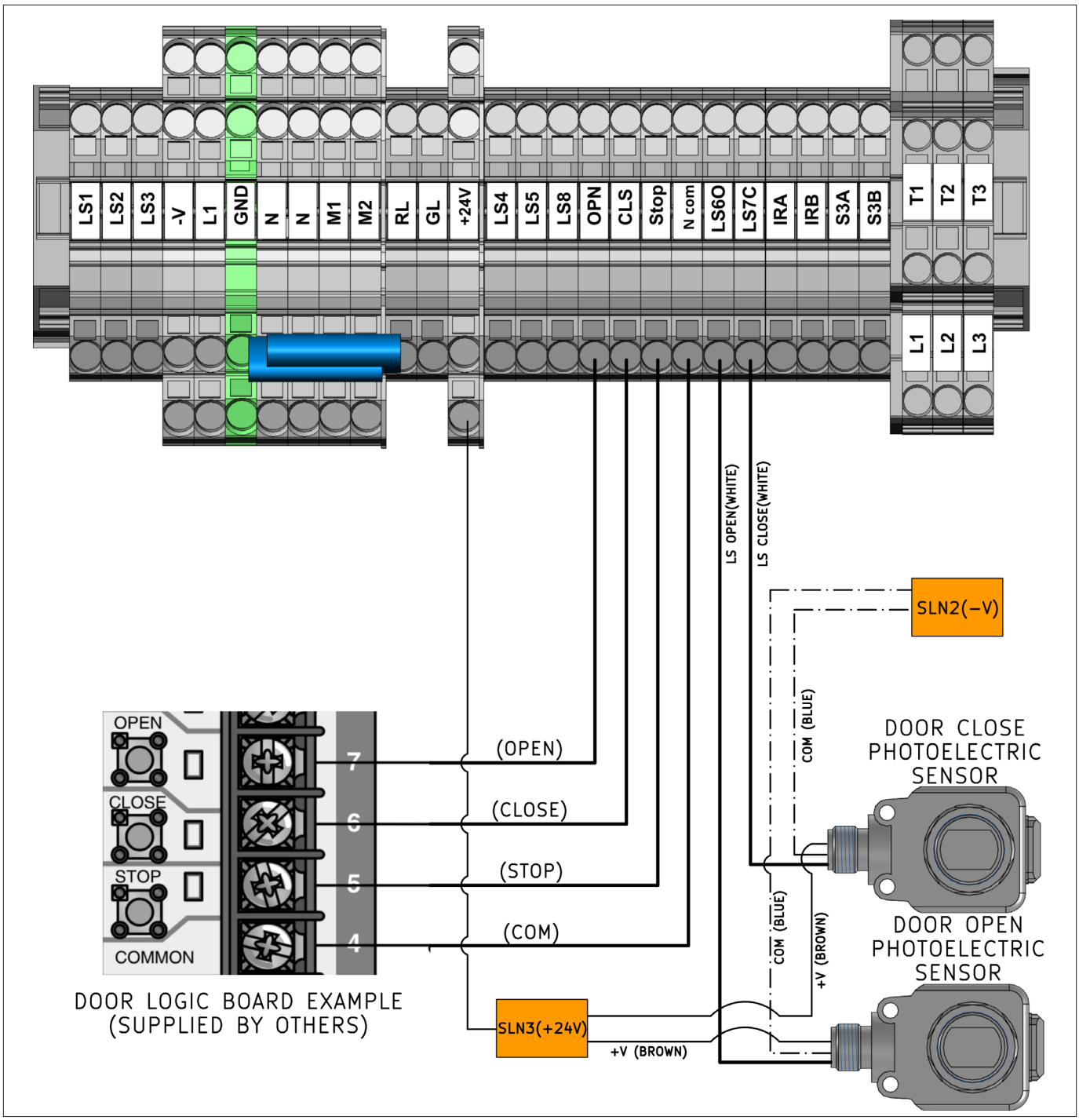


FIGURE 4.K—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS CONT.

4.4.c CONTROL BOX WIRING - CB-62 (LEVELER INTERLOCK WIRING - AIR BAG LEVELER)

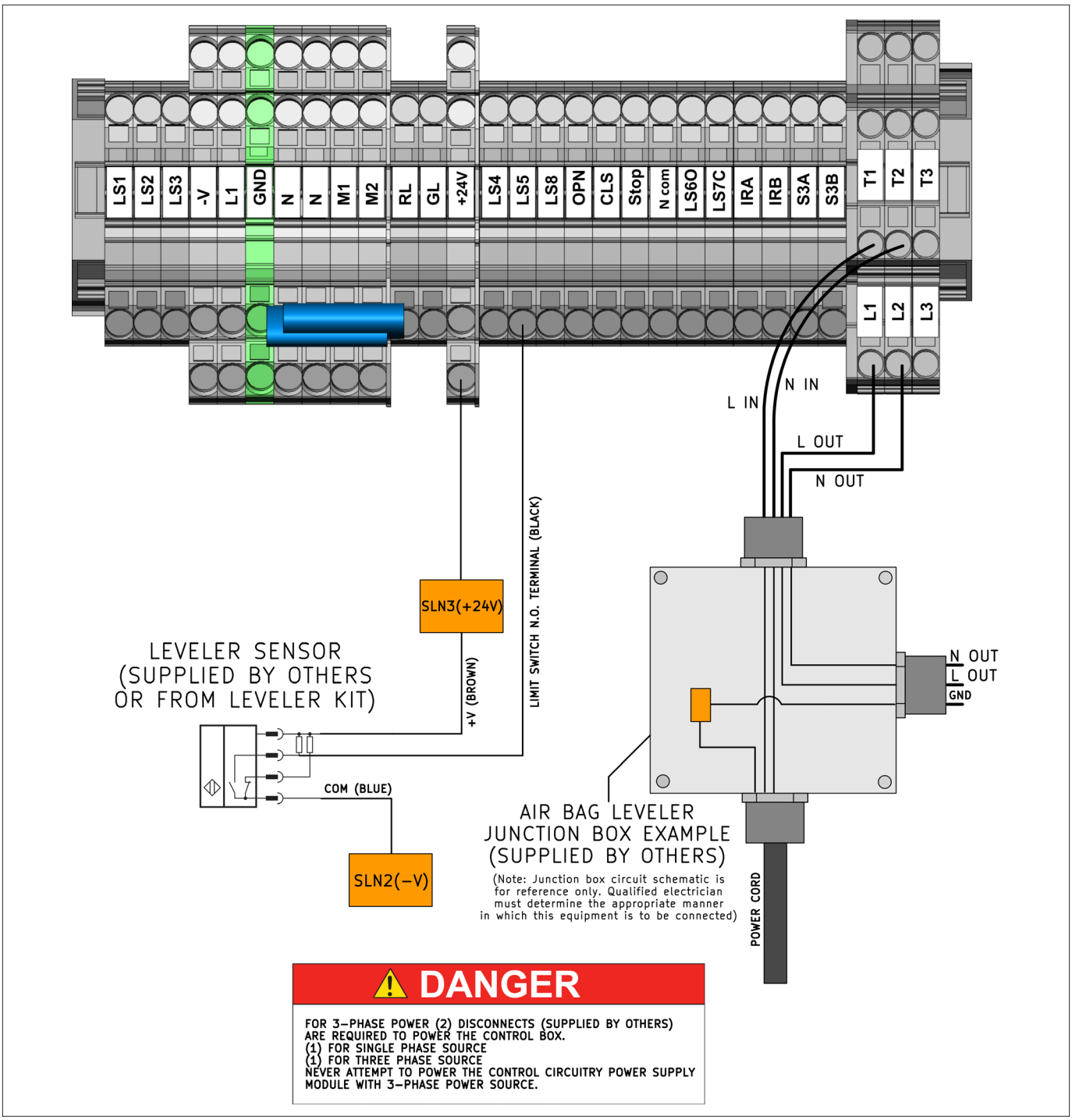


FIGURE 4.L—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS CONT.

4.4.d CONTROL BOX WIRING - CB-62 (LEVELER INTERLOCK WIRING - HYDRAULIC LEVELER WITH ARTD AND LIP CONTROL Pre-2021)

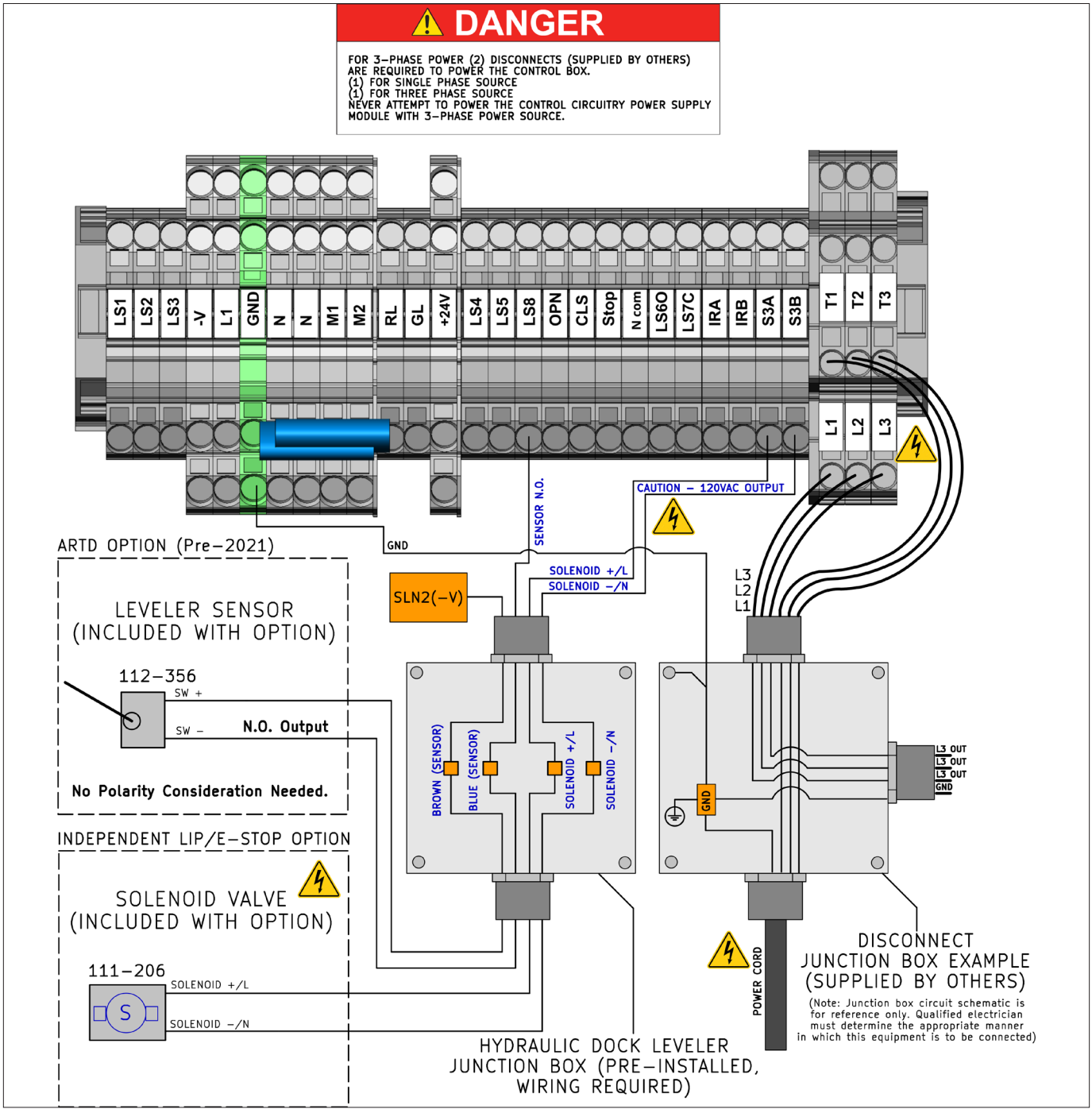


FIGURE 4.M—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS CONT.

4.4.e CONTROL BOX WIRING - CB-62 (LEVELER INTERLOCK WIRING - HYDRAULIC LEVELER WITH ARTD AND LIP CONTROL After 2021)

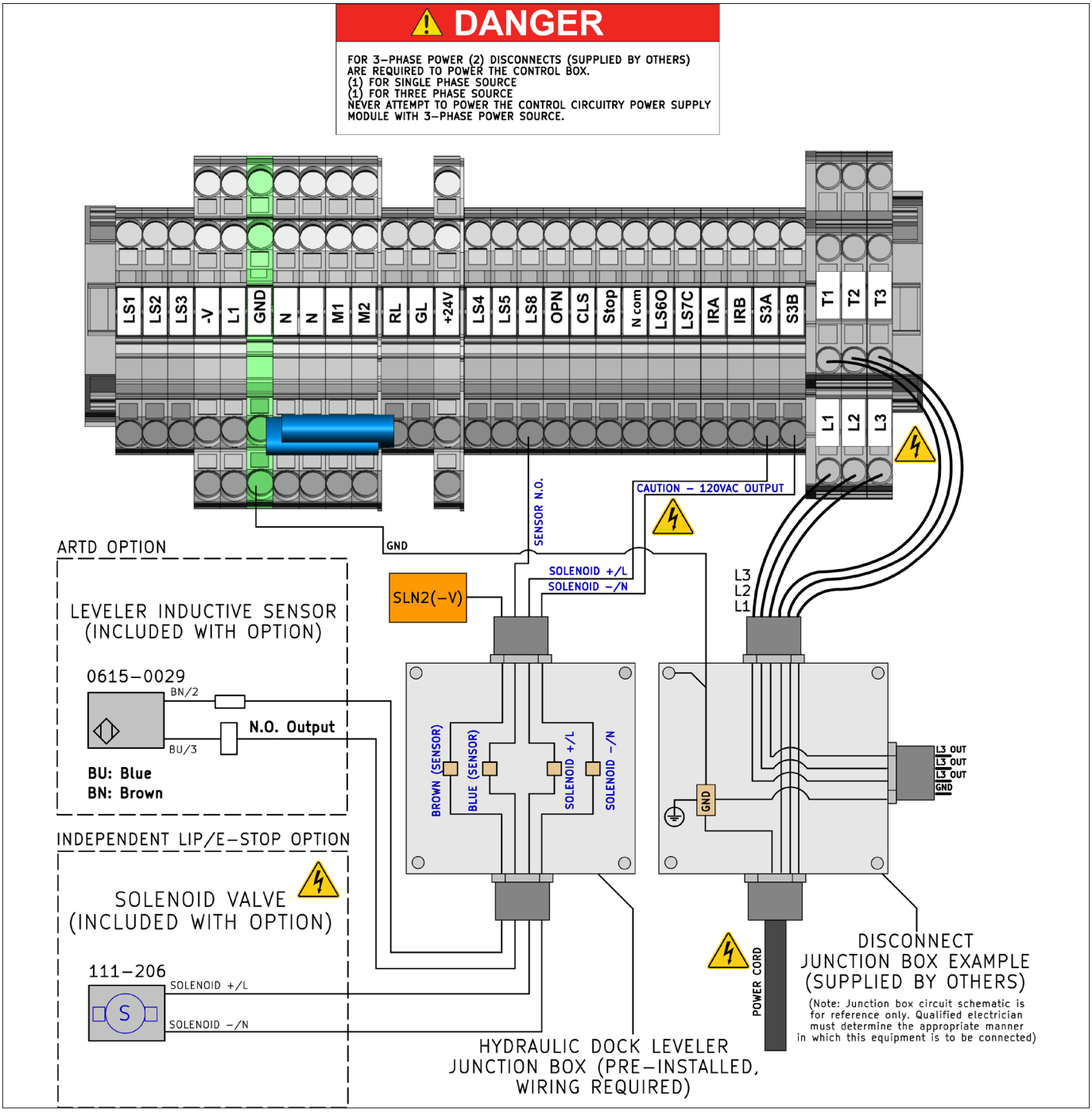


FIGURE 4.N—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS CONT.

4.4.f CONTROL BOX WIRING - CB-62 (LEVELER INTERLOCK WIRING - HYDRAULIC LEVELER ONLY)

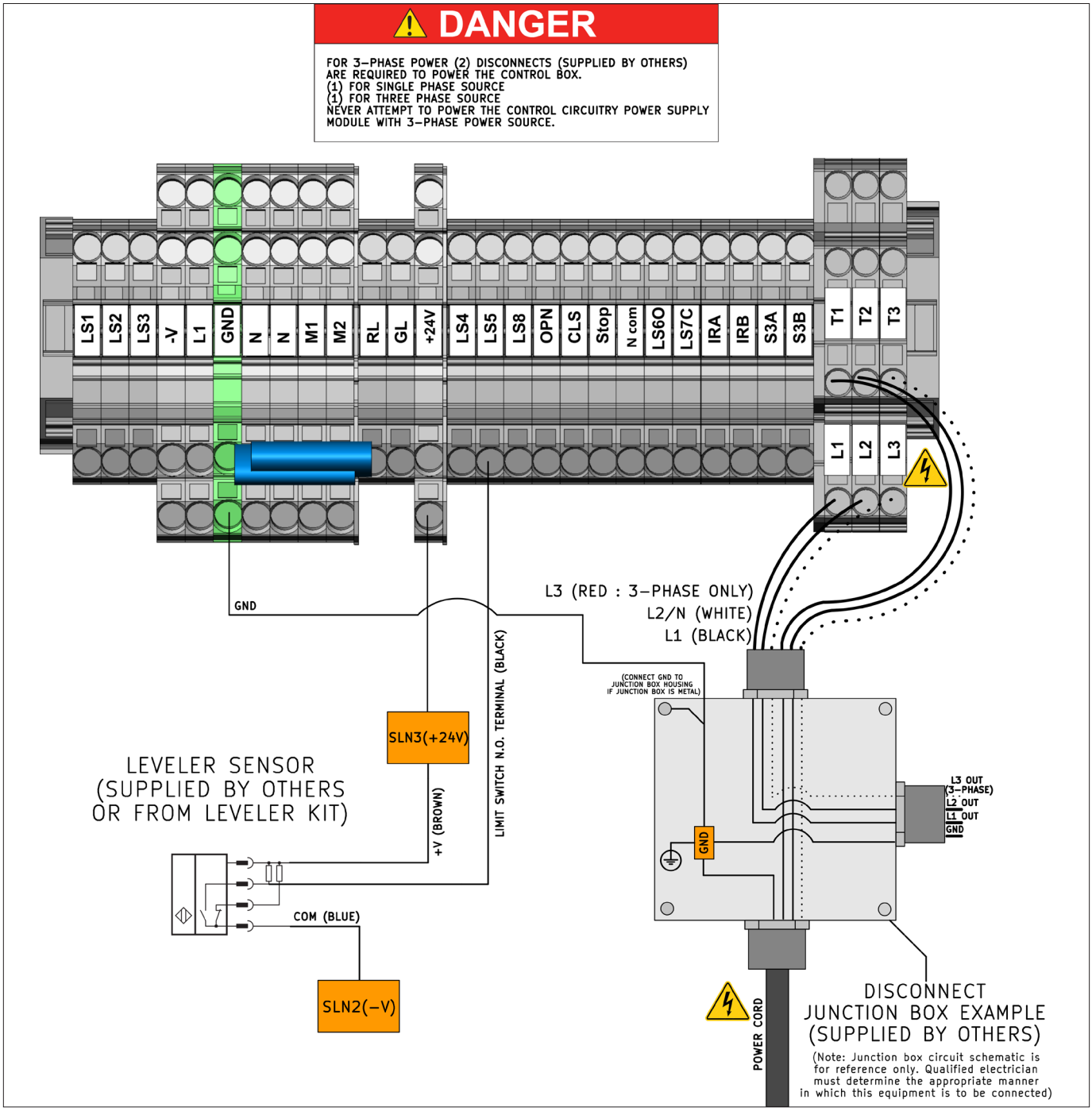


FIGURE 4.P—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

4. CB-62 INSTALLATION INSTRUCTIONS

4.4 INSTALL ELECTRICAL COMPONENTS CONT.

4.4.g CONTROL BOX WIRING - CB-62 (GATE INTERLOCK WIRING)

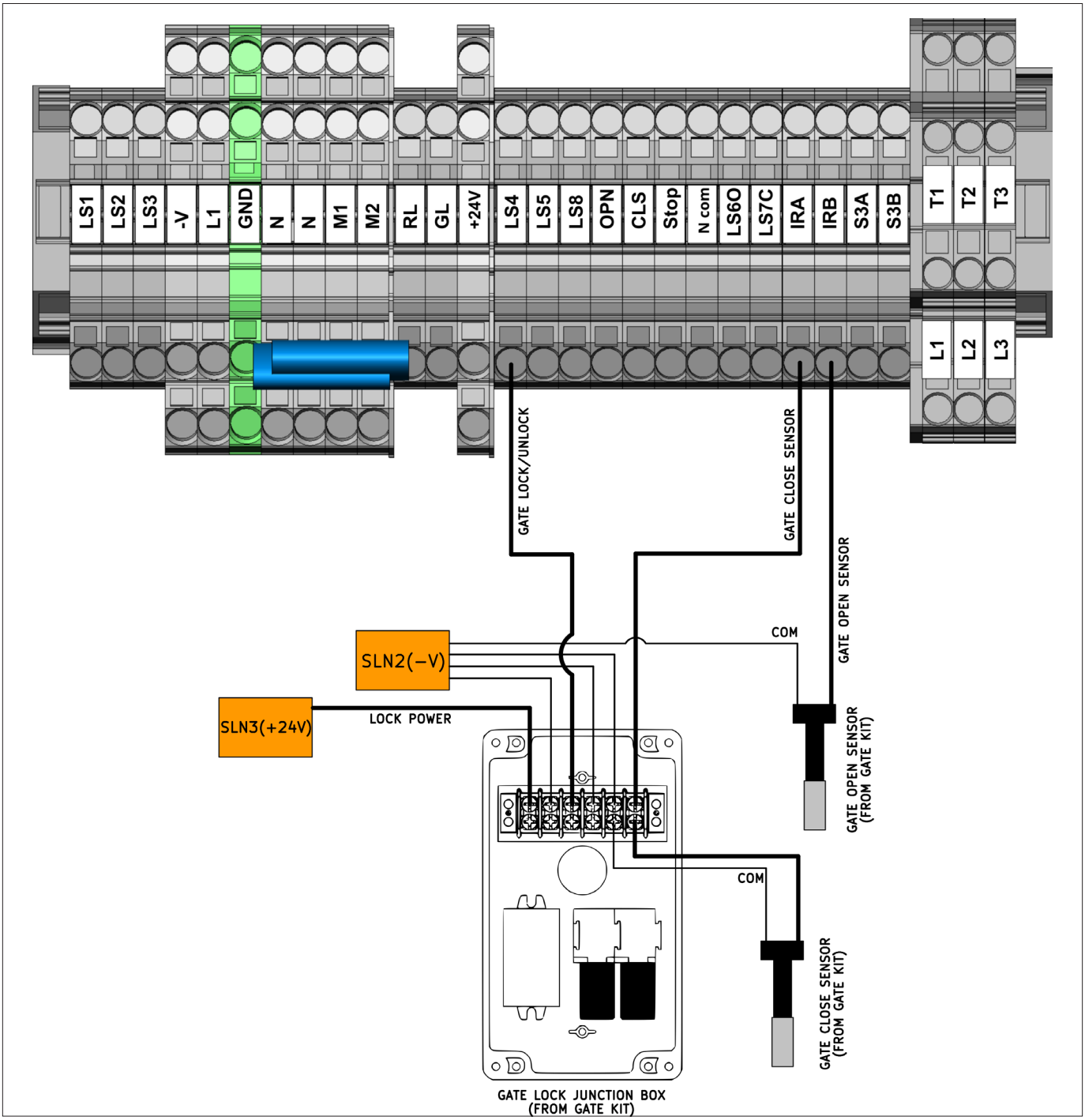


FIGURE 4.Q—CONTROL BOX TB2 INTERLOCKED WIRING SCHEMATIC (CB-61-C)

4. CB-62 INSTALLATION INSTRUCTIONS

4.5 RESTRAINT WIRING DIAGRAM

CONTROL BOX WIRING – HYDRAULIC DOCK LEVELER MOTOR

Verify Part Number located on door inside control box.

If the control box is a **CB-XXXXXX1 OR 3XX** make wire connections per Figure M.

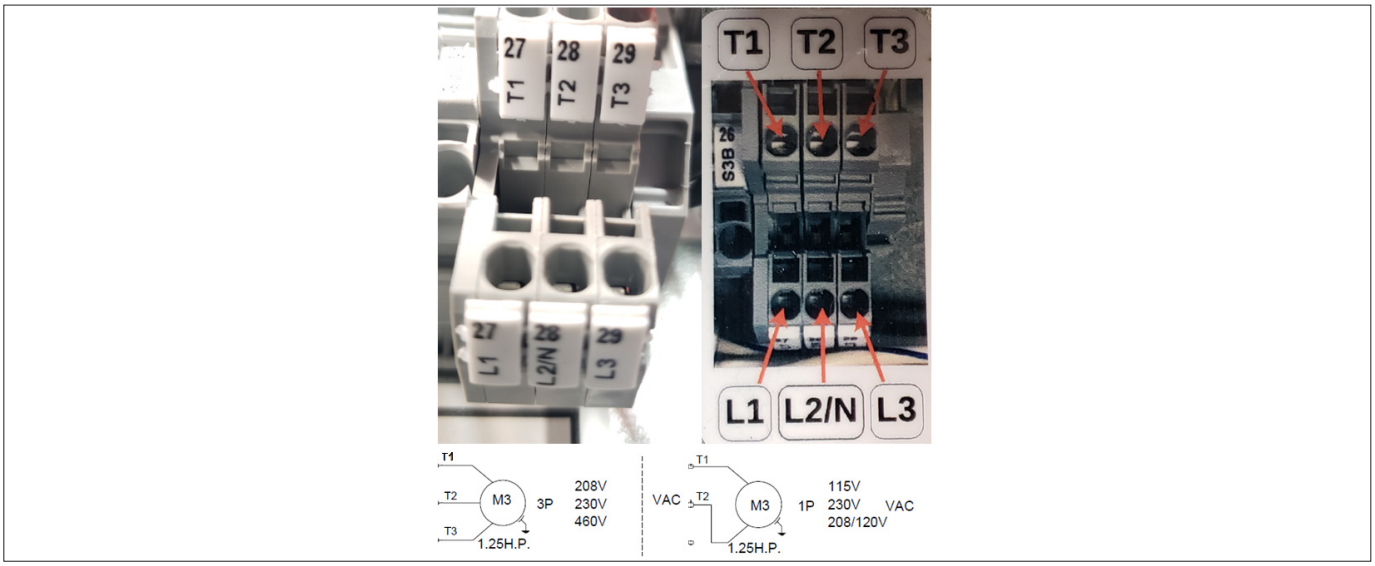


FIGURE 4.R—HYDRAULIC DOCK LEVELER MOTOR CONTROL BOX WIRING SCHEMATIC

CONTROL BOX WIRING – AIR BAG DOCK LEVELER MOTOR

Verify Part Number located on door inside control box.

If the control box is a **CB-XXXXXXAXX** make wire connections per Figure N.

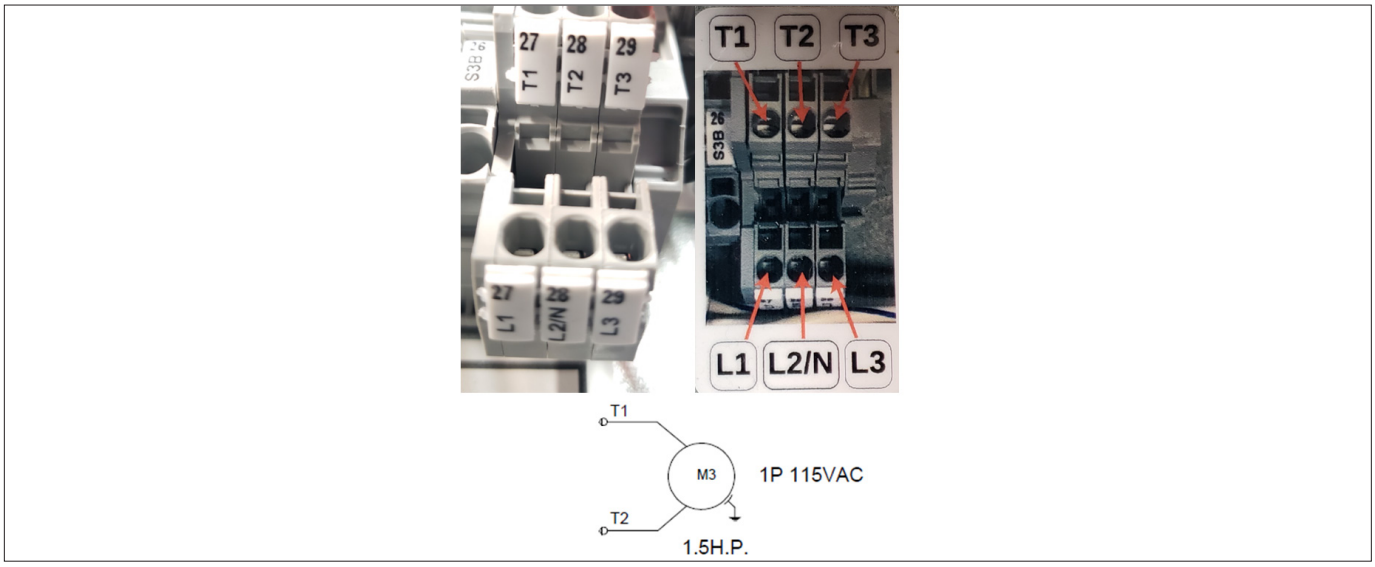


FIGURE 4.S—AIR BAG DOCK LEVELER MOTOR CONTROL BOX WIRING SCHEMATIC

4. CB-62 INSTALLATION INSTRUCTIONS

4.6 DOOR SENSOR WIRING DIAGRAM

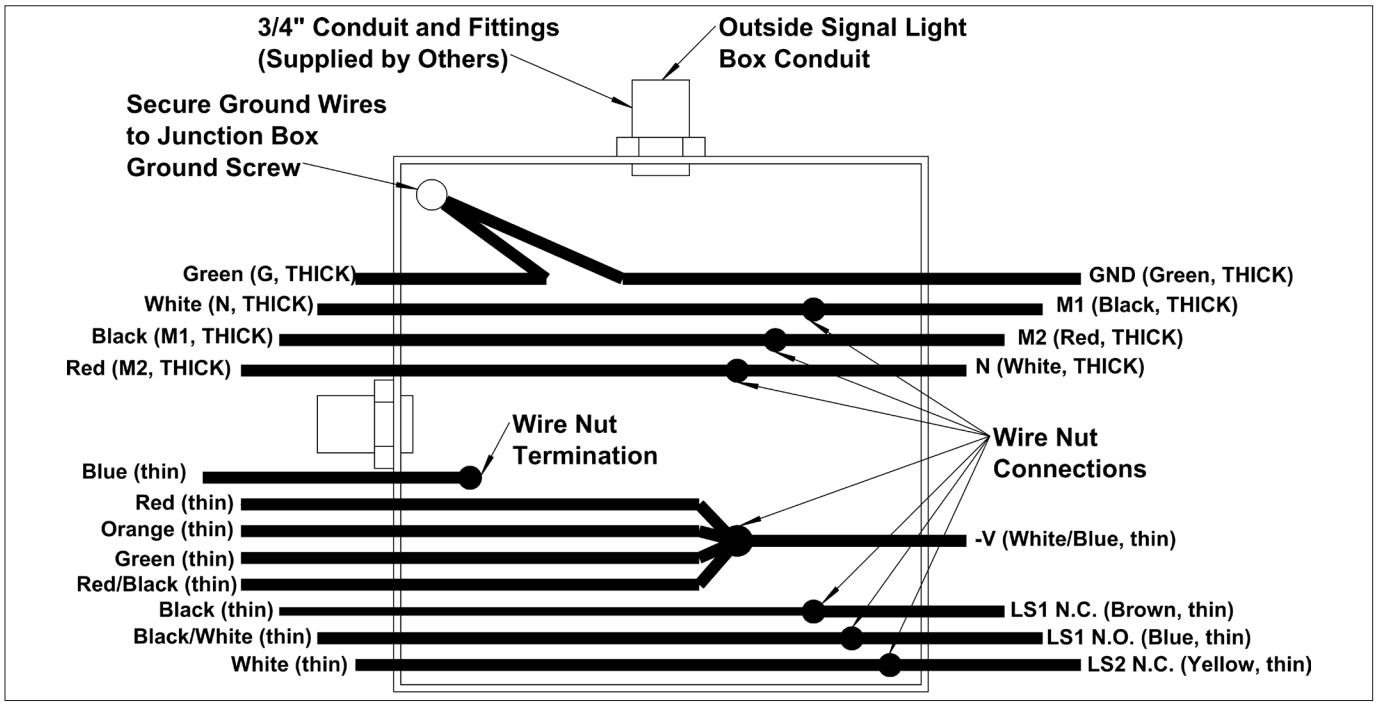


FIGURE 4.T—OUTSIDE JUNCTION BOX

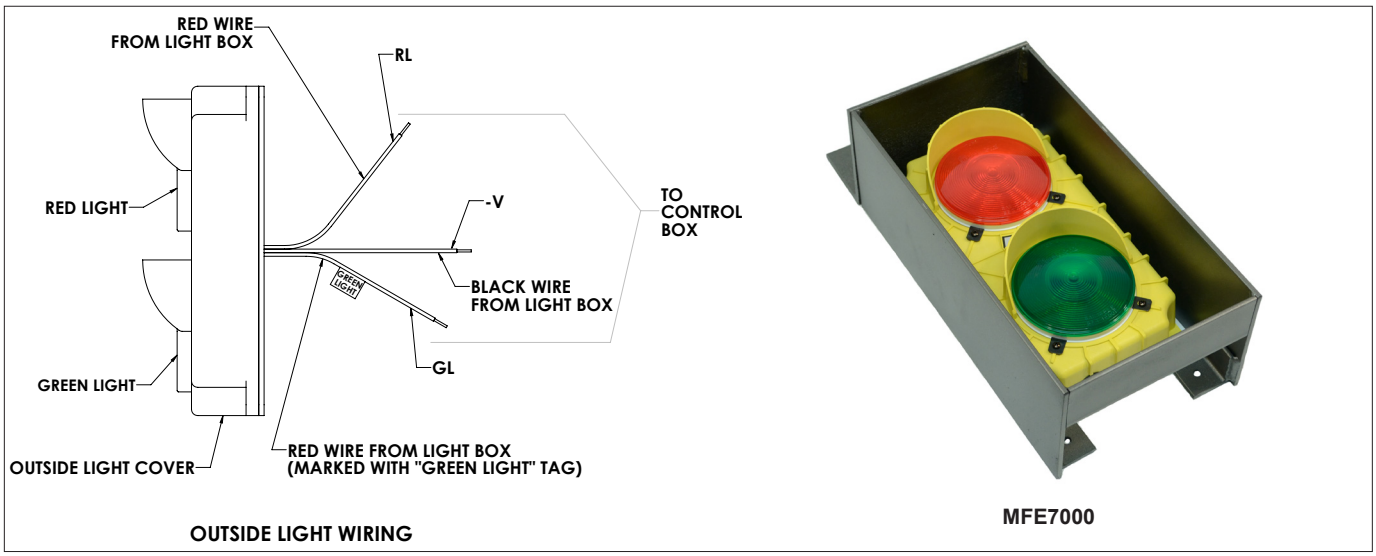


FIGURE 4.U—OUTSIDE SIGNAL LIGHT WIRING

⚠ CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

4. CB-62 INSTALLATION INSTRUCTIONS

4.7 PUT NEW DOCK LEVELER INTO SERVICE

Read and understand the PRECAUTIONS/SAFETY sections of the appropriate original equipment manufacturer (OEM) Owner's/User's Manual for the Dock Leveler listed below that is interfaced with this Combination Control Box.

- **Hydraulic Dock Leveler** Manual No. 4111-0018.
- **Air Bag Dock Leveler** Manual No. 4111-0021.

Utilize the procedure specified in the "Put New Dock Leveler Into Service" section of the appropriate publication listed above with the exception of substituting the process detailed below for step #4.

1. Remove all sources of electrical power to the control box and utilize an OSHA approved Lockout/Tagout system.

2. Power-Up combination Control Box.
   a. Unlatch metal clips on the right side of control box holding the door closed.
   b. Open the door of the control box.
   c. Turn on the circuit breaker by flipping switch upward.
   d. Close the door of the control box.
   e. Re-latch the metal clips to secure the door.
   f. Remove protective film from PLC display.

3. Energize control box by turning on power at all external disconnects.

4. Enter Maintenance Mode on the Combination Control Box.
   a. Depress the "HORN OVER-RIDE" button (#0).
   b. Enter the Maintenance code 28252 and then press "ENTER".
      i. If the wrong code was entered, the "Wrong PW: Reenter Or wait" display will appear. On this display, repeat step 4 to enter maintenance mode.
      ii. Or if no further input is completed within 30 seconds, the "Wrong PW: Reenter Or wait" display will clear and the screen will return to the previous display.

5. Use "BACK" button until display shows "Operate Leveler This Screen Only".
   a. This display allows independent use of the dock leveler.
      i. If the combination control box also controls overhead door, to open Overhead Door depress the "BACK" button once.
      ii. Display will show "Operate Door This Section Only"
      iii. Depress the "Door ↑3" button.
      iv. Once overhead door is fully open, depress "NEXT" button to "Operate Leveler This Screen Only.

NOTE: Automatic return to dock (ARTD) is automatically disabled when in maintenance mode. To test ARTD proceed to section: ARTD OPERATION.

6. Utilize the process detailed below after completing the requirements of the "Put New Dock Leveler Into Service" section of the OEM Owner's/User's Manual for the Dock Leveler.

4. CB-62 INSTALLATION INSTRUCTIONS

4.7 PUT NEW DOCK LEVELER INTO SERVICE CONT.

10. Exiting Maintenance Mode on the Combination Control Box.

    Key Point: This procedure can be done on any maintenance screen.

    a. If combination control box also controls overhead door, the overhead door must be closed before exiting maintenance mode.
    b. To close Overhead Door depress the "BACK" button once.
    c. Display will show "Operate Door This Screen Only".
    d. Depress the "Door ↓6" button.
    e. Once overhead door is fully closed, if not already, depress the "HORN OVER-RIDE" button (#0 button).
    f. The red light, on the control box, will start flashing if the green light was flashing or remain a constant red. This is normal to notify the end user that they are about to enter a new mode.
    g. Enter the Maintenance code 28252 and then press "ENTER".
        i. If the wrong code was entered, the "Wrong PW: Reenter Or wait" display will appear. On this display, repeat steps 10a through 10c to leave maintenance mode.
        ii. Or if no further input is completed within 30 seconds, the "Wrong PW: Reenter Or wait" display will clear and the screen will return to last display prior to entering maintenance mode.

Motor Electrical Specifications HYDRAULIC DOCK LEVELER

Motor Voltage	RPM	Hz	PHASE	AMP. DRAW MOTOR RUNNING	Elect. Serv. Amperage Req.
110/115/120	3450	60	1	14.4	30*
208	3450	60	1	7.1	20
220/230/240	3450	60	1	7.2	20
208	3450	60	3	3.6	10
220/240	3450	60	3	3.7	10
440-460-480	3450	60	3	1.8	10
575	3450	60	3	1.4	10

4. CB-62 INSTALLATION INSTRUCTIONS

4.8 LOCATION AND FUNCTION OF EACH BUTTON

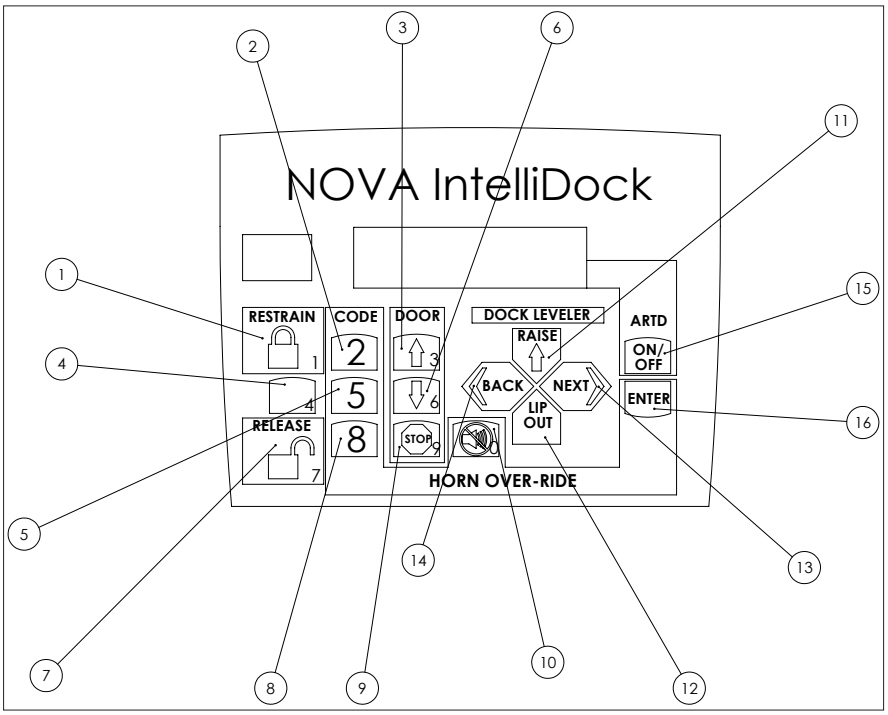


FIGURE 4.V—CONTROL BOX BUTTONS

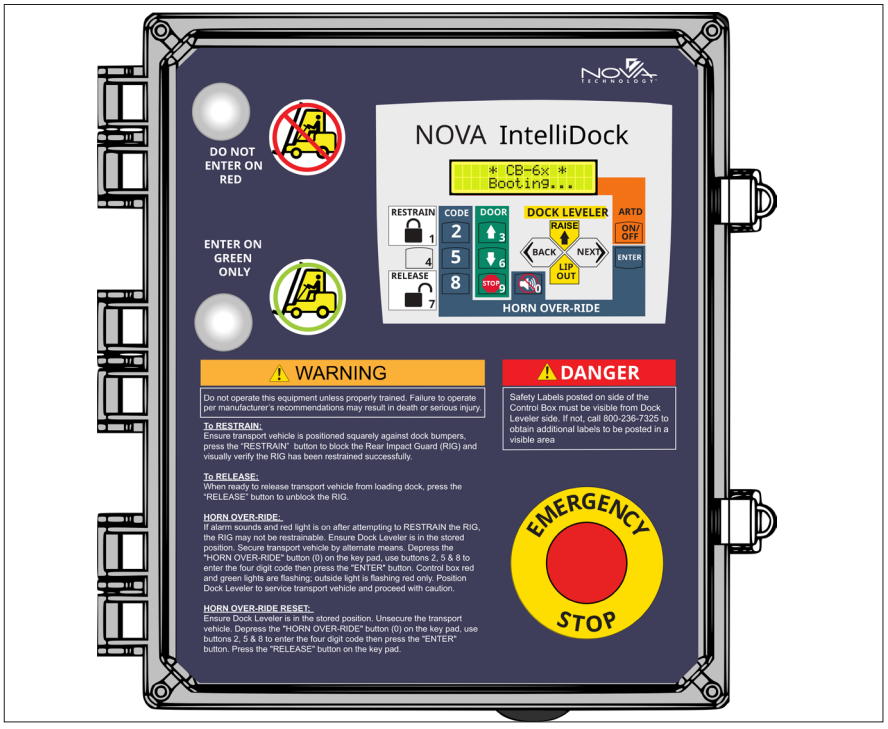


FIGURE 4.W—E-STOP AND AUDIBLE ALARM

4. CB-62 INSTALLATION INSTRUCTIONS

4.8 LOCATION AND FUNCTION OF EACH BUTTON CONT.

See Figure 4.V and 4.W for the location of each button. Function of each button is listed below.

1. Locking the vehicle restraint (RESTRAIN).
2. Used for factory HORN OVER-RIDE code.
3. Open overhead door.
4. Unused.
5. Used for factor HORN OVER-RIDE code.
6. Close overhead door.
7. Unlocking the vehicle restraint (RELEASE).
8. Used for factory HORN OVER-RIDE code.
9. Stop overhead door.
10. Enter or exit HORN OVER-RIDE / maintenance mode.

Buttons 0 through 9 can also be used to customize HORN OVER-RIDE password. See "Enter New Override Password" display in the troubleshooting section - maintenance mode procedure.

11. Up Arrow **–** Raising dock leveler (RAISE).
12. "LIP OUT" **–** Extend independent lip.
13. Right Arrow **–** Scroll to the right through maintenance mode displays (NEXT).
14. Left Arrow **–** Scroll to the left through maintenance mode displays (BACK).
15. ARTD Button **–** Turns on and off automatic return to dock (ARTD).
16. Enter **–** Confirming password and interacting with other control box messages.
17. Emergency Stop **–** Depressing will immediately stop leveler from lowering, powered door from operating, and restraint from operating.
18. HORN sounds when there is a fault when restraint locking or unlocking and when buttons are pressed.

5. CB-6x RESTRAINT TEST PROCEDURE

TEST OPERATION: Standard Control Box (CB-60)

This test operation is specifically for the installation instructions to verify the NOVA OmniLock™ Standard Control Box (CB-60) is working properly. If the NOVA OmniLock™ does not work properly, contact NOVA Technology.

5.1 POWER-UP

1. Power-Up
   a. Unlatch metal clips on the right side of control box holding the cover on.
   b. Open control box door and note model number located inside at bottom right corner to be used in step g below.
   c. Turn on the circuit breaker by flipping switch upward.

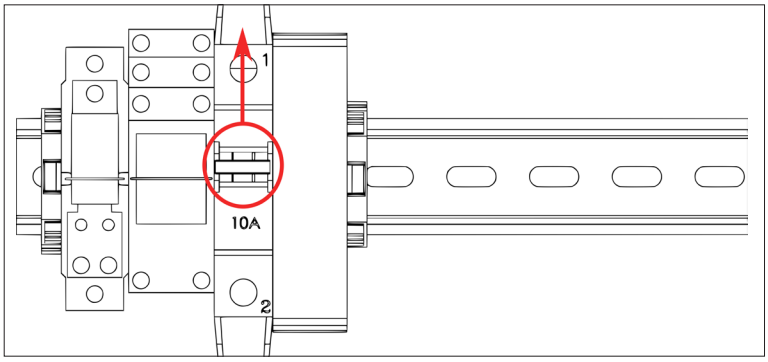


FIGURE 5.A—CIRCUIT BREAKER (CB-60)

   d. Close the cover of the control box.
   e. Re-latch the metal clips to secure the cover.
   f. Remove protective film from PLC display.
   g. Verify PLC Screen shows "CB-6x" in the left, "UNLOCKED" on the bottom left, and a number on the top right side of the display.
   h. Verify the RED light on the control box is flashing.
   i. Verify the outside GREEN light is flashing.

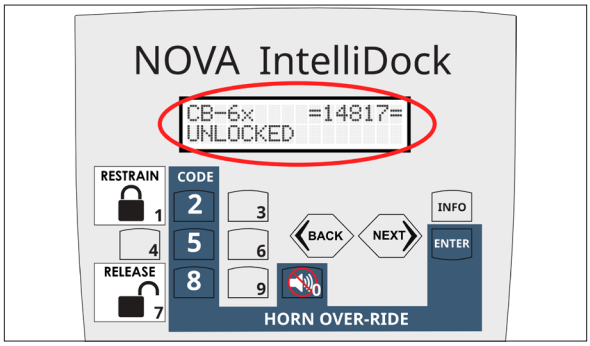


FIGURE 5.B—STANDARD PLC SCREEN

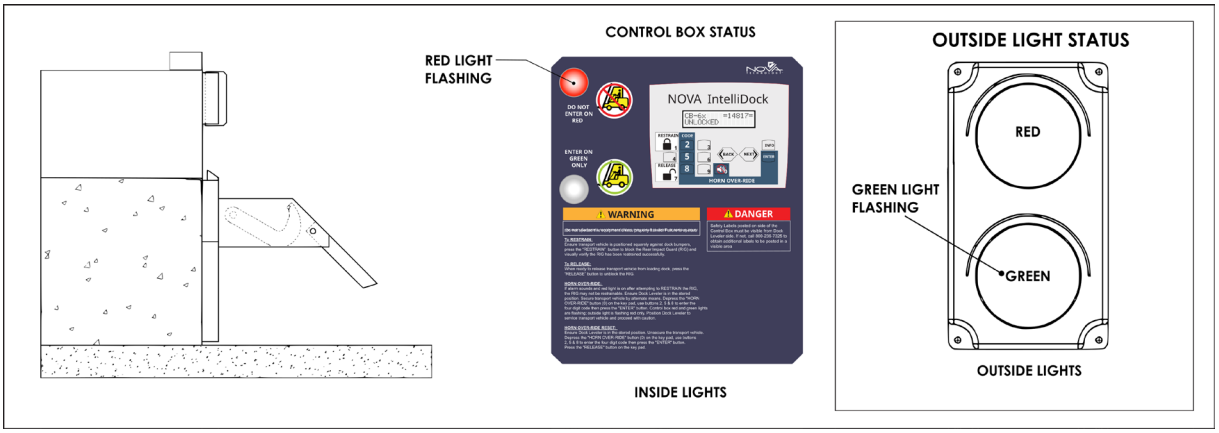


FIGURE 5.C—UNLOCKED POSITION/NO VEHICLE PRESENT

5. CB-6x RESTRAINT TEST PROCEDURE

5.2 TEST RESTRAIN

2. Test Restrain Function
   a. Depress "RESTRAIN" (#1 button).

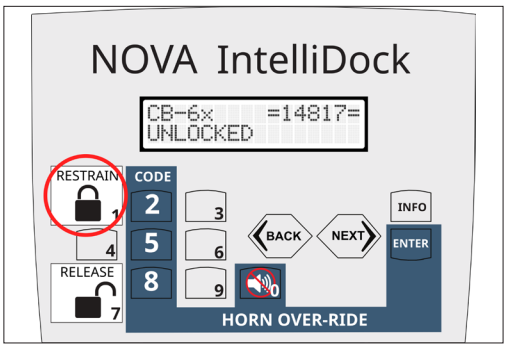


FIGURE 5.D—RESTRAIN ACTIVATION

b. Verify the hook has rotated to the up position.
c. Verify the RED light on the control box is flashing.
d. Verify the HORN is beeping at 1 second intervals.
e. Verify the outside RED light is flashing.
f. Verify the hook auto-returns to the stored position.
g. Verify the message "No RIG Press <RELEASE>" is displayed on the PLC screen. Alarm is still sounding.
h. Depress "RELEASE" to clear the message.
i. Verify the home screen is returned to, with message "CB-6x UNLOCKED..."

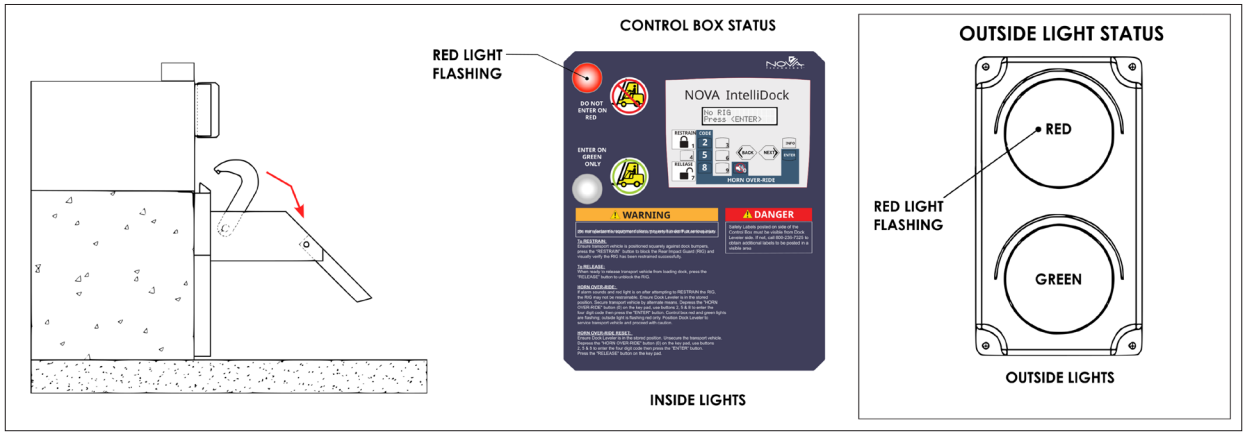


FIGURE 5.E—NO RIG PRESENT, HOOK HAS AUTOMATICALLY STORED, HORN SOUNDING

⚠WARNING

Hook will automatically store when performing this Procedure. NEVER attempt to grab the hook or move it when the hook has been raised with no RIG. A moving hook can cause serious injury.

5. CB-6x RESTRAINT TEST PROCEDURE

5.3 "HORN OVER-RIDE" MODE

3. Test HORN OVER-RIDE Function
   a. Depress the "HORN OVER-RIDE" button (#0 button).

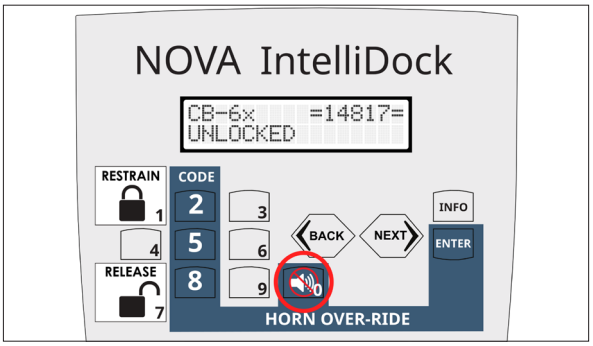


FIGURE 5.F—HORN OVER-RIDE INITIATION

   b. Verify the RED light on the control box is flashing, and a screen prompting for a password appears..

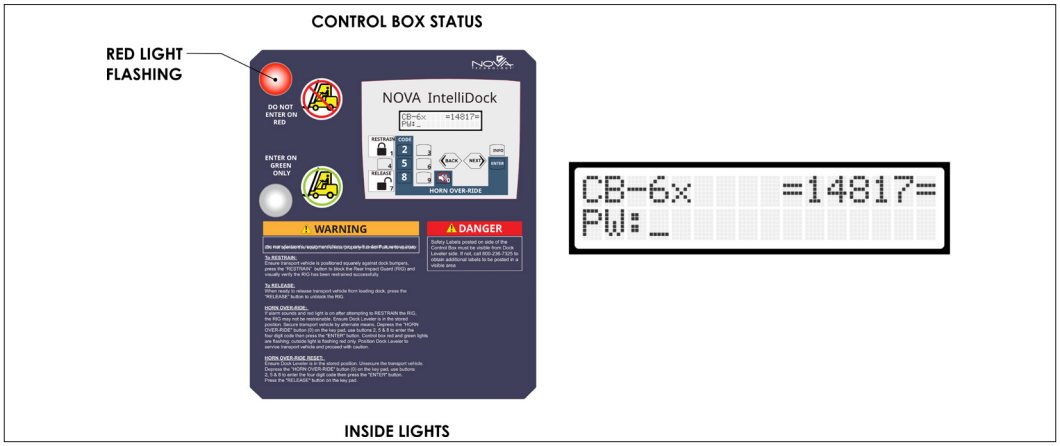


FIGURE 5.G—ENGAGING HORN OVER-RIDE CONTROL BOX LIGHT INDICATION

   c. Enter default Over-Ride code, 5528, then press "ENTER" as shown.
      i. If the wrong code was entered, the "Wrong PW: Reenter Or Wait" display will appear. On this display, repeat steps 3a through 3c to enter HORN OVER-RIDE code.
      ii. Or, if no further input is completed within 30 seconds, the "Wrong PW: Reenter Or Wait" display will clear and the screen will return to last display.

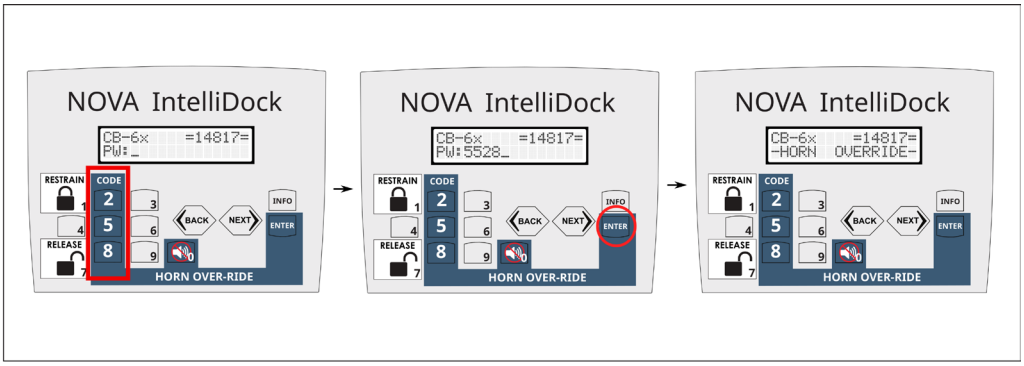


FIGURE 5.H—ENTERING HORN OVER-RIDE DIAGRAM

5. CB-6x RESTRAINT TEST PROCEDURE

5.3 "HORN OVER-RIDE" MODE CONT.

d. Verify the RED and GREEN lights on the control box are flashing.
e. Verify the outside RED light is flashing.

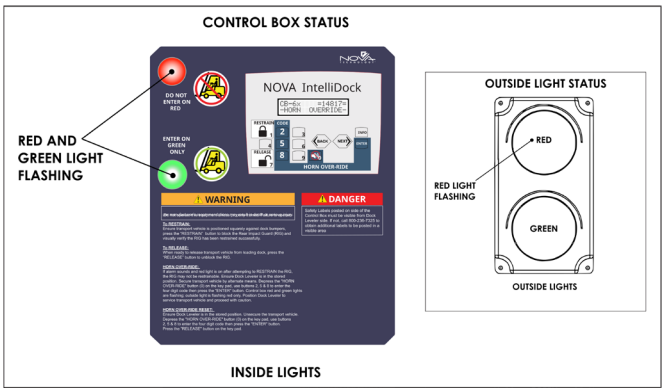


FIGURE 5.J—HORN OVER-RIDE LIGHT INDICATION

4. Turn off HORN OVER-RIDE Function
   a. Verify the RED and GREEN lights on the control box are flashing.
   b. Depress the "HORN OVER-RIDE" button (#0 button).

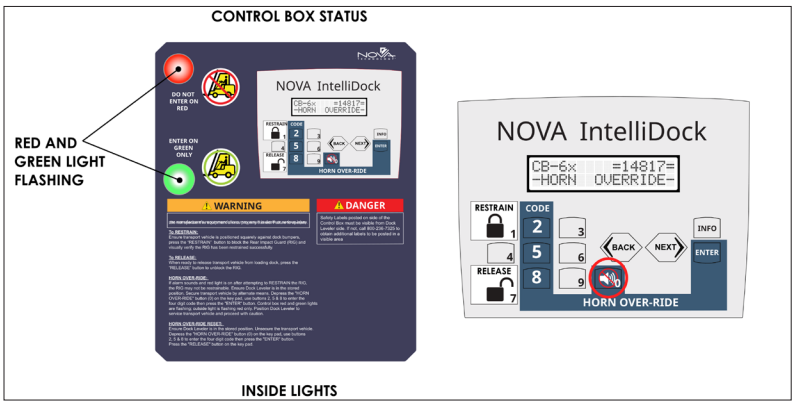


FIGURE 5.K—DISENGAGING HORN OVER-RIDE

c. Enter default Over-Ride code, 5528, then press "ENTER".
   i. If the wrong code was entered, the "Wrong PW: Reenter Or Wait" display will appear. On this display, repeat steps 4a through 4c to exit HORN OVER-RIDE.
   ii. Or, if no further input is completed within 30 seconds, the "Wrong PW: Reenter Or Wait" display will clear and the screen will remain in HORN OVER-RIDE.

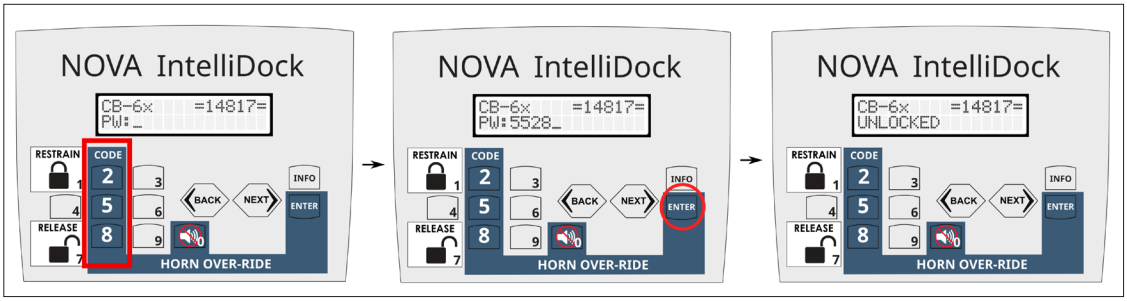


FIGURE 5.L

5. CB-6x RESTRAINT TEST PROCEDURE

5.4 RESTRAIN-RELEASE CYCLE

5. Test Restrain-Release Cycle
   a. Verify the RED light on the control box is flashing, GREEN outside is flashing.
   b. If available, place a wheel chock on the top of the carriage, as shown in Figure 5.M. If a wheel chock is not available, find an alternative means of stopping the hook from over-travel. NEVER ATTEMPT TO STOP HOOK USING ANY PART OF YOUR BODY. (If you do not perform this part of the procedure, the hook will over-travel and automatically store itself.)
   c. Depress "RESTRAIN" (#1 button).

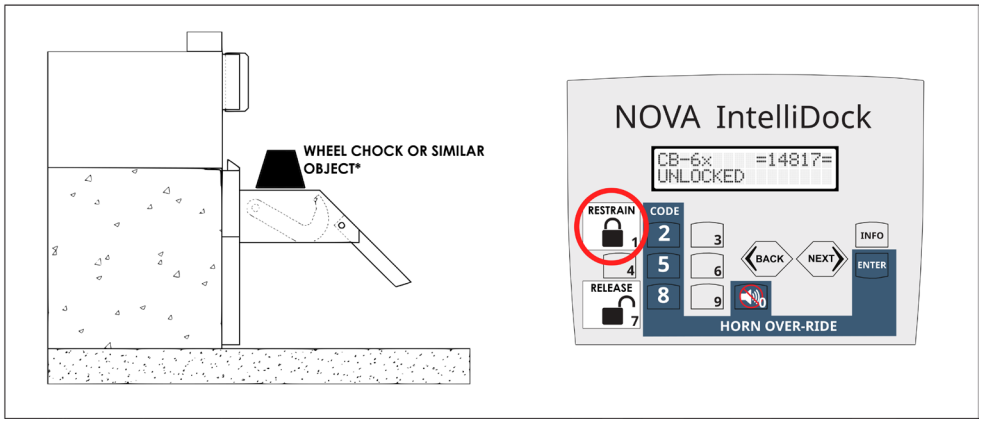


FIGURE 5.M—RESTRAINT CONFIGURATION AND PLC RESTRAIN BUTTON

   d. Verify the hook has rotated upward and above the safety stops, while not over-rotating. If an over-rotation occurs, the hook will automatically store itself. Reposition the hooking object and return to step (a).
   e. Verify the GREEN light on the control box is flashing.
   f. Verify the outside RED light is flashing.
   g. Verify that the display reads "TRAILER LOCKED" with a timer counting up next to it, as shown in Figure 5.N.

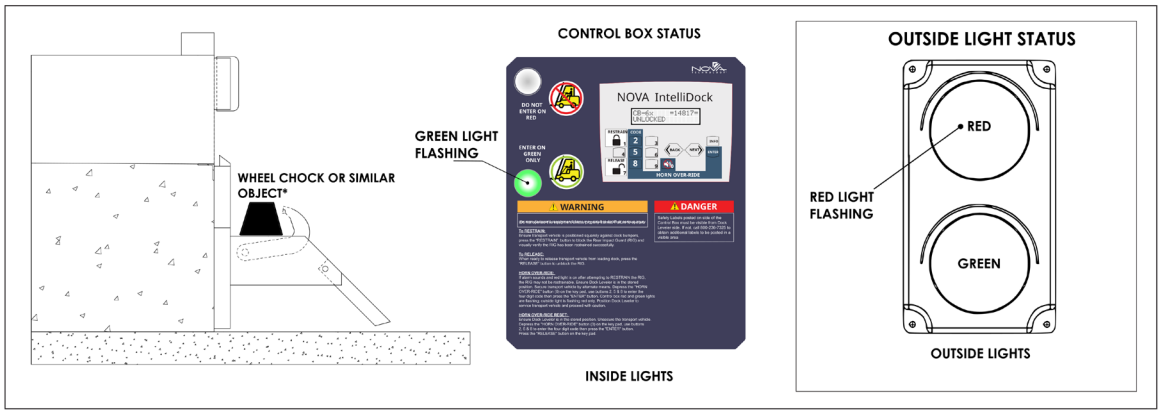


FIGURE 5.N—RESTRAINT LOCKED

5. CB-6x RESTRAINT TEST PROCEDURE

5.4 RESTRAIN-RELEASE CYCLE CONT.

h. To release the hook, depress "RELEASE" (#7 button).
i. Upon successful unlock, verify the hook has rotated downward, and the screen will read "CB-6x UNLOCKED..."
j. Verify the RED light on the control box is flashing.
k. Verify the outside GREEN light is flashing.
l. Remove the hooking object only after these conditions are observed, and confirm the carriage is clear of any foreign objects.

5. CB-6x RESTRAINT TEST PROCEDURE

5.5 INTERLOCK CONTROL BOX OPERATION OVERVIEW

CB-61-A:

- RESTRAIN/RELEASE functional only with dock door closed.
  - Control box fault requires dock door to be closed before entering HORN OVER-RIDE state.
- OPEN dock door functional only with any one of conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.
- HORN OVER-RIDE state enables dock door OPEN/CLOSE functionality.

CB-61-B:

- RESTRAIN functional regardless of dock door position.
- RELEASE functional only with dock door closed.
  - Control box fault requires dock door to be closed before entering HORN OVER-RIDE state.
- OPEN dock door functional only with any one of conditions listed below:
  - Control box flashing GREEN light.
  - Control box flashing RED light.
  - Control box HORN OVER-RIDE state.

CB-61-C:

- RESTRAIN/RELEASE functional only with dock leveler stored.
  - Control box fault requires dock leveler to be stored before entering HORN OVER-RIDE state.
- RAISE dock leveler functional only with any one of the conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.
- HORN OVER-RIDE state enables dock leveler activation.

CB-61-G:

- RESTRAIN/RELEASE functional only with gate closed.
  - Control box fault requires gate to be closed before entering HORN OVER-RIDE state.
- OPEN gate possible only with any one of the conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.
- HORN OVER-RIDE state enables gate opening.

5. CB-6x RESTRAINT TEST PROCEDURE

TEST OPERATION: Interlocked Control Box (CB-61)

This test operation is specifically for the installation instructions to verify the NOVA OmniLock™ Interlocked Control Box (CB-61) is working properly. If the NOVA OmniLock™ does not work properly, contact NOVA Technology.

5.6 RESTRAIN-RELEASE CYCLE WITH INTERLOCKING CONDITION

1. Power-Up
   a. Unlatch metal clips on the right side of control box holding the cover on.
   b. Open control box door and note model number located inside at bottom right corner to be used in step g below.
   c. Turn on the circuit breaker by flipping switch upward.

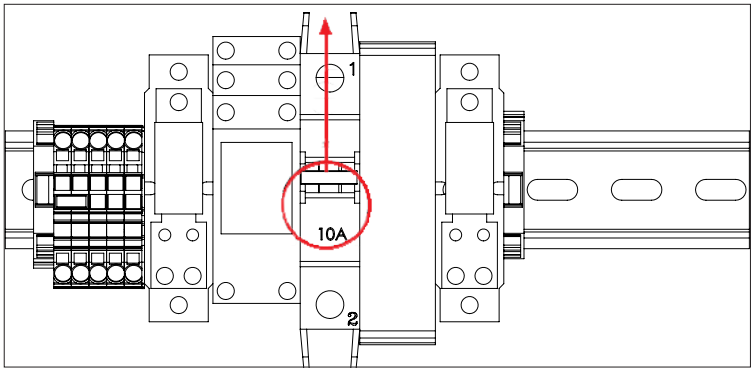


FIGURE 5.P—CIRCUIT BREAKER (CB-61)

   d. Close the cover of the control box.
   e. Re-latch the metal clips to secure the cover.
   f. Remove protective film from PLC display.
   g. Verify PLC screen shows one of the options listed below:
      - 14117
      - 14217
      - 14317
      - 14417
   h. Verify the RED light on the control box is flashing.
   i. Verify the outside GREEN light is flashing.

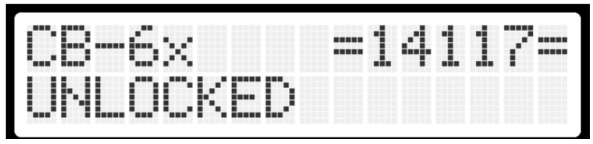


FIGURE 5.Q—EXAMPLE OF DOOR INTERLOCK OPERATING SCREEN

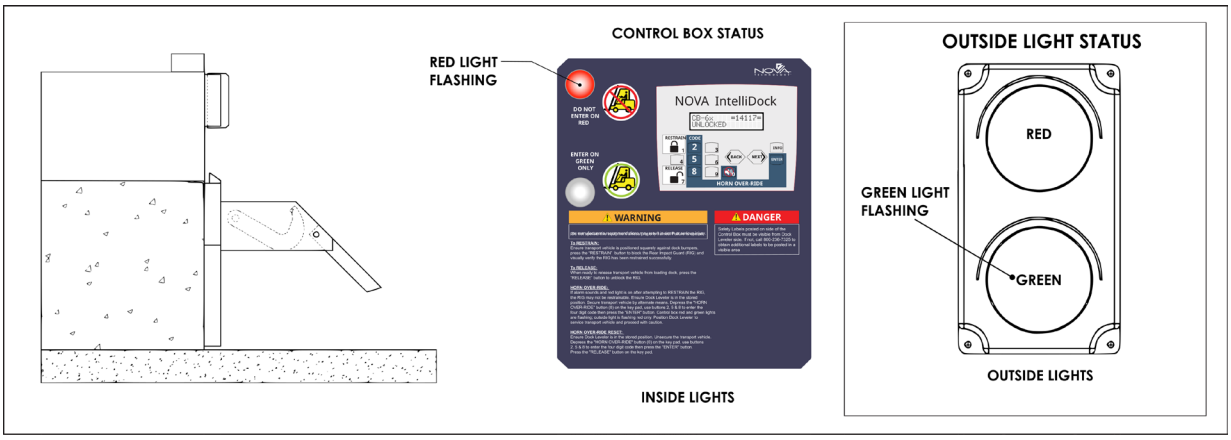


FIGURE 5.R—UNLOCKED POSITION/NO VEHICLE PRESENT

5. CB-6x RESTRAINT TEST PROCEDURE

5.6 RESTRAIN-RELEASE CYCLE WITH INTERLOCKING CONDITION CONT.

2. Test Restrain-Release Cycle

Verify Part Number located on door inside control box.

a. Interlocked Control Box Models requires dock equipment to be positioned as listed below:
   - CB-61-A, dock door must be closed.
   - CB-61-B, dock door may be open or closed.
   - CB-61-C, dock leveler must be stored.

b. Verify the RED light on the control box is flashing, GREEN outside is flashing.

c. If available, place a wheel chock on the top of the carriage, as shown in figure AF. If wheel chock is not available, find an alternative means of stopping the hook from over-travel. NEVER ATTEMPT TO STOP HOOK USING ANY PART OF THE BODY.

d. Depress "RESTRAIN" (#1 button).

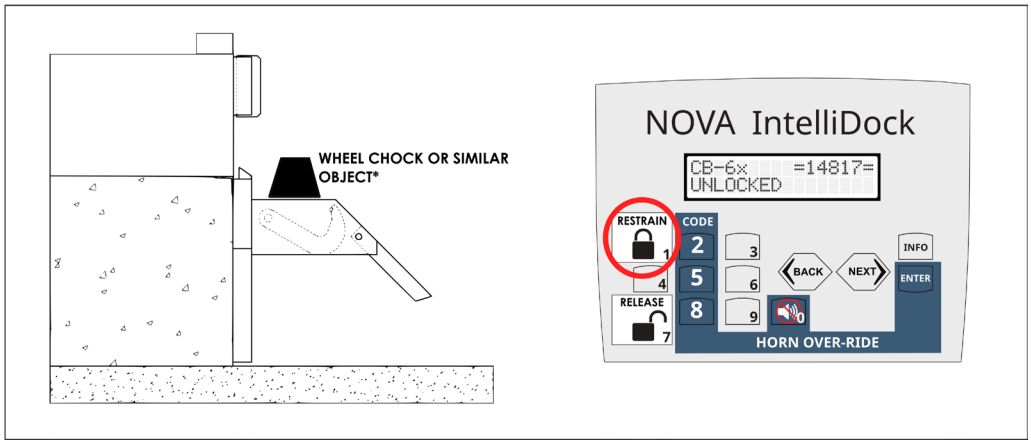


FIGURE 5.S—RESTRAIN OPERATION

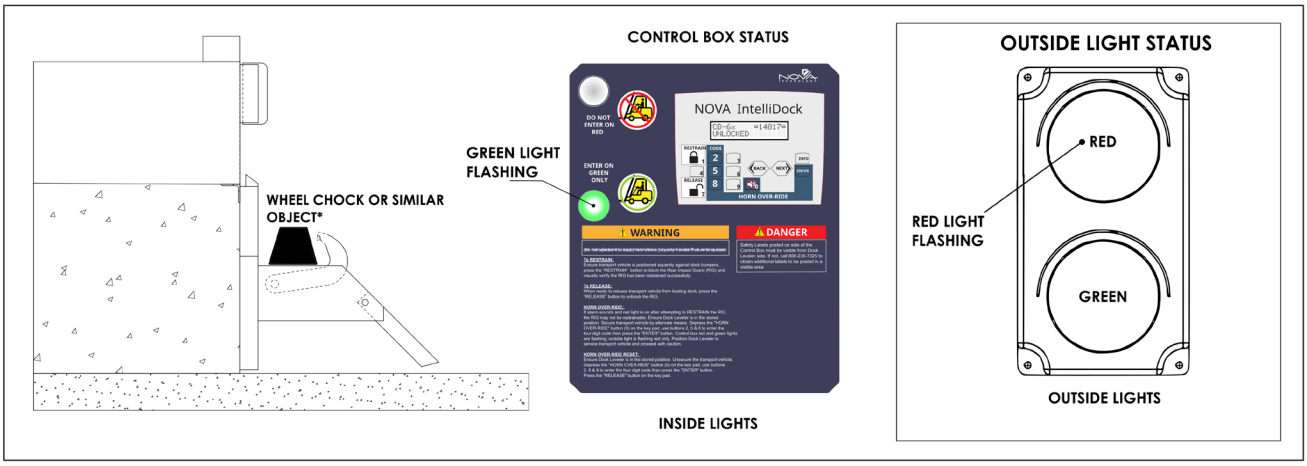


FIGURE 5.T—RESTRAIN FAULT, HORN SOUNDING

5. CB-6x RESTRAINT TEST PROCEDURE

5.6 RESTRAIN-RELEASE CYCLE WITH INTERLOCKING CONDITION CONT.

4. Test interlocked dock equipment to verify functional operation as listed below:

   CB-61-A:
   - RESTRAIN/RELEASE functional only with dock door closed.
   - OPEN dock door functional only with any one of conditions listed below:
     - Control box flashing GREEN light.
     - Control box HORN OVER-RIDE mode.
   - HORN OVER-RIDE state enables dock door OPEN/CLOSE functionality.

   CB-61-B:
   - RESTRAIN functional regardless of dock door position.
   - RELEASE functional only with dock door closed.
   - OPEN dock door functional only with any one of conditions listed below:
     - Control box flashing GREEN light.
     - Control box flashing RED light.
     - Control box HORN OVER-RIDE mode.

   CB-61-C:
   - RESTRAIN/RELEASE functional only with dock leveler stored.
   - RAISE dock leveler functional only with any one of the conditions listed below:
     - Control box flashing GREEN light.
     - Control box HORN OVER-RIDE state.
   - HORN OVER-RIDE state enables dock leveler activation.

5. Once finished testing the interlocking function, depress the "RELEASE" key (#7 button) to store the Hook. Remove the wheel chock or other blocking device before leaving the dock position. Failure to do so may result in property or vehicle damage.

6. Upon successful completion of testing, ensure dock leveler is stored, dock door is closed, control box RED light is flashing, and outside signal light is flashing GREEN light.

6. CB-61 INTERLOCK CONTROL BOX OPERATION/TESTING

5.7 IMPROPER ENGAGEMENT ZONES

WARNING

Failure of the hook to clear the upper slide-plates will result in a Control Box RED condition and the automatic storage of the hook. The Control Box will alarm and prompt the operator to acknowledge the presence of an unsafe condition. Dock Attendant shall stop Loading/Unloading process until Transport Vehicle is positioned against bumpers and Hook is reset via RESTRAIN process or securing the trailer through alternative means and entering HORN OVER-RIDE.

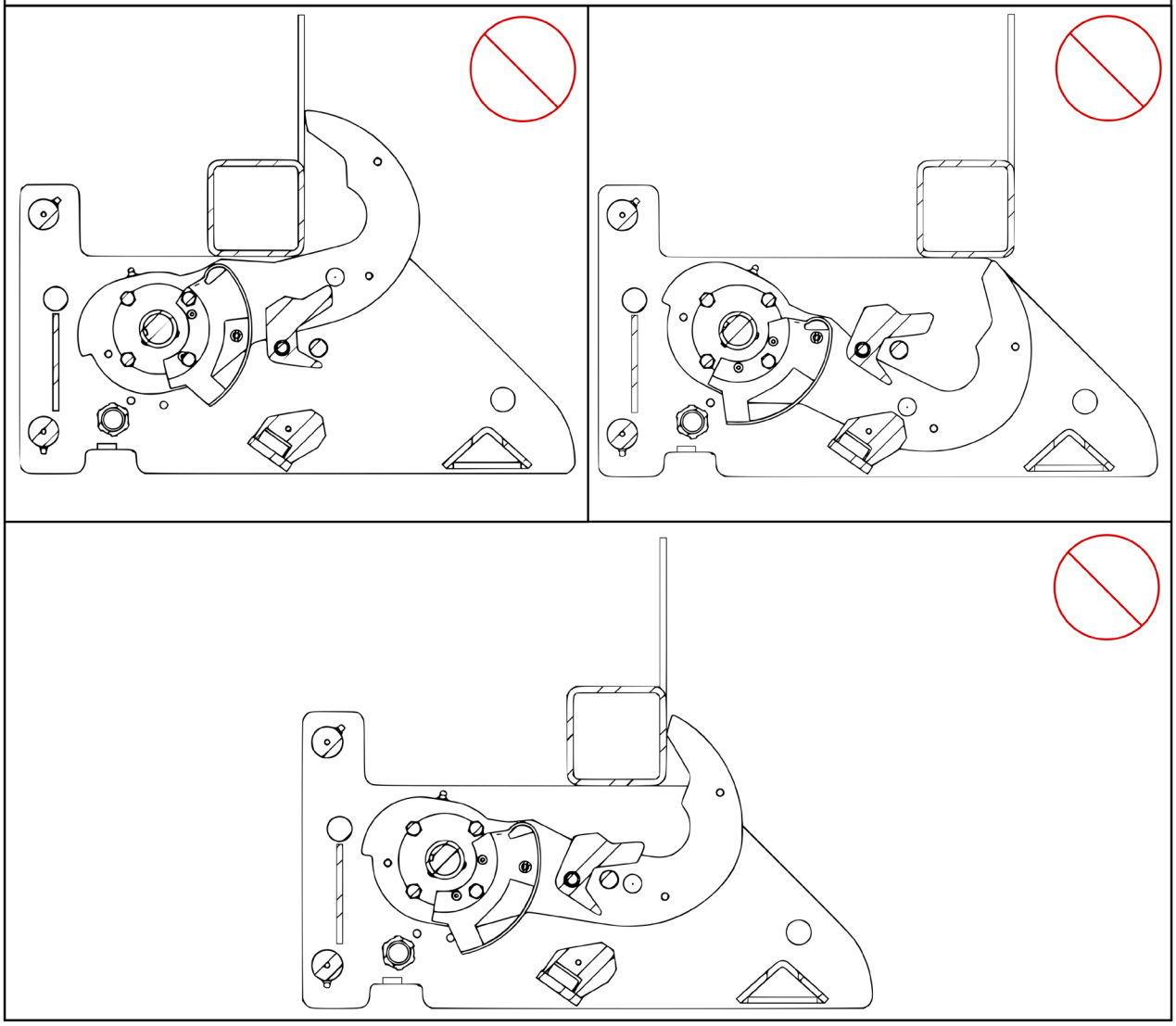


FIGURE 5.U—UNSUCCESSFUL HOOKING POSITIONS

6. CB-61 INTERLOCK CONTROL BOX OPERATION/TESTING

⚠WARNING

Before loading or unloading a vehicle at your loading dock while using a NOVA OmniLock™ vehicle restraint, always visually inspect to be sure that the restraint is engaged with the Rear Impact Guard (RIG). If the restraint is still not engaged after backing the trailer firmly against the dock bumpers, secure the trailer by other means.

Be sure that the area around the RIG assembly is clear of obstructions.

Always operate the NOVA OmniLock™ vehicle restraint from the top of the dock.

Inspect all restraint lights daily to make certain they work properly.

Perform maintenance on restraints in accordance with Maintenance on Page 14.AA of this manual.

NOVA OmniLock™ vehicle restraints should be operated only by authorized personnel who have read and understand the Owner's/User's Manual.

If you have questions, Call your local representative or NOVA at (800) 236-7325.

⚠WARNING

Verify the text is present in the display of the PLC as illustrated in Figure 6.A.

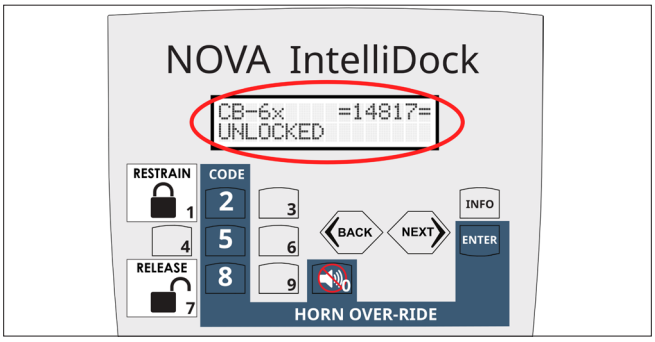


FIGURE 6.A—VERIFY PLC DISPLAY

6.1 STORED POSITION / RESTRAIN UNLOCKED

Stored Position / Restraint UNLOCKED

Hook is in the STORED position. Inside light is flashing RED alerting forklift operator unsafe condition exists. Outside light is flashing GREEN alerting truck driver it is safe to back in.

Refer to Figure 6.B.

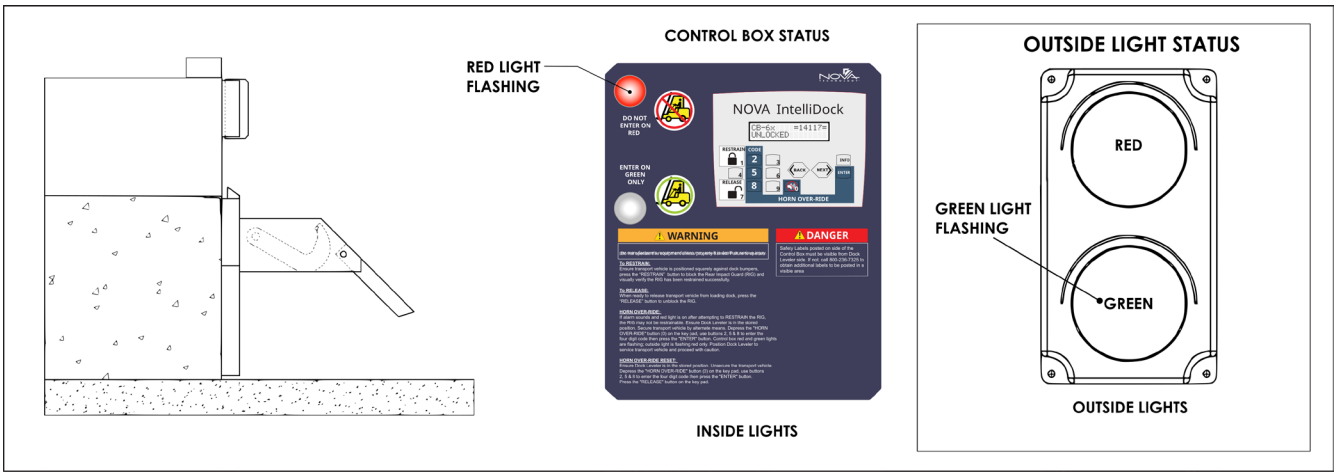


FIGURE 6.B—STORED POSITION

6. CB-61 INTERLOCK CONTROL BOX OPERATION/TESTING

6.2 RESTRAIN BUTTON PRESSED-RESTRAINT LOCKING

RESTRAIN Button Pressed - Restraint LOCKING

Trailer has backed into loading dock and is parked firmly against dock bumpers. The HORN will sound while the hook rotates from stored position to securely capture RIG. The inside light is flashing GREEN. Outside light is flashing RED alerting truck driver not to move. Refer to Figure 6.C.

⚠CAUTION

If trailer can not be restrained due to a lift gate or other obstruction that could become damaged, proceed to HORN OVER-RIDE state.

If HORN sounds after hook has finished rotating, proceed to "6.4 Fault State", otherwise proceed to "6.3 Restraint LOCKED".

Interlocked equipment must be in position listed below (optional):

PLC Display Code: 14117	Door must be closed
OR	
PLC Display Code: 14217	Door could be opened or closed
OR	
PLC Display Code: 14317	Leveler must be stored
OR	
PLC Display Code: 14417	Gate must be closed

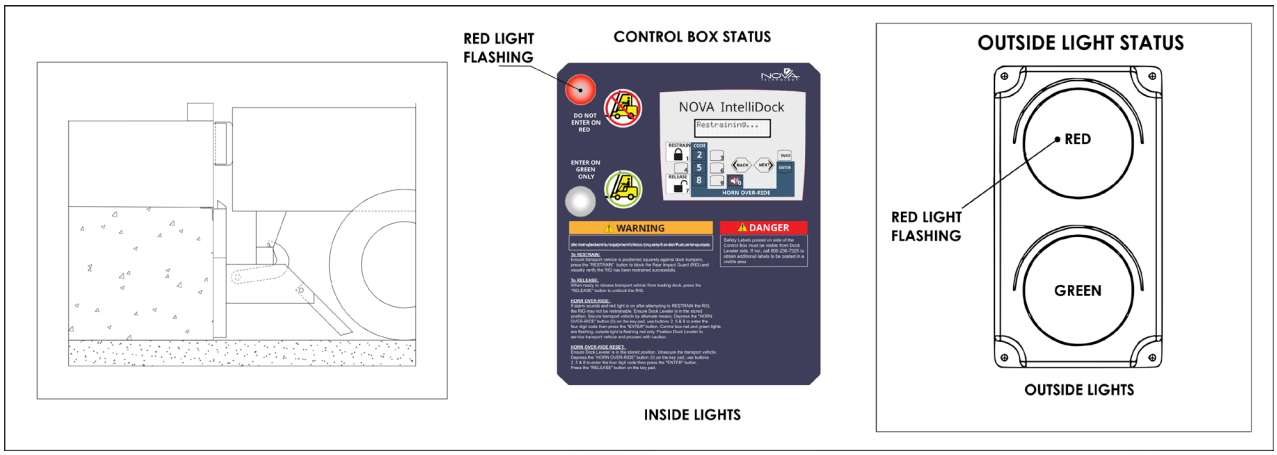


FIGURE 6.C—RESTRAINT LOCKING

6. CB-61 INTERLOCK CONTROL BOX OPERATION/TESTING

6.3 RESTRAINT LOCKED

Once the RIG is securely captured by the hook, a LOCKED condition exists. Inside light is flashing GREEN alerting the forklift operator a safe condition exists. Outside light is flashing RED alerting truck driver not to move. Refer to Figure 6.D.

⚠WARNING

Visually inspect to ensure that the NOVA OmniLock™ vehicle restraint hook securely captures the RIG of the trailer before operating the dock leveler.

Interlocked Equipment is Now Active

Interlocked equipment position listed below (optional):

PLC Display Code: 14117	Overhead door can be opened
OR	
PLC Display Code: 14217	Overhead door can be opened or remain open
OR	
PLC Display Code: 14317	Leveler can be placed into back of transport vehicle
OR	
PLC Display Code: 14417	Gate can be opened

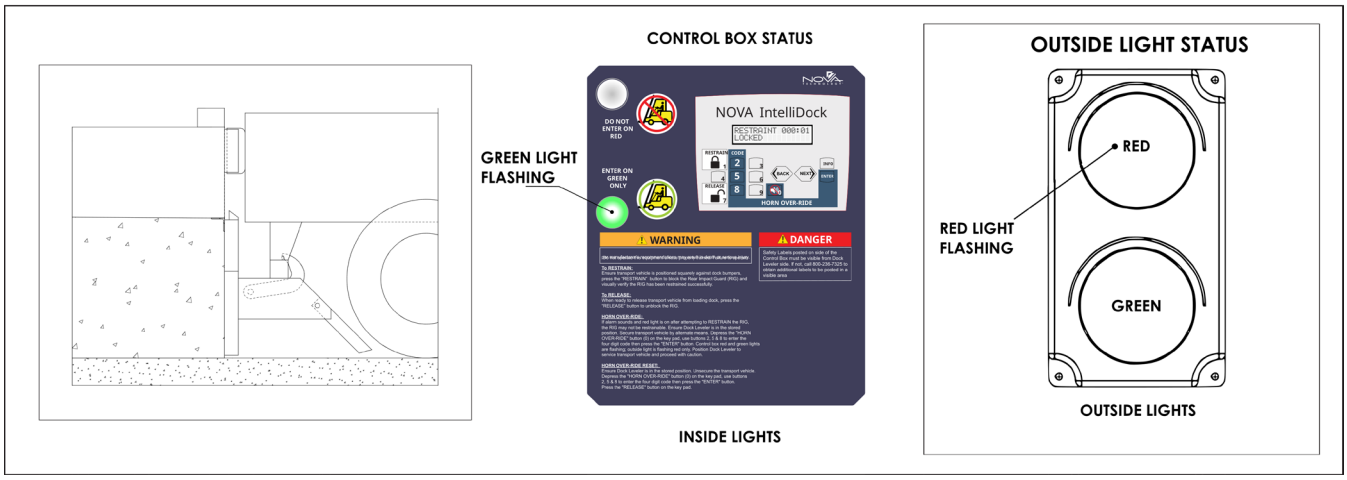


FIGURE 6.D—RESTRAINT LOCKED

CB-61 INTERLOCK CONTROL BOX OPERATION/TESTING

6.4 FAULT FROM LOCK STATE

Hook cannot engage the RIG. This could be due to a RIG that is located too far toward the rear axle, bent, obstructed, presence of a lift gate, or missing. Inside light is flashing RED and HORN is pulsing, alerting the forklift operator that the trailer is not locked. Outside light is flashing RED alerting the truck driver not to move. See Figure 6.E.

If the system detects a fault while engaging, the hook will automatically store. When the hook returns to the stored position, the control box will alarm until the operator clears the fault code by pressing "RELEASE".

The dock attendant is then required to instruct the driver to ensure that the trailer is parked firmly against the dock bumpers. If it is not, have the trailer back up and then repeat Restrain LOCKING procedure.

If the restraint still fails to properly capture the RIG, then proceed to "6.5 HORN OVER-RIDE".

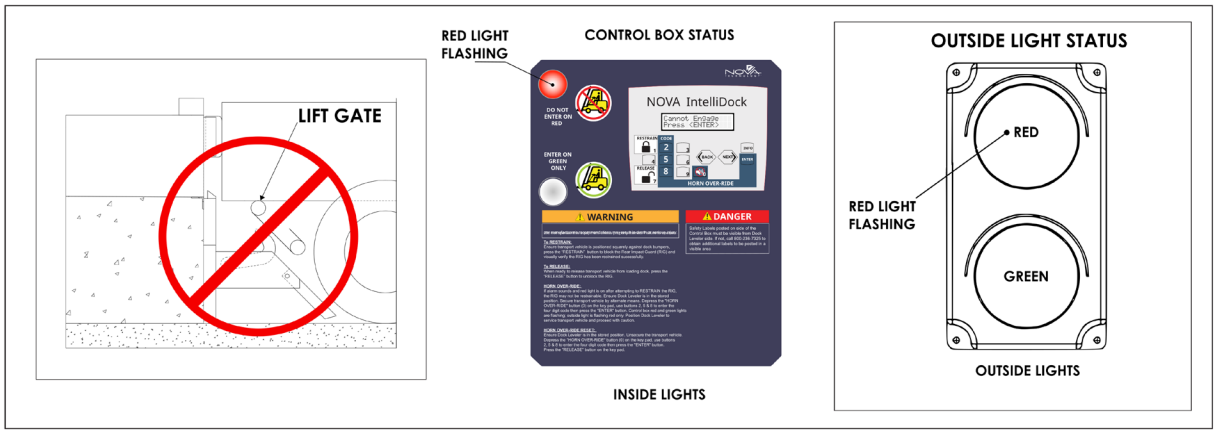


FIGURE 6.E—FAULT STATE

Figure 6.R shows examples of fault screens that may occur when attempting to restrain the RIG. See "10. FAULT DESCRIPTIONS" for information about these faults and possible causes and resolutions.

FIGURE 6.F—RESTRAINT LOCKING FAULTS

6. CB-61 INTERLOCK CONTROL BOX OPERATION/TESTING

6.5 HORN OVER-RIDE

If HORN sound and RED light is on after attempting to RESTRAIN the RIG, the trailer may not be serviceable. Ensure dock leveler is in the stored position. Secure trailer by alternate means. Depress the "HORN OVER-RIDE" button (0) on the key pad, enter default over-ride code 5528 then press the "ENTER" button. Inside RED and GREEN lights are flashing; outside light is flashing RED only. Position dock leveler to service trailer and proceed with caution. See Figure 6.E.

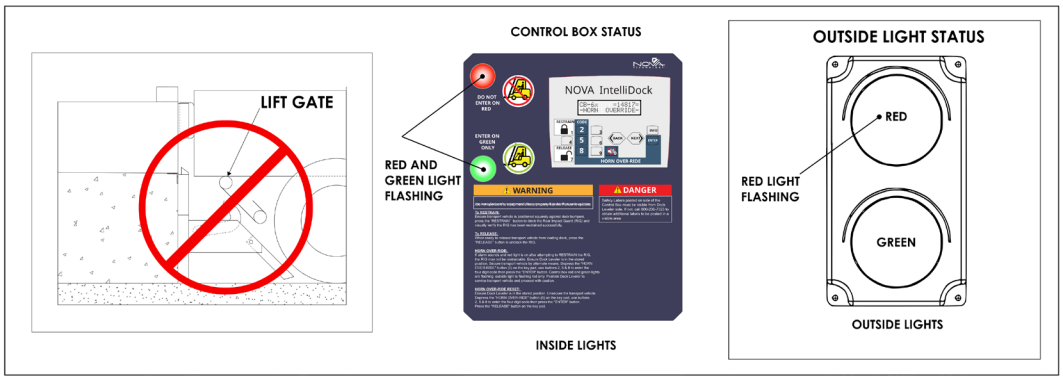
⚠ DANGER

Before activating "HORN OVER-RIDE", ensue that dock leveler is in stored position and secure trailer by other means.

HORN OVER-RIDE RESET

Ensure dock leveler is in the stored position. Unsecure the trailer. Depress the "HORN OVER-RIDE" button (0) on the key pad, enter default over-ride code 5528 then press the "ENTER" button. Press the "RELEASE" button on the key pad.

5528 = default over-ride code. The default over-ride code can be changed.



FIGURE—

6.6 RELEASE BUTTON PRESSED - RESTRAINT UNLOCKING

Hook travels from the LOCKED position to the STORED position. Inside light is flashing RED. Outside light is flashing RED alerting truck driver not to move. Refer to Figure 6.G. When the process is complete, the hook is in the stored position as shown in Figure 6.B on Page 6.CC.

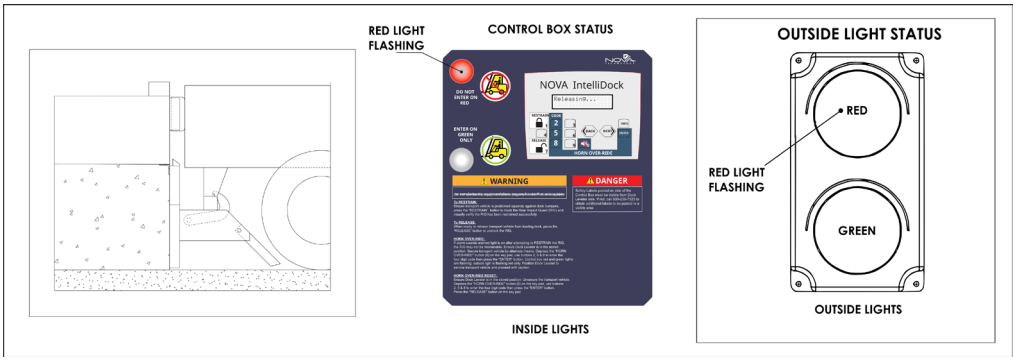


FIGURE 6.G—RESTRAINT UNLOCKING

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

⚠WARNING

Before loading or unloading a vehicle at your loading dock while using a NOVA vehicle restraint, always visually inspect to be sure that the restraint is engaging the Rear Impact Guard (RIG). If the restraint is still not engaged after backing the trailer firmly against the dock bumpers, secure the trailer by other means.

Be sure that the area around the RIG assembly is clear of obstructions.

Inspect all restraint lights daily to make certain they work properly.

Perform maintenance on restraints in accordance with Maintenance found in vehicle restraints Owner's. User's Manual.

NOVA vehicle restraints should be operated only by authorized personnel who have read and understand the Owner's/User's Manual.

If you have questions, Call your local representative or NOVA at (800) 236-7325.

⚠WARNING

Verify that the text present on the display of the PLC matches closely to that of Figure 6.G. The number between the double lines will vary based on your purchased features (eg. =14117=, =14235=, etc.).

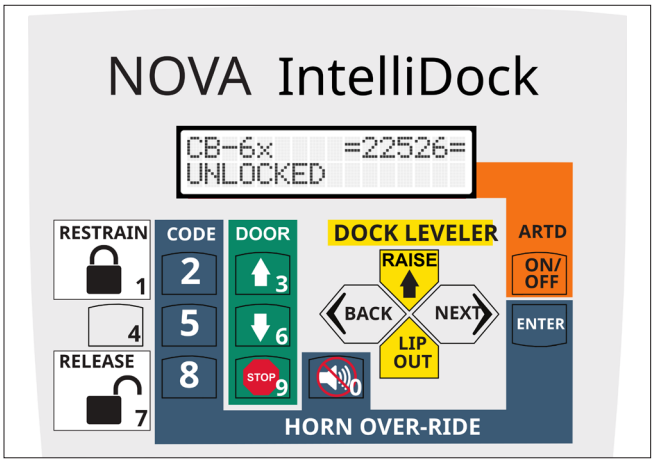


FIGURE 7.A—VERIFY PLC DISPLAY

Locking Vehicle Restraint Procedure

7.1 STORED POSITION / RESTRAINT UNLOCKED

Barrier is in the STORED position. Inside light is flashing RED alerting forklift operator unsafe condition exists. Outside light is flashing GREEN alerting truck driver it is safe to back in. Refer to Figure R.

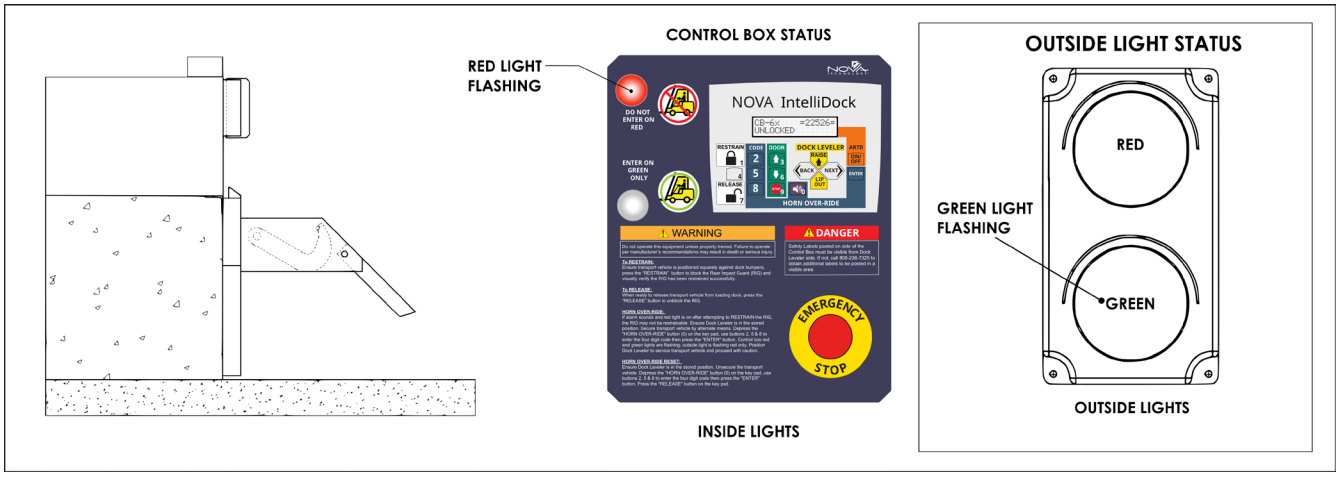


FIGURE 7.B—STORED POSITION/NO

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

Press RESTRAIN / (#1) Button - 7.2 RESTRAINT LOCKING

Verify the transport vehicle has backed into loading dock and is parked firmly against dock bumpers before pressing restrain. The HORN will sound while the barrier transitions from stored position to securely capture RIG. The PLC display will change to "Restraining...". The inside light will be flashing RED, and the outside light will be flashing RED alerting truck driver not to move. Refer to Figure T.

⚠ CAUTION

If trailer can not be restrained due to a lift gate or other obstruction that could become damaged, proceed to HORN OVER-RIDE state.

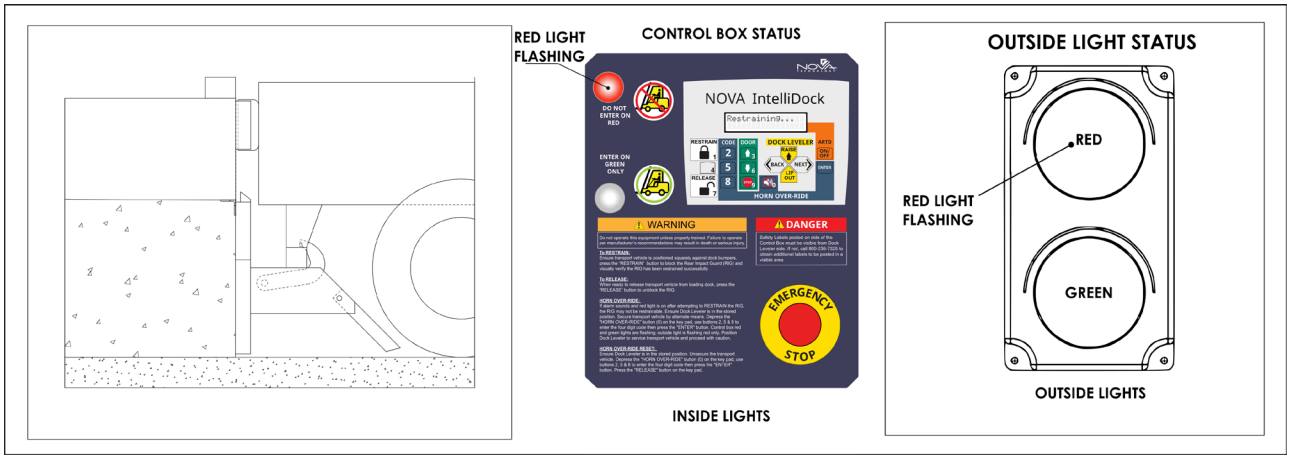


FIGURE 7.C—RESTRAINT LOCKING

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

7.3 RESTRAINT LOCKED

When the RIG is securely captured by the vehicle restraint hook, a LOCKED condition exists. The PLC display will change to what is displayed in Figure 7.D. The inside light will be flashing GREEN alerting the forklift operator a safe condition exists. The outside light will be flashing RED alerting truck driver not to move. This light pattern will not change for the rest of the procedure unless noted otherwise. Refer to Figure 7.E.

⚠ WARNING

Visually inspect to ensure that the NOVA vehicle restraint barrier securely captures the RIG of the trailer before operating the dock leveler.

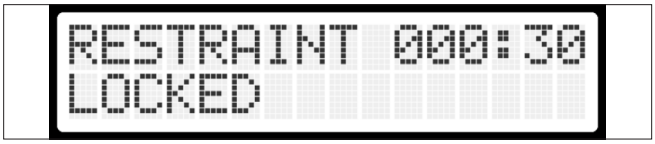


FIGURE 7.D

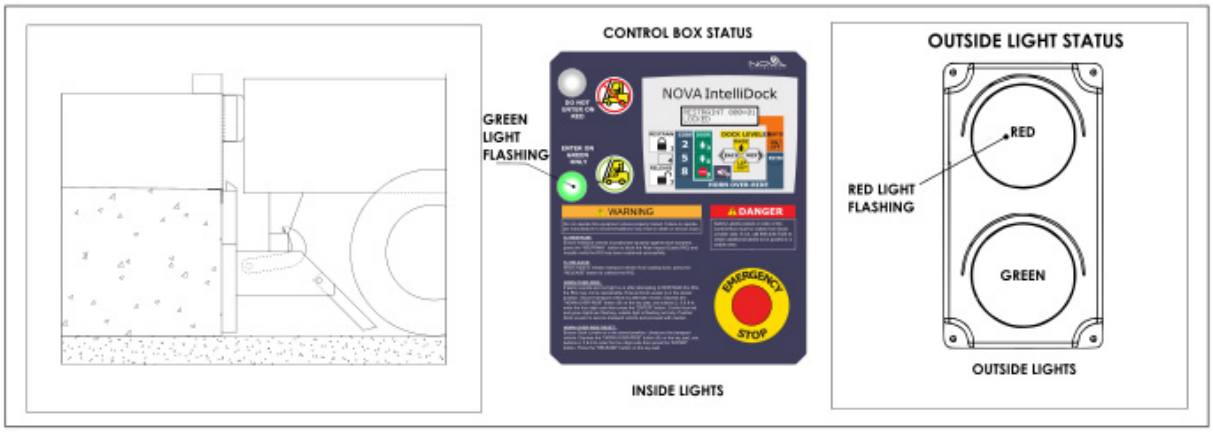


FIGURE 7.E—RESTRAINT LOCKED

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

If overhead dock door control is "Not Active", proceed to Raising Dock Leveler Procedure on page 65.

7.4 OPENING OVERHEAD DOCK DOOR PROCEDURE

Press Overhead Dock DOOR OPEN / (#3) Button - Door OPENING

The vehicle restraint must be securely capturing the RIG causing a LOCKED condition to exist. The PC display will change to "Door Opening" while the overhead dock door is opening. Refer to Figure 7.F.

NOTE: This display will only appear when DOOR OPEN/#3 button is pressed. If overhead door is opened with remote control, Combination Control Box will alarm (HORN).

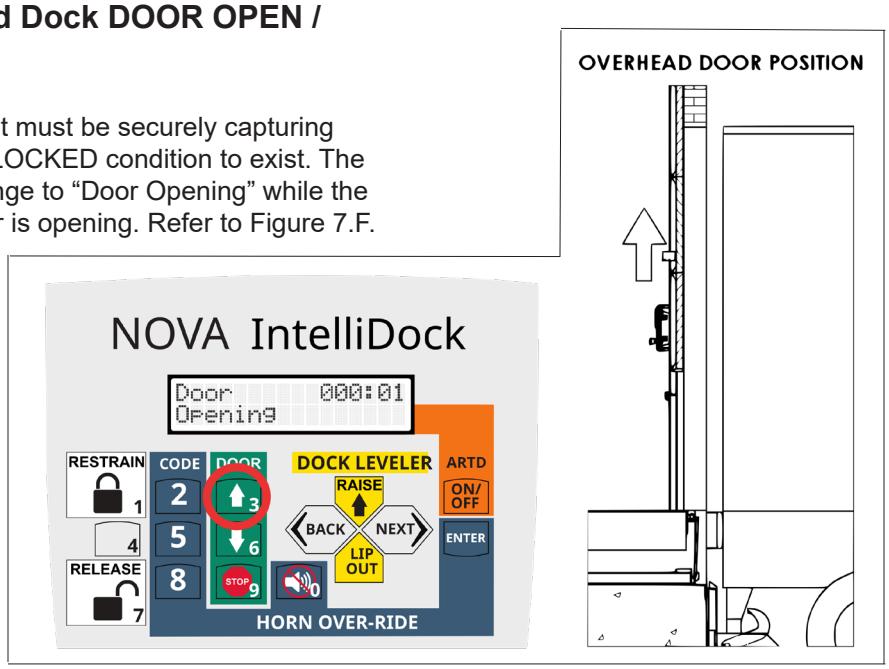


FIGURE 7.F—OVERHEAD DOCK DOOR OPENING

Door OPENED

Overhead dock door is fully opened. The PLC display will change to "Door Open". Refer to Figure 7.G.

Once unloading/loading is completed, and dock leveler is stored, proceed to Closing Overhead Dock Door Procedure on page 67.

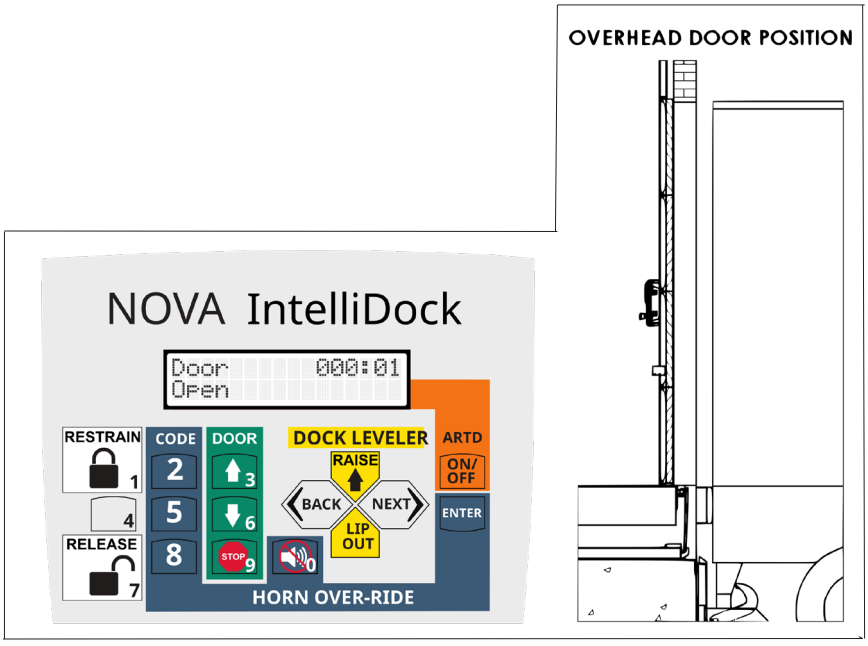


FIGURE 7.G—OVERHEAD DOCK DOOR OPENED

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

If dock leveler control is "Not-Active", proceed to Closing Overhead Dock Door Procedure on page 67.

7.5 RAISING DOCK LEVELER PROCEDURE

Press and hold DOCK LEVELER "RAISE" / ↑ Button -

Dock Leveler Raising

The vehicle restraint must be securely capturing the RIG causing a LOCKED condition to exist. If the overhead Dock Door is active, the door must be fully opened.

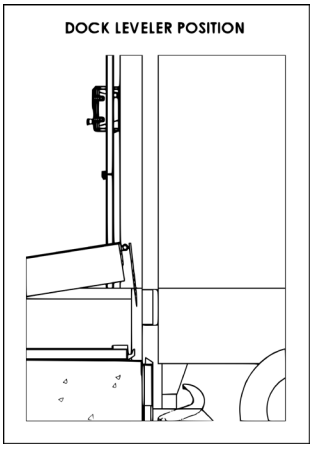


FIGURE 7.H

- Independent Lip Control

Press and hold DOCK LEVELER "LIP OUT" Button

Lip Extending

When lip travels above transport vehicle, release DOCK LEVELER "RAISE" button. Then press and hold DOCK LEVELER "LIP OUT". Hold the button until the lip has fully extended. Refer to Figure 7.J.

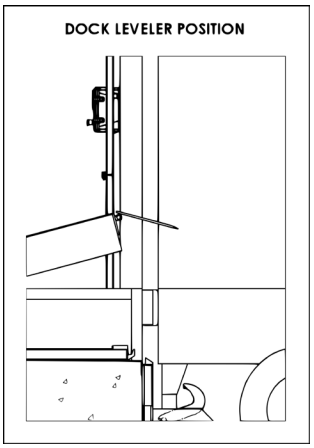


FIGURE 7.J

- No Independent Lip Control

Release DOCK LEVELER "RAISE"/ ↑ Button

OR

- Independent Lip Control

Release DOCK LEVELER "LIP OUT" Button

Dock Leveler Lowering

Release button once lip is extended. Refer to Figure 7.K.

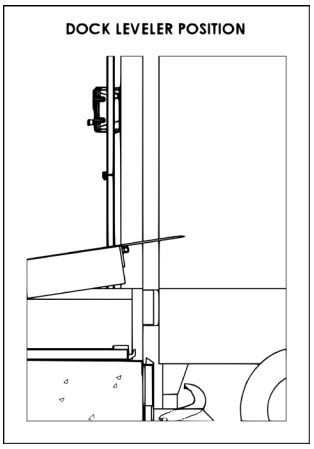


FIGURE 7.K

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

7.6 Service Transport Vehicle Procedure

RESTRAINT LOCKED

The RIG is securely captured by the vehicle restraint, a LOCKED condition exists. If Overhead Dock Door is active and door is fully opened the PLC display will change to "Door Open". If the Safety Gate is active, the screen will also read "Gate Open". Perform unloading/loading of transport vehicle. Refer to Figure 7.L.

If dock leveler control is "Not Active", proceed to Closing Overhead Dock Door Procedure on page 67.

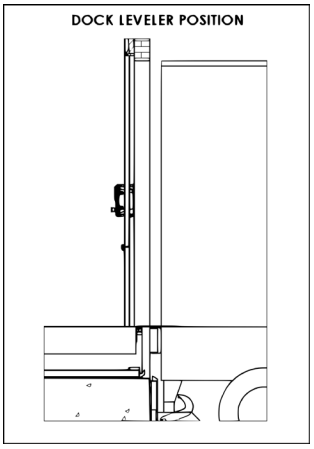


FIGURE 7.L

7.7 STORING DOCK LEVELER PROCEDURE

Press and hold DOCK LEVELER "RAISE" / ↑ Button -

Dock Leveler Raising

The RIG is securely captured by the vehicle restraint barrier. A LOCKED condition exists. If Overhead Dock Door is active, door is fully opened. Refer to Figure 7.M.

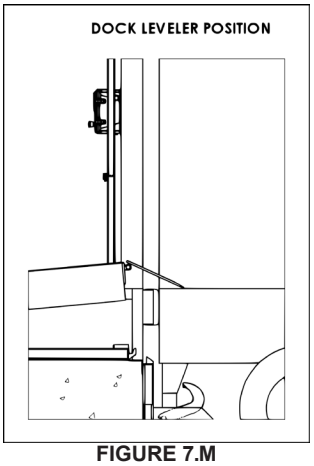


FIGURE 7.M

Press DOCK LEVELER "RAISE" / ↑ Button -

Dock Leveler Raising

Release button once lip is retracted. Refer to Figure 7.N.

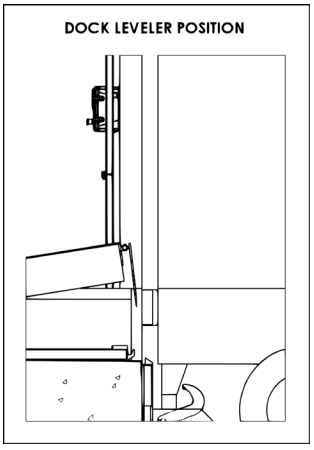


FIGURE 7.N

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

If overhead dock door control is "Not Active", proceed to Unlocking Vehicle Restraint procedure on page 33.

7.8 CLOSING OVERHEAD DOCK DOOR PROCEDURE

Press Overhead Dock DOOR CLOSE / (#6) Button - Door CLOSING

The RIG is securely captured by the vehicle restraint barrier, a LOCKED condition exists. Overhead dock door is closing. The PLC display will change to "Door Closing". Refer to Figure 7.P.

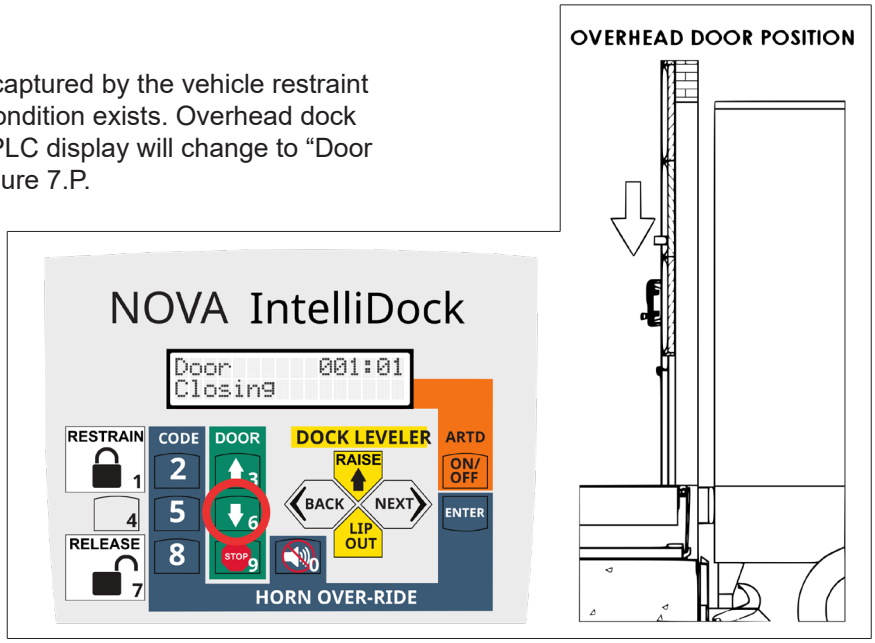


FIGURE 7.P—OVERHEAD DOCK DOOR CLOSING

Door CLOSED

Overhead dock door is fully closed. The PLC display will change to "RESTRAINT LOCKED". Refer to Figure 7.Q.

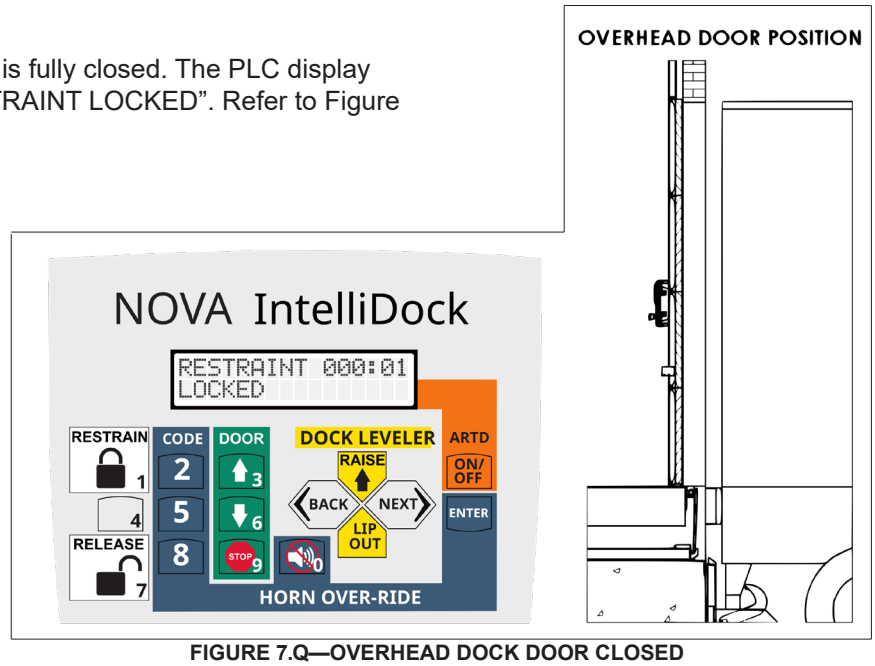


FIGURE 7.Q—OVERHEAD DOCK DOOR CLOSED

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

7.9 UNLOCKING VEHICLE RESTRAINT PROCEDURE

Press RELEASE / (#7) Button - Restraint UNLOCKING

Restraint travels from the LOCKED position to the STORED position. Inside light is flashing RED. Outside light is flashing RED alerting truck driver not to move. The PLC display will change to "Releasing...". Refer to Figure 7.B. When the process is complete, the restraint is in the stored position as shown in Figure 7.B on Page 7.BB.

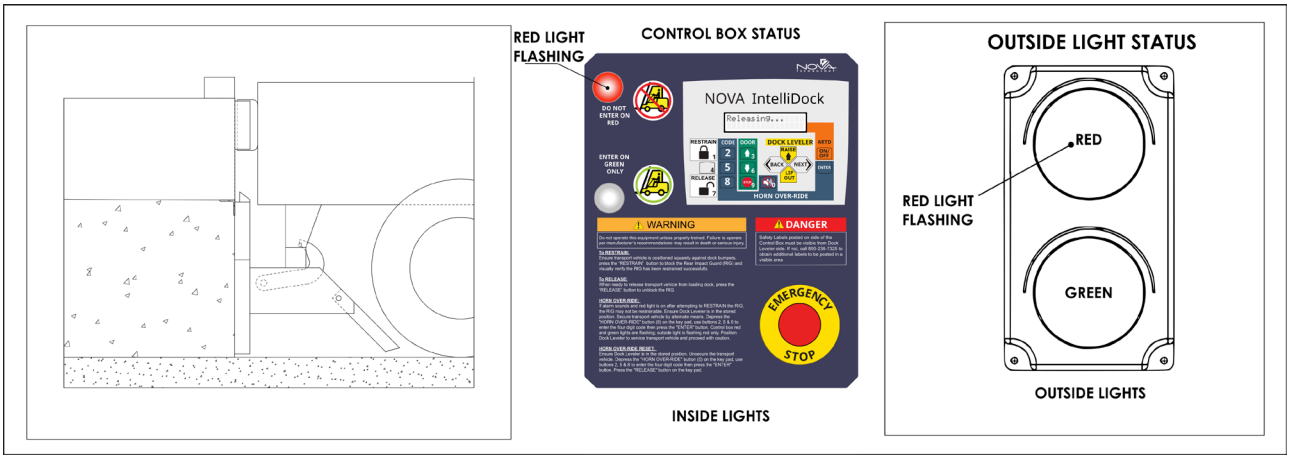


FIGURE 7.R—RESTRAINT UNLOCKING

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

7.10 FAULT STATE

If the hook cannot engage the RIG properly, the inside light will start flashing RED and the HORN will start pulsing to alert the forklift operator that the trailer is not restrained. The outside light will start flashing RED to alert the truck driver not to move. This could be due to a RIG that is located to far toward the rear axle, is bent, is obstructed, or is missing. This also could be due to the presence of a lift gate instead of a RIG. See Figure 7.S.

If the system detects a fault while engaging, the hook will automatically store. When the hook returns to the stored position, the control box will alarm until the operator clears the fault code by pressing "RELEASE".

The dock attendant is then required to instruct the driver to ensure that the trailer is parked firmly against the dock bumpers. If it is not, have the trailer back up and then repeat Restrain LOCKING procedure.

If the restraint still fails to properly capture the RIG, then proceed to "7.10 HORN OVER-RIDE".

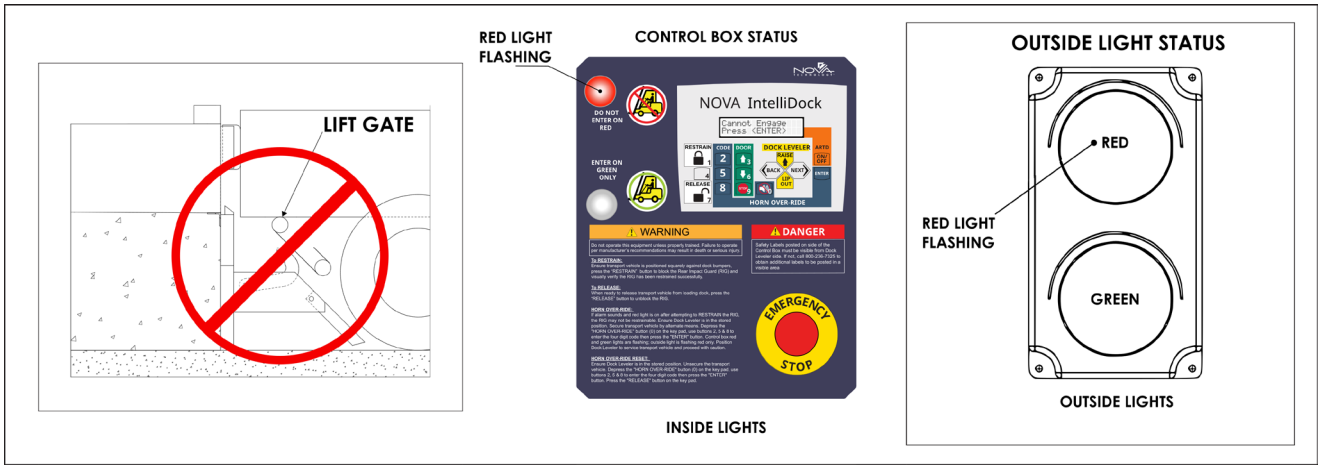


FIGURE 7.S—VEHICLE RESTRAINT FAULT STATE

Figure 7.T shows examples of fault screens that may occur when attempting to restrain the RIG. See "10. FAULT DESCRIPTIONS" for information about these faults and possible causes and resolutions.

FIGURE 7.T—RESTRAINT LOCKING FAULTS

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

Vehicle Restraint HORN OVER-RIDE

7.11 HORN OVER-RIDE

If HORN sounds and RED light is on after attempting to RESTRAIN the RIG, the transport vehicle may not be serviceable. Ensure Dock Leveler is in the stored position. Secure transport vehicle by alternate means. Depress the "HORN OVER-RIDE" button (0) on the key pad, enter default over-ride code 5528, then press the ENTER button. Control box RED and GREEN lights are flashing; outside light is flashing RED only. The PLC will change display to "HORN OVER-RIDE". Position Dock Leveler to service transport vehicle and proceed with caution in the maintenance menu. The default over-ride code can be changed.

DANGER

Before activating "HORN OVER-RIDE", ensure that dock leveler is in stored position, overhead dock door is closed and secure trailer by other means.

HORN OVER-RIDE RESET

Ensure Dock Leveler is in the stored position. Unsecure the transport vehicle. Depress the "HORN OVER-RIDE" button (0) on the key pad, enter default over-ride code 5528, then press the "ENTER" button.

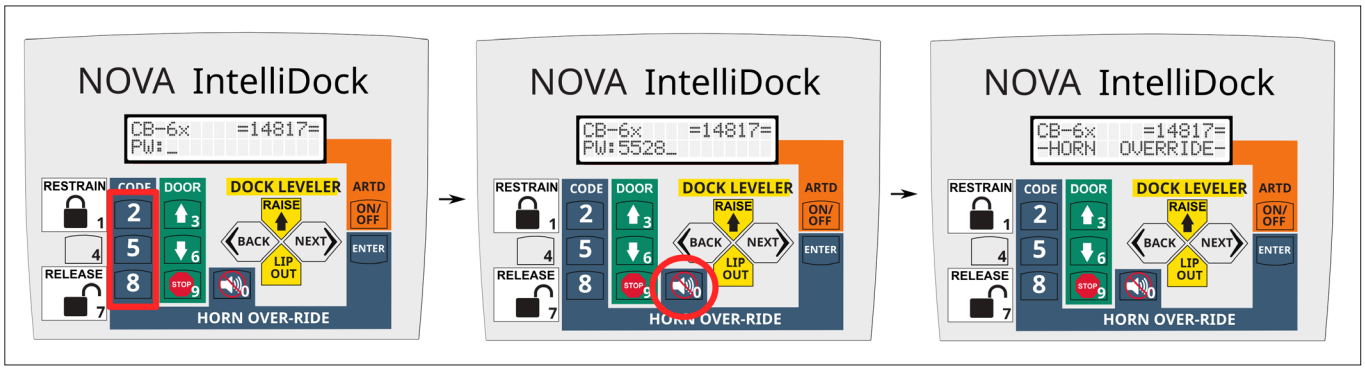


FIGURE 7.U—HORN OVER-RIDE STATE

7.12 OVERHEAD DOCK DOOR STOP BUTTON

Pressed - Door STOPPED

Overhead dock door stops traveling. The PLC display will change to "Door Stop-Press ↑3 or ↓6 To Resume". Only ↑3 or ↓6 can be pressed to reset door STOP. Refer to Figure 7.V.

Note: Door must be stopped in order to change direction.

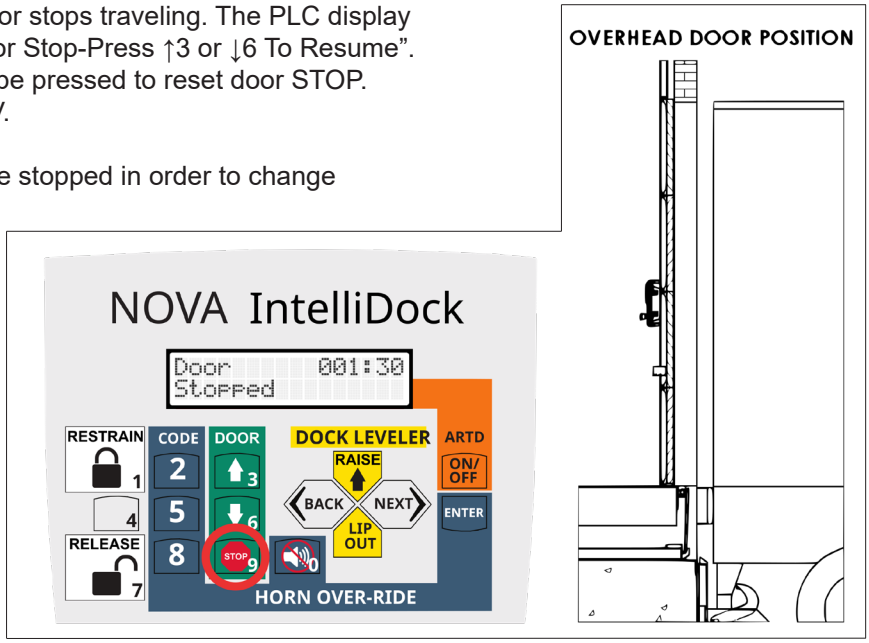


FIGURE 7.V—OVERHEAD DOCK DOOR STOPPED

7. CB-62 UNIVERSAL CONTROL BOX OPERATION/TESTING

Additional Functions
7.13 BELOW DOCK END LOADING

If transport vehicle is below the dock floor level and if ARTD is active, ensure the display shows "ARTD OFF".

Turning ARTD off or on can be done by pressing the ARTD ON/OFF button.

Release DOCK LEVELER "RAISE ↑". The PLC display will change to "Dock Leveler Lowering".

When the dock leveler is completely lowered, the lip will be positioned between the transport vehicle and the lip saddles on the dock leveler.

NOTE: If ARTD is active, ARTD is automatically enabled when in HORN OVER-RIDE.

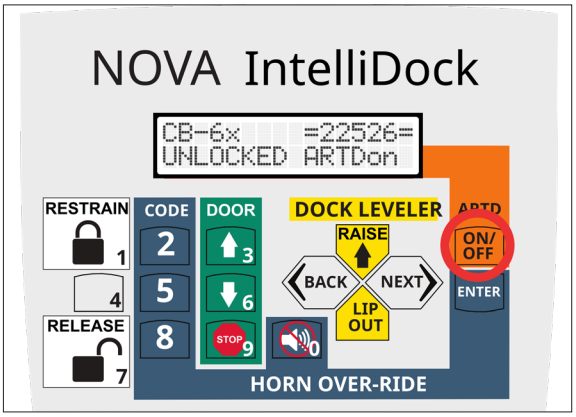


FIGURE 7.W—ARTD ON/OFF

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8. EMERGENCY STOP

⚠WARNING

If E-Stop is depressed while the dock leveler is transitioning and the combination control box loses power, the dock leveler will lower at a controlled rate.

The emergency stop will halt all of the following interlocked dock equipment:

- Vehicle Restraint
- Overhead Door
- Hydraulic Dock Leveler

Emergency Stop Operation is as follows:

1. Depress Emergency Stop.
   a. The control box display will change to "When Areas Safe, Release E-Stop".
   b. Control box light will change to flashing RED.
   c. Outside light will change to flashing RED.
   d. If the HORN was sounding, the alarm will be silenced until emergency stop is released or an input is pressed to continue.

2. Release Emergency Stop.
   a. When the emergency stop is released one of the following will happen:
      i. If no interlocked dock equipment was transitioning, the control box will return to the previous state before the emergency stop was depressed.
      OR
      ii. The control box display will change to"... To Continue". See Step 3.

3. ... To Continue
   Depending on when the emergency stop was pressed, different inputs are needed to continue using interlocked dock equipment.

Display Descriptions	
"Press UN/LOCK To Continue"	• The emergency stop was depressed while vehicle restraint was transitioning. Press "RESTRAIN" or "RELEASE" to continue using loading dock.
"Press Door ↑3 or ↓6 To Continue"	• The emergency stop was depressed while overhead door was transitioning. Press #3 "Door Open" or #6 "Door Close" to continue using loading dock.
"Press RAISE ↑ To Continue"	• The emergency stop was depressed while the dock leveler was transitioning. Press "RAISE ↑", or "Lip Out ↓" if independent lip is active and leveler was rising for more than three seconds before the emergency stop was depressed, to continue using loading dock.
"Press OVER-RIDEØ To Continue	• The emergency stop was depressed while there was a fault with the dock leveler or overhead door. Press "Ø" or HORN OVER-RIDE button to enter maintenance mode to close or store the overhead door or dock leveler respectively.

NOTE: If dock leveler is stored and overhead door is closed, "Ø" or HORN OVER-RIDE button can be pressed to exit maintenance mode.

9. ARTD

If ARTD ON/OFF button is depressed and the display changes to "Not Active", the operation listed below is not applicable.

<u>If the combination control box displays "AR On" or "AR Off", see operation below</u>:

When the combination control box displays "ARTD On", ARTD is active and if dock leveler lowers below dock, the following will happen:

1. The combination control box display will change to "WARNING! LEVELER STORING".
2. The control box lights will flash while leveler is storing.
3. The outside lights will flash RED while leveler is storing.
4. The audible alarm on the combination control box will sound.
5. The hydraulic motor will activate for 6 seconds to store the dock leveler.
6. Once the leveler is stored, the control box and outside lights will return to flashing the color they were before ARTD became active.

If the leveler is unable to store, for example due to pallets placed on top of the leveler, the combination control box HORN will sound. For more information about the HORN, see fault "Most Store Ramp"" in troubleshooting - maintenance.

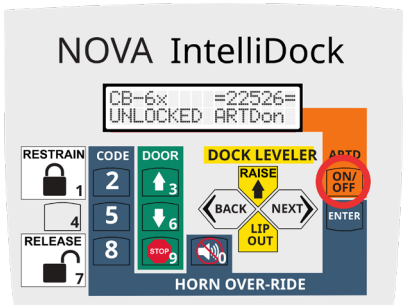


FIGURE 9.A—TURNING ARTD ON

NOTE: Automatic return to dock (ARTD) is automatically disabled when in maintenance mode.

10. FAULT DESCRIPTIONS

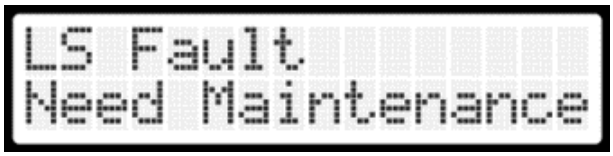
Fault Conditions

The following section explains the fault states that may occur in use of the vehicle restraint and how to recover from and/or prevent the fault from occurring.

10.1 FAULT 1: LIMIT SWITCH 1 FAULT

Program codes: All

Note: For location of LS1, please refer to page 104.

PLC Display Status	
 FIGURE Z1—LS1 FAULT SCREEN	
LS1 is not plugged.	Ensure LS1's connector is properly connected to the vehicle restraint wiring harness connector, and that the pins of each connector are firmly sealed in their respective connectors. Pull gently on the wires to confirm that they are properly seated.
LS1 is connected to the control box terminals incorrectly.	Refer to **"Pages 17, 20-22, and 32-38"** for correct wiring hookup diagram. Ensure that both N.C. and N.O. wires are properly connected to terminal block inputs.
LS1 is damaged.	Visually inspect LS1 for switch or cord damage.

10.2 FAULT 2: OBSTRUCTED ENGAGEMENT

Program codes: All

PLC Display Status	
  FIGURE Z2—OBSTRUCTED ENGAGEMENT FAULT SCREEN	
This fault can occur if	**Resolution**
Hook is blocked when attempting to lock. Refer to page 33 of this manual for a graphical representation of conditions that will produce this fault.	Have transport vehicle back up and attempt to **RESTRAIN** again.
Lift gate is present on transport vehicle.	Enter into HORN OVER-RIDE mode. Secure transport vehicle using alternative means.
LS1 is damaged.	Visually inspect LS1 for plunger damage.

10. FAULT DESCRIPTIONS

In this fault condition, the hook attempted to make positive contact but was blocked or stopped. Refer to **"Page 33"** of this manual for a graphical representation of conditions that will produce this fault. The system will alarm and the hook will **automatically store**.

To clear this fault, press the **RELEASE** key on the keypad. The vehicle operator should then back the truck up and the **RESTRAIN** key should be pressed. If the vehicle still cannot be restrained, the dock attendant should then enable **HORN OVER-RIDE**. See **"Page 70"** of this manual for information about entering **HORN OVER-RIDE**.

10.3 FAULT 3: BAD MOTOR OR CHAIN

Program codes: All

PLC Display Status	
 FIGURE Z3—BAD MOTOR/CHAIN FAULT SCREEN	
This fault can occur if	**Resolution**
The hook attempted to raise but did not move at all.	When safe to do so, visually inspect the vehicle restraint for any obstructions in the hook path.
The gear motor has gone bad.	Check the gear motor for damage and observe the gear shift for rotation. Also listen for the sound of the gear motor starting up. If no sound can be heard, then the gear motor may need to be replaced.
Drive chain has broken.	Check the drive chain, which couples the gear motor sprocket to the hook shaft sprocket. If the chain is broken, replace.

In any of these cases, maintenance is required on this restraint and the dock position should be placed out of service. To place the dock into **OUT OF SERVICE** mode, see page 95 of this manual.

10. FAULT DESCRIPTIONS

10.4 FAULT 4: LS IN STATE 1

Program codes: All

PLC Display Status	
 FIGURE Z4—LS In State 1 Fault	
This fault can occur if	**Resolution**
The hook has been raised manually when the system is in the **UNLOCKED** state.	Inspect the vehicle restraint and observe that the hook has been moved. A dock manager should be notified of this event. The attendant should then press the **RELEASE** key to fully store the hook and return to the **UNLOCKED** state.

10.5 FAULT 5: NO RIG BAR PRESENT

Program codes: All

PLC Display Status	
 **⚠CAUTION** **This fault results in the AUTOMATIC storing of the hook. When operating the vehicle restraint in any situation, always KEEP HANDS AWAY from the rotating hook until any movement or fault conditions are cleared.** FIGURE Z5—NO RIG BAR PRESENT FAULT	
This fault can occur if	**Resolution**
The hook was raised but did not encounter a RIG bar, resulting in over-travel.	The vehicle operator should then back the truck up and the **RESTRAIN** key should be pressed again.
The hook was raised but encountered a lift gate, resulting in over-travel.	Enter **HORN OVER-RIDE**. See **"Page 41"** of this manual for information about entering **HORN OVER-RIDE**.

In this fault condition, the hook was raised but did not encounter a RIG bar, resulting in over-travel. The system will alarm, and the hook will automatically store.

To clear this fault, press the **RELEASE** key on the keypad. If there is a RIG present on the vehicle, the vehicle operator should back the truck up, and the **RESTRAIN** key should be pressed again. If the vehicle still cannot be restrained, or there is a **LIFT GATE** present, the dock attendant should enable **HORN OVER-RIDE**. See **"Page 70"** of this manual for information about entering **HORN OVER-RIDE**.

10. FAULT DESCRIPTIONS

10.6 FAULT 6: NO LIMIT SWITCH 2 DETECTED

Program codes: All

PLC Display Status
 **⚠CAUTION** This fault results in the AUTOMATIC storing of the hook. When operating the vehicle restraint in any situation, always KEEP HANDS AWAY from the rotating hook until any movement or fault conditions are cleared.

FIGURE Z6—NO LS2 SWITCH DETECTED FAULT

This fault can occur if	Resolution
The hook raised but did not trigger **LS2**, indicating either it did not clear stops, or **LS2** is damaged.	Inspect the vehicle restraint and observe that the hook has been moved. A dock manager should be notified of this event. The attendant should then press the **RELEASE** key to fully store the hook and return to the **UNLOCKED** state.

Refer to **"Page 33"** of this manual for a graphical representation of conditions that will produce this fault. The system will alarm, and the hook will **automatically store**.

To clear this fault, press the **RELEASE** key on the keypad. Maintenance personnel should be contacted to inspect **LS2** and ensure it is not damaged, and also confirm that it is properly wired to the control box terminals. See **"Pages 17, 20-22, and 32-38"** for instructions on how to wire this sensor to the control box.

10.7 FAULT 7: OVERLOAD

Program codes: x1xxx, x2xxx, x3xxx

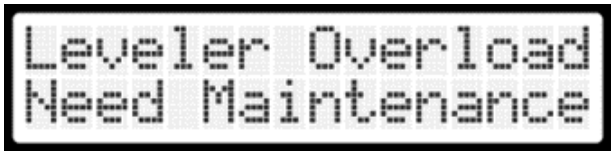
PLC Display Status


FIGURE Z7—OVERLOAD FAULT

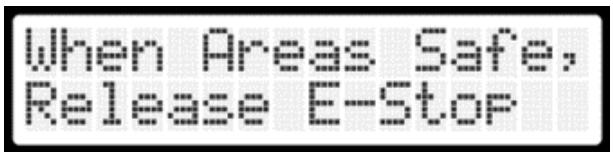
This fault can occur if	Resolution
The overload relay was tripped, indicating that there was an overcurrent condition on the dock leveler actuator.	To clear this fault, maintenance personnel must be called to reset the overload breaker inside of the control box, and the root cause must be found. The following may have occurred: • The amp-limit dial was not set correctly when dock leveler was put into service. Refer to page 100 for more information about this setting. • There is an electrical issue with the motor/pump that actuates the dock leveler. Consult with a licensed electrician to diagnose the root cause of this issue.

10. FAULT DESCRIPTIONS

If the fault cannot be resolved at the time it happens, put the dock position into **OUT OF SERVICE** mode (**Page 95**) and contact the appropriate personnel to make the repairs.

10.8 FAULT 8: EMERGENCY STOP PRESSED

Program codes: All

PLC Display Status	
 FIGURE Z8—EMERGENCY STOP FAULT	
This fault can occur if	**Resolution**
The emergency stop button was pressed and the dock position is put into a "safe-state", where all equipment will become de-energized.	Refer to **Page 73** for more information about **EMERGENCY STOP**.

10.9 FAULT 9: CLOSE DOOR TO CONTINUE

Program codes: xx1xx, xx5xx

PLC Display Status	
 FIGURE Z9—CLOSE DOOR TO CONTINUE FAULT	
This fault can occur if	**Resolution**
Door is open in the UNLOCKED state when the "D" or "V1" Interlock is enabled.	Close the dock door while the restraint is **UNLOCKED**.

10. FAULT DESCRIPTIONS

10.10 FAULT 10: DOOR OFF OF TOP LIMIT SWITCH

Program codes: xx1xx, xx2xx, xx5xx, xx6xx

PLC Display Status

FIGURE Z10—DOOR OFF TOP LS FAULT

This fault can occur if	Resolution
The door has been manually lowered off of the top limit switch when the restraint is **LOCKED**.	Raise the door back to fully open and use the control box to operate the door.

10.11 FAULT 11: DOOR OFF OF BOTTOM LIMIT SWITCH

Program codes: xx1xx, xx2xx, xx5xx, xx6xx

PLC Display Status

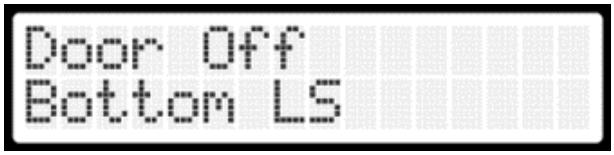



FIGURE Z11—DOOR OFF BOTTOM LS FAULT

This fault can occur if	Resolution
The door has been manually raised off of the bottom door limit switch when the restraint is **LOCKED**.	Lower the door back to fully closed and use the control box to operate the door.

10.12 FAULT 12: OPEN DOOR FIRST

CB Modes(s): CB-62

PLC Display Status

FIGURE Z12—OPEN DOOR FIRST FAULT

This fault can occur if	Resolution
There was an attempt to raise the dock leveler while the dock door is closed.	Fully open the dock door to the top LS. Attempt to raise the leveler again.

10. FAULT DESCRIPTIONS

10.13 FAULT 13: DOOR LS FAULT

CB Model(s): CB-62

PLC Display Status

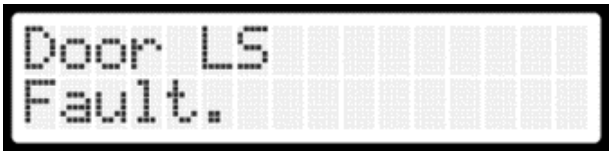



FIGURE Z13—DOOR LS FAULT

This fault can occur if	Resolution
There is an issue with the wiring of the door Limit Switches.	Check the wiring of the limit switches. Refer to **"Page 40"** for proper field wiring of this equipment.
There is a foreign object or condition that is causing both Limit Switches to be closed at the same time.	Ensure that there is nothing reflective or any light source that is causing an incorrect activation of the limit switches.

10.14 FAULT 14: DOOR NOT CLOSING

CB Model(s): CB-62

PLC Display Status

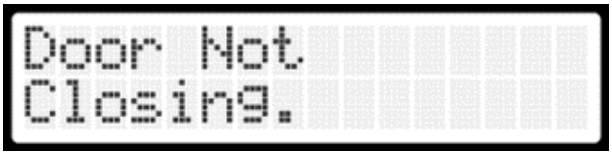



FIGURE Z14—DOOR NOT CLOSING

This fault can occur if	Resolution
Door has not fully closed 15 seconds after pressing the CLOSE button on the control box.	• Check the wiring of the limit switches. Refer to **"Page 40"** for proper field wiring of this equipment. • Ensure the door can move up and down on the door track and that it is not getting stuck. • Verify that the door motor equipment has power and is attempting to move the dock door.

10. FAULT DESCRIPTIONS

10.15 FAULT 15: DOOR NOT OPENING

CB Model(s): CB-62

PLC Display Status

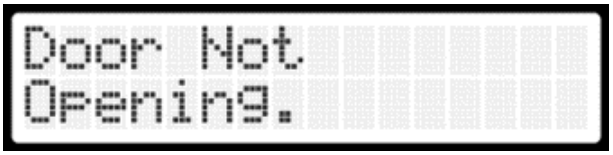



FIGURE Z15—DOOR NOT OPENING

This fault can occur if	Resolution
Door has not fully opened 15 seconds after pressing the OPEN button on the control box.	• Check the wiring of the limit switches. Refer to **"Page 40"** for proper field wiring of this equipment. • Ensure the door can move up and down on the door track and that it is not getting stuck. • Verify that the door motor equipment has power and is attempting to move the dock door.

10.16 FAULT 16: CLOSE DOOR TO RELEASE

CB Model(s): CB-62

PLC Display Status

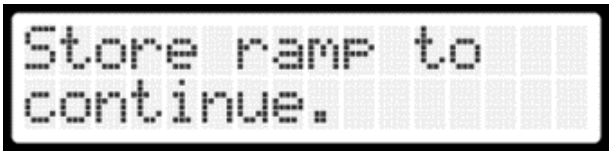
FIGURE Z16—DOOR NOT OPENING

This fault can occur if	Resolution
The RELEASE button has been pressed, but the dock door is still open. This fault will occur in both styles of door interlock.	Close the dock door using the control box keypad before pressing the RELEASE button.

10. FAULT DESCRIPTIONS

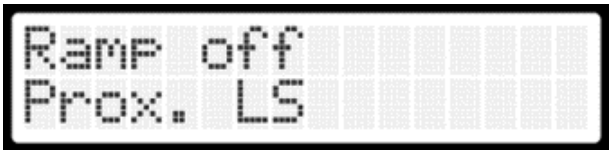
10.17 FAULT 17: STORE RAMP TO CONTINUE

CB Model(s): CB-62

PLC Display Status	
 FIGURE Z17—STORE RAMP TO CONTINUE FAULT	
This fault can occur if	**Resolution**
Leveler is raised/deployed in the UNLOCKED state when the Leveler Interlock is enabled.	Store the Leveler while the restraint is **UNLOCKED**.

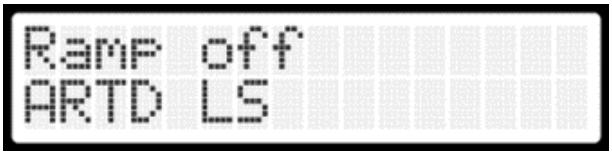
10.18 FAULT 18: RAMP OFF OF PROXIMITY LIMIT SWITCH

CB Model(s): CB-62

PLC Display Status	
 FIGURE Z18—RAMP OFF OF PROXIMITY LS FAULT	
This fault can occur if	**Resolution**
Leveler is raised/deployed in the UNLOCKED state when the Leveler Interlock is enabled.	Store the Leveler while the restraint is **UNLOCKED**.

10.19 FAULT 19: RAMP OFF OF ARTD LIMIT SWITCH

CB Model(s): CB-62

PLC Display Status	
 FIGURE Z19—RAMP OFF OF ARTD LS FAULT	
This fault can occur if	**Resolution**
Leveler is raised/deployed in the UNLOCKED state when the Leveler Interlock is enabled.	Store the Leveler while the restraint is **UNLOCKED**.

10. FAULT DESCRIPTIONS

10.20 FAULT 20: RAMP NOT RAISING

CB Model(s): CB-62

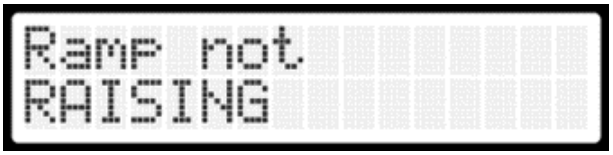
PLC Display Status


FIGURE Z20—RAMP NOT RAISING FAULT

This fault can occur if	Resolution
The Leveler does not raise off of the proximity LS 10 seconds after holding the RAISE button.	Check Leveler motor power for correct wiring and/or proximity LS for damage and wiring.

10.21 FAULT 21: STORE RAMP TO RELEASE

CB Model(s): CB-62

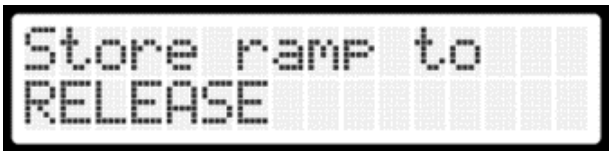
PLC Display Status


FIGURE Z21—STORE RAMP TO RELEASE FAULT

This fault can occur if	Resolution
The RELEASE button is pressed while the Leveler is still deployed.	Ensure Leveler is stored, and that the proximity LS is functioning correctly.

10.22 FAULT 22: CLOSE GATE TO CONTINUE

CB Model(s): CB-62

PLC Display Status


FIGURE Z22—CLOSE GATE TO CONTINUE FAULT

This fault can occur if	Resolution
Gate is opened in the UNLOCKED state when the Gate-Closed Interlock is enabled.	Close the Gate, if open, and/or check the wiring of the Gate Close Sensor.

10. FAULT DESCRIPTIONS

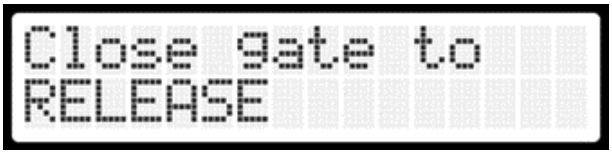
10.23 FAULT 23: OPEN GATE FIRST

CB Model(s): CB-62

PLC Display Status	
 FIGURE Z23—OPEN GATE FIRST FAULT	
This fault can occur if	**Resolution**
An attempt is made to raise the Leveler when the Gate is closed.	• Open the Gate before pressing RAISE. • Check the OPEN sensor for correct wiring.

10.24 FAULT 24: CLOSE GATE TO RELEASE

CB Model(s): CB-62

PLC Display Status	
 FIGURE Z24—CLOSE GATE TO RELEASE FAULT	
This fault can occur if	**Resolution**
The RELEASE button has been pressed while the Gate is open.	• Close the Gate before pressing RELEASE. • Check the CLOSED sensor for correct wiring.

11. RIG WEDGE RECOVERY

RIG Wedge is a condition where the vehicle has moved away from the dock, is held firmly in place by the hook, and applies a pulling force on the hook.

In most cases, the hook will travel forward to release this pressure and fall back to the UNLOCKED position.

Figure 11.1 shows a scenario where RIG wedge may occur.

The red arrow indicates that the RIG bar is applying a force against the hook. In a standard hook-style restraint, it would not be possible to release the hook in this situation.

However, due to the outward movement of the hook on the OmniLock™, this pressure can be overcome.

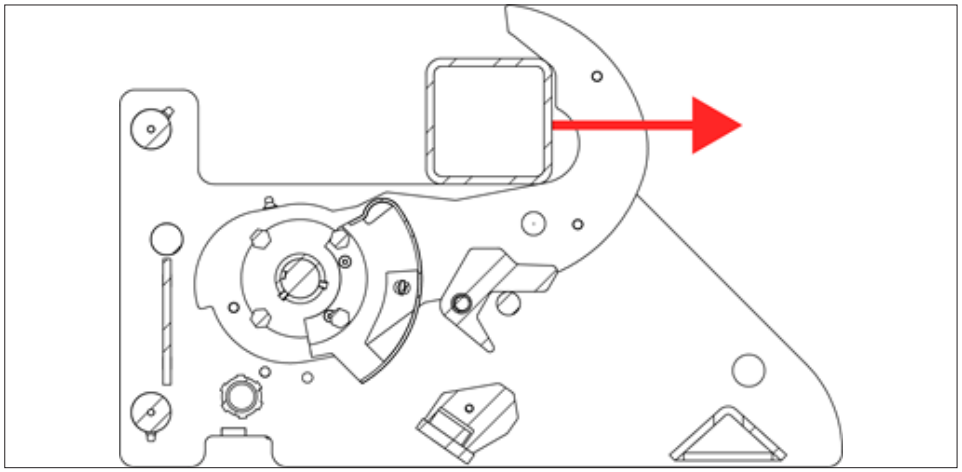


FIGURE 11.1—RIG WEDGE IS POSSIBLE IN THIS SCENARIO

In rare cases, the pressure of the RIG applied to the OmniLock's™ rotating hook may cause the hook to seize in place.

In this scenario, the GEAR MOTOR may need to be energized multiple times to overcome the friction within the hook's outward-travel mechanism and clear the wedge condition.

When this happens, the control box will indicate to the operator that this is required. Figure 11.2 shows what the control box will display.

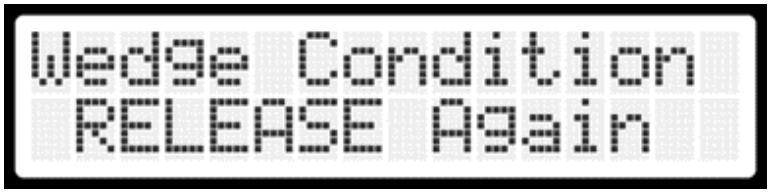


FIGURE 11.2—"RIG WEDGE WARNING"

11. RIG WEDGE RECOVERY

The operator is then required to do the following:

- Press the "RELEASE" key

If the RELEASE action is successful, the hook will store and the system will be returned to the STORED/ UNLOCKED state and operations continue as normal.

In even rarer cases, the hook may not be able to release from the wedged position due to one of the following:

- Excessive force applied to the restraint
- A damaged/disconnected relay on CR1/CR2
- A damaged/disconnected Limit Switch on LS1
- Power is not reaching the restraint (possible damaged wiring on outside cable)

After 5 (five) unsuccessful attempts to RELEASE the hook as instructed in Figure 11.2, the control box will display the message displayed in Figure 11.3.

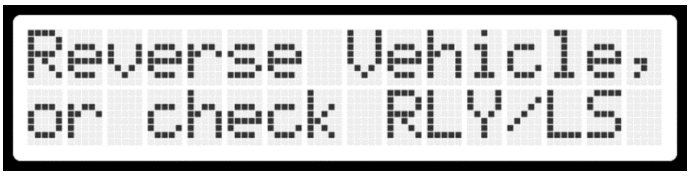


FIGURE 11.3—"RIG WEDGE OT RECOVERABLE/CHECK CONTROL BOX"

For each of the scenarios listed above, Table 11.1 explains a possible solution.

⚠ WARNING

WARNING: NEVER service any loading dock equipment when a vehicle is present on the loading dock driveway. If this issue is suspected and the truck cannot be released from the Omnilock and subsequently removed from the dock driveway, a "Rotating Hook Restraint Release Wrench" (p/n: MFT-2001) must be used to release the hook manually and allow the truck to leave before performing maintenance on the loading dock equipment. This part allows service personel to rotate the hook down while maintaining a safe distance from the vehicle. NEVER attempt to release a vehicle restraint by placing any part of the body underneath the trailer.

Issue	Solution
1. Excessive force applied to the restraint	Reverse the vehicle and let the hook fall
2. Damaged/disconnected relay on CR1/CR2	Verify relay is sealed properly or replace relay
3. Damaged/disconnected Limit Switch on LS1	Verify LS1 is connected in motor housing and wired to control box correctly. Check for damage on Limit Switch
4. Power is not reaching the restraint (possible damaged wiring on outside cable)	Inspect the vehicle restraint wire harness to ensure there is no damage to the cable assembly. This can sometimes be caused by crush damage to the dock face.

TABLE 11.1—TROUBLESHOOTING STEPS FOR UNRECOVERABLE RIG WEDGE

In any case, the driver should back the vehicle up to attempt to let the hook release.

If the hook falls, the restraint will store the hook automatically.

If the hook does not fall, the operator should press RELEASE manually. This will clear the vehicle to depart from the dock face with a green outside light and return the system to the STORED state. If it does not operate properly, refer to Table 11.1 for troubleshooting.

12. MAINTENANCE MODE

The following section explains how to enter Maintenance mode, which is used for diagnosing issues with the dock position that are within the scope of NOVA equipment.

12.1 MAINTENANCE OVERVIEW

1. ENTERING MAINTENANCE MODE ON THE CONTROL BOX

Key point: This step can only be done when the restraint and any (if applicable) interlocked devices are in their stored/closed positions, and the system is NOT in HORN OVER-RIDE.

a. Depress the "HORN OVER-RIDE" button (#0 button). Observe that the screen changes to that displayed in Figure 12.1.

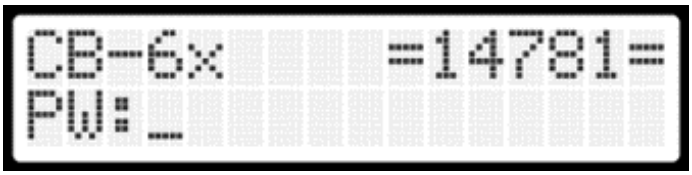


FIGURE 12.1—CONTROL BOX PASSWORD SCREEN

b. The RED light on the control box will continue to flash, and the outside light will turn to flash RED. This is to indicate that neither vehicles nor floor personnel are to enter the area while the dock position is under maintenance.

c. Enter the Maintenance code, 28252, and then press "ENTER".
   i. If the wrong code was entered, the "Wrong PW: Reenter Or Wait" display will appear. On this display, repeat steps 1a through 1c to enter maintenance mode.
   ii. Or if no further input is completed within 30 seconds, the "Wrong PW: Reenter Or Wait" display will clear and the screen will return to the previous display.

2. NAVIGATING THROUGH MAINTENANCE MODE

a. Use the "NEXT", "BACK" and "ENTER" buttons to navigate through Maintenance Mode.

Maintenance Menu Displays	Diagnostic Menu Displays
Display #1 = Last Fault	Display #1 = Number of Engagements
Display #2 = Fault Counters	Display #2 = Number of Disengagements
Display #3 = Days Since Last Maintenance	Display #3 = Efficiency
Display #4 = Days Maintenance Past Due	Display #4 = Average Dock/Day
Display #5 = Clear Maintenance Code	Display #5 = Average Dock Time
Display #6 = Change HORN OVER-RIDE Password	Display #6 = HORN OVER-RIDE Count
Display #7 = Enable Password RELEASE	Display #7 = Restraint Cycles
Display #8 = Change RELEASE Password	Display #8 = Leveler Cycles (CB-62)
Display #9 = Operate Restraint	Display #9 = Door Cycles (CB-62)
Display #10 = Operate Leveler (CB-62)	Display #10 = Gate Cycles (CB-62)
Display #11 = Operate Door (CB-62)	
Display #12 = Diagnostic Data	

12. MAINTENANCE MODE

12.2 LAST FAULT

Note: Faults that will be displayed here are dependent on Control Box model and features enabled.

FIGURE 12.2—LAST FAULT SCREEN

This display shows the last fault that occurred. More than one fault may have occurred at the same time, but only the most recent one will be displayed. See sub-menu "Fault Counts" to view number of each type of fault that has occurred.

12.3 FAULT COUNTS

Note: Faults that will be displayed here are dependent on Control Box model and features enabled.

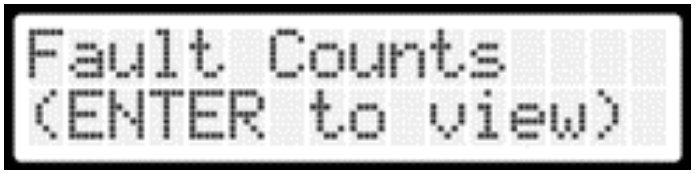


FIGURE 12.3—FAULT COUNTS SCREEN

When ENTER is pressed, a sub-menu is entered that shows the number of each type of fault that has occurred. Figure 12.4 shows an example of fault counter screens.

FIGURE 12.4—EXAMPLE OF FAULT COUNT SCREENS

Note: Counters on displays in this sub-menu can be reset by the following instructions. Once on the display with the counter that needs to be reset, press and hold "ENTER' for five seconds. After five seconds, the counter display will begin the flash. Release "ENTER". Next, press the "HORN OVER-RIDE" button (#0 button) to set counter back to zero. This is the only acceptable entry to reset the counters. Once the counter has been reset, press "ENTER' to successful reset counter.

12.4 DAYS SINCE LAST MAINTENANCE

FIGURE 12.4—DAYS SINCE LAST MAINTENANCE SCREEN

This screen shows how many days it has been since the last service was performed on the restraint.

12. MAINTENANCE MODE

12.5 DAYS MAINTENANCE PAST DUE

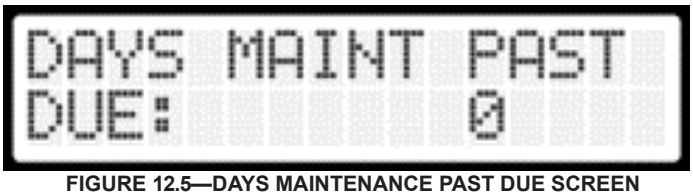


FIGURE 12.5—DAYS MAINTENANCE PAST DUE SCREEN

This display indicates how many days have passed that maintenance was required and not administered.

12.6 CLEAR MAINTENANCE CODE

FIGURE 12.6—CLEAR MAINTENANCE CODE SCREEN (UNCLEARED)

This display allows the maintenance personnel to clear the maintenance needed indicator, reset the maintenance schedule counter to 0 days, and the "Days Maintenance past due" counter to 0. Press the "ENTER" button to clear the code. Upon pressing "ENTER", the screen will indicate that the maintenance task has been cleared. When navigating off this screen and back after doing this, the "Cleared" indicator will disappear.

FIGURE 12.6.1—CLEAR MAINTENANCE CODE SCREEN (UNCLEARED)

12.7 CHANGE OVER-RIDE PASSWORD

FIGURE 12.7—CHANGE OVER-RIDE PASSWORD SCREEN

This display allows the maintenance personnel to change the default HORN OVER-RIDE password. Once on this screen, press "ENTER" to change current password. Then enter a new password. The new password can range from 1 to 9999. Once the new password has been typed, press "ENTER" to successfully change the password. Any leading zeros will be eliminated. Provide the new over-ride password to authorized dock attendant.

12. MAINTENANCE MODE

12.8 ENABLE PASSWORD RELEASE

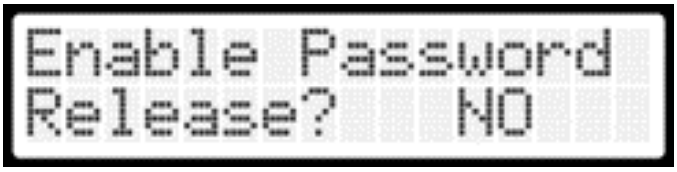


FIGURE 12.8—ENABLE PASSWORD RELEASE SCREEN

This display allows the user to enable or disable the requirement for a password to unlock the restraint. Pressing "ENTER" toggles this feature on and off.

12.9 CHANGE RELEASE PASSWORD

FIGURE 12.9—CHANGE RELEASE PASSWORD SCREEN

This display allows the maintenance personnel to change the default RELEASE password. Once on this screen, press "ENTER" to change current password. Then enter a new password. The new password can range from 1 to 9999. Once the new password has been typed, press "ENTER" to successfully change the password. Any leading zeros will be eliminated. Provide the new release password to authorized dock attendant.

12.10 OPERATE DOCK EQUIPMENT

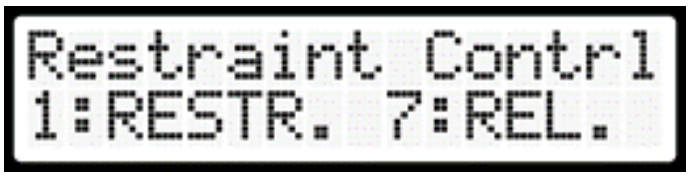


FIGURE 12.10

This display allows the maintenance personnel to manually raise and lower the hook using the "RESTRAIN" (#1 button) and "RELEASE" (#7 button) keys. The gear motor is given power as long as the operator holds the button down. This allows the maintenance person to test the gear motor or return the hook to the stored position after performing maintenance tasks. **Always ensure that the hook is returned to the stored position before exiting maintenance mode.**

12. MAINTENANCE MODE

FIGURE 12.10.1

This display allows the maintenance personnel to manually raise and lower the door using the "↑" (#3 button) and "↓" (#6 button) keys. The door operates as in normal usage when the buttons are pressed. This allows the maintenance person to test the door or open and close it while performing maintenance tasks. **Always ensure that the door is returned to the closed position before exiting maintenance mode.**

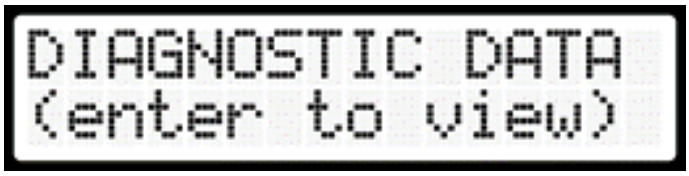
FIGURE 12.10.2

This display allows the maintenance personnel to manually raise and lower the dock leveler using the "RAISE" and "LIP OUT" keys. The hydraulic pump is given power as long as the operator holds the buttons down. This allows the maintenance person to test the hydraulic system or to raise and lower the dock leveler while performing maintenance tasks. **Always ensure that the dock leveler is returned to the stored position before exiting maintenance mode.**

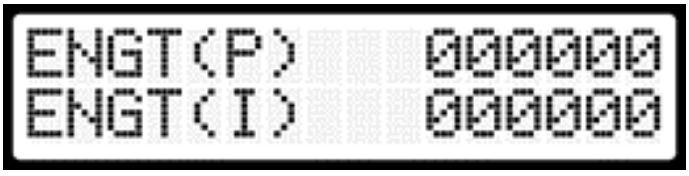
12.11 DIAGNOSTIC DATA

Program codes: All

Pressing "ENTER" on this screen enters the DIAGNOSTIC DATA menu, where various statistics can be viewed.



#1 Display – Number of Engagements



This screen shows the number of Proper and Improper engagements.

12. MAINTENANCE MODE

#2 Display – Number of Disengagements

This screen shows the number of Proper and Improper disengagements.

#3 Display – Efficiency

This screen shows the number of Proper and Improper engagements, and Proper to Improper disengagements.

#4 Display – Average Docks per Day

This screen displays the average number of docking events per day.

#5 Display – No-RIG Events

This screen shows the number of times that the hook did not engage a RIG bar, and traveled all the way to the top of its range.

#6 Display – Average Dock Time

This screen shows the average amount of time a vehicle remains locked at the dock.

12. MAINTENANCE MODE

#7 Display – Days Since Last Maintenance

This screen shows how many days it has been since the last service was performed on the restraint.

#8 Display – HORN OVER-RIDE Count

This screen shows how many times HORN OVER-RIDE was used.

#23 Display – Restraint Cycles

This screen shows a count of how many overall cycles have been run on this restraint. This includes both Proper and Improper engagements.

#25 Display – Interlock Cycles

This screen shows the number of cycles on the interlocking device. On CB-61 only one of these screens will be shown. On a CB-62, up to all of these displays may be shown depending on options selected.

2. EXITING MAINTENANCE MODE ON THE CONTROL BOX

<u>Key Point: This procedure can be done on any maintenance screen.</u>

a. Depress the "HORN OVER-RIDE" button (#0 button)
b. Enter the Maintenance code, 28252, and then press "ENTER".
    i. If the wrong code was entered, the "Wrong PW: Reenter Or Wait" display will appear. On this display, repeat steps 3a through 3b to enter maintenance mode.
    ii. Or if no further input is completed within 30 seconds, the "Wrong PW: Reenter Or Wait" display will clear and the screen will return to the previous display.

13. OUT OF SERVICE

The CB-6x control box can be put into a mode called "Out of Service Mode" that effectively disables the functionality of all dock equipment that is controlled with the box.

CAUTION: Any equipment that is NOT connected to the control box and/or controlled with the CB-6x control box is NOT disabled by entering this mode. The only equipment that this mode can ensure the disabling of is the vehicle restraint. Doors and levelers may still be operational depending on interlocking features enabled and should be considered live unless they are specifically controlled by a CB-62 Combination control box and are specified in its feature listing. Please consult with the dock manager to understand equipment configuration before using this mode.

In "Out of Service" mode, the CONTROL BOX LIGHTS and the OUTSIDE LIGHTS will both be flashing RED.

To enter "Out of Service" mode, the following steps are followed:

13.1 ENTER OUT OF SERVICE MODE

a. Press "0/HORN OVER-RIDE" on the keypad.
b. Enter password "3339".
c. Figure 13.1 shows the screen that should appear on the control box display.

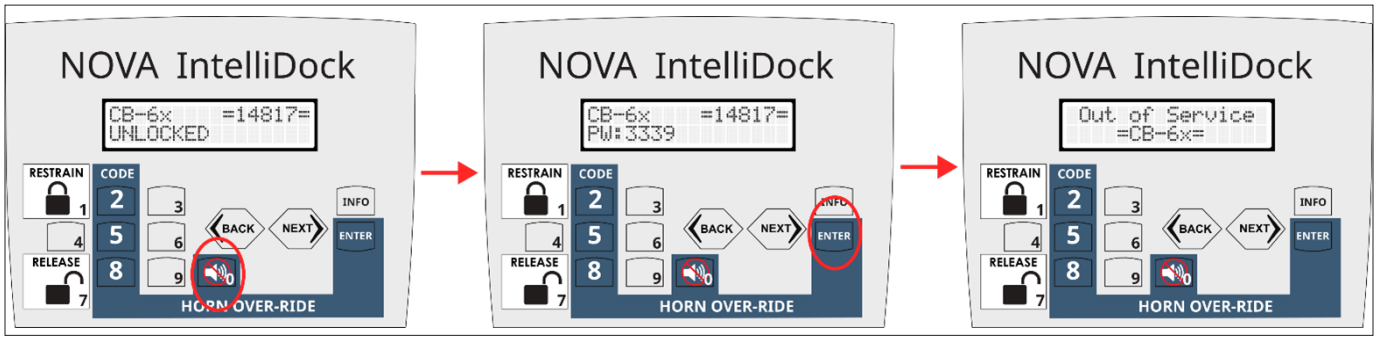


FIGURE 13.1—SEQUENCE TO ENTER "OUT OF SERVICE" MODE

13.2 EXIT OUT OF SERVICE MODE

a. Press "0/HORN OVERRIDE" on the keypad.
b. Enter password "3339".
c. The control program will return to the functional "STORED/HOME" slate and operations can resume as normal.

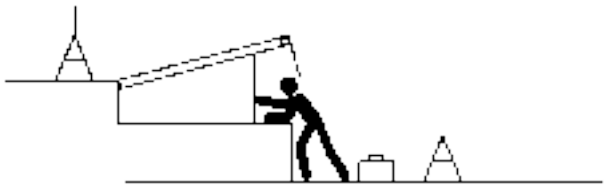
14. ROUTINE MAINTENANCE

⚠ DANGER

When working with electrical or electronic controls, make sure that the power source has been locked out and tagged according to OSHA regulations* and approved local electrical codes.

Post safety warnings and barricade work area, at dock level and at ground level, to prevent unauthorized use of the dock.

⚠ WARNING



Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

⚠ CAUTION

Use lifting device (e.g. crane, jack) when lifting carriage (approx. 110 lbs.). Lifting by hand may cause back injury.

NOTICE

Maintenance may be required more frequently at loading docks exposed to harsh environments (extreme climates, corrosive chemicals, frequency of usage, etc.). If these conditions exist, consult NOVA for accelerated maintenance requirements.

⚠ DANGER

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

In addition, it is recommended and good safety practice to use an additional means to support the dock platform and lip anytime when physically working in front of or under the dock leveler. This additional means may include, but is not limited to a boom truck, fork truck, stabilizing bar or equivalent.

DAILY

- Remove debris around NOVA OmniLock™ Vehicle restraint.
- Verify that restraint operates smoothly and inside, outside lights and HORN are working.
- Replace damaged or missing light bulbs and lenses.
- Repair, remount, or replace outside and inside, decals, signs and labels as required.
- Inspect dock bumpers. Missing or worn bumpers must be replaced.

180 DAYS

- Perform all Daily maintenance.
- Grease rollers at fittings located on the top and bottom axle with Mobilith™ SHC 220 No. 2 grease or equivalent.
- Grease hook at grease fitting with Mobilith™ SHC 220 N. 2 grease or equivalent.
- Verify brake torque is greater than 475 in-lbs (42 ft-lbs), and less than 675 in-lbs (58 ft-lbs) at the hook shaft, rotating the hook from ENGAGED 45° to the slide plates.
- Inspect the outside electrical connections (junction box, conduit, power harness) and outside communication light. Loose or damaged components must be repaired or replaced.
- Check that all concrete anchor bolts are torqued to 60 ft-lbs.
- Perform operational test after all maintenance repairs and adjustments are complete.
- Inspect dock bumpers. A minimum of four inches (4") of protection is required. Worn, torn, loose or missing bumpers must be replaced.

360 DAYS

- Perform all Daily and 180 Day maintenance.
- Check and tighten, if necessary, motor drive chain. To tighten see Figure 14.A, page 97.
- Lube chain using chain lube.

⚠ DANGER

It is recommended and good safety practice to use an additional means to support the dock platform and lip anytime when physically working in front of or under the dock leveler. This additional means may include, but is not limited to a boom truck, fork truck, stabilizing bar or equivalent.

* Refer to OSHA Regulation 1910.146 Confine Spaces, 1910.197 Lockout/Tagout.

14. ROUTINE MAINTENANCE

DRIVE CHAIN ADJUSTMENT

Inspect the drive chain periodically for dirt and chain slack. Open the motor enclosure and clean the chain with solvent. After cleaning, spray with a high quality chain spray type lubricant.

The drive chain should not have more than 1/4" slack. Refer to Figure 14.A. To tighten chain:

- Open motor enclosure and loosen the four (4) motor mounting bolts.
- Pry the motor assembly forward, in the slotted holes, until the chain is tight with proper alignment between sprockets.
- Hold in this position and tighten the four (4) motor mounting bolts to 18-26 ft-lbs following the displayed pattern.

⚠ DANGER

When working with electrical or electronic controls, make sure that the power source has been locked out and tagged according to OSHA regulations and approved local electrical codes.

BRAKE TORQUE ADJUSTMENT

(Refer to Figure 14.A)

- Loosen brake adjuster locknut while holding the adjuster screw to prevent inadvertent adjustment.
- Turn adjuster screw clockwise to increase brake torque as needed.
- Tighten adjuster locknut while holding the adjuster screw to prevent inadvertent adjustment.
- Verify brake torque is in the range of 475 to 675 in-lbs at the hook shaft; readjust as required.

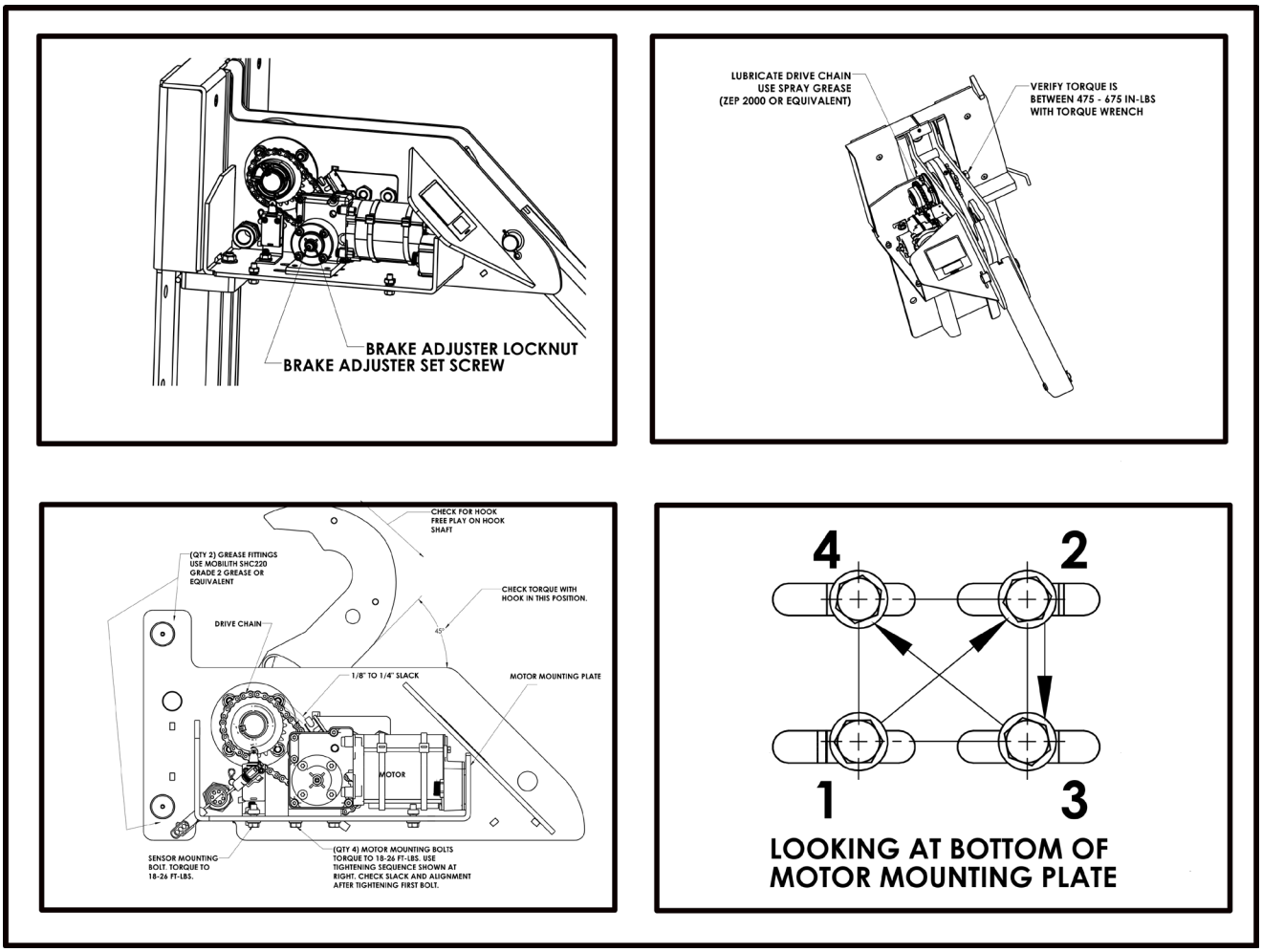


FIGURE 14.A—MAINTENANCE AND LUBRICATION

14. ROUTINE MAINTENANCE

The CB-6x family of control boxes contain a feature that allows the operator to know when the 180 day maintenance cycle is due.

On the 180th day since the last **confirmed** maintenance, the control box will display the screen shown in Figure 14.B.

Please note: **when this screen is displayed, the operator MUST press "ENTER" to return the system to usable state. Maintenance coming due will not prevent the restraint from operating, so it is important to notify the dock manager as soon as possible that maintenance is due.**

FIGURE 14.B—MAINTENANCE REQUIRED SCREEN

When the "ENTER" button is pressed, the system returns to normal operation, and an "M" will be displayed in the bottom right-hand side of the display as shown in Figure 14.C.

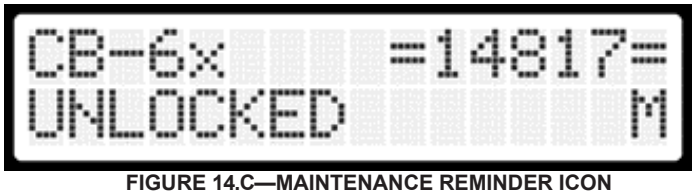


FIGURE 14.C—MAINTENANCE REMINDER ICON

This icon will remain visible until maintenance personnel services the restraint and clears the maintenance state in "Maintenance Mode". See page 90, section 12.6 for the correct procedure for clearing the maintenance state. When the maintenance state is cleared, the "M" will disappear, the "Days until Maintenance Due" counter will reset to 180, and the "Days Maintenance Past Due" counter will reset to 0.

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15. RESET OVERLOAD RELAY

(HYDRAULIC DOCK LEVELER)

First Maintenance Mode Display: "Reset Overload"

- This display appears when the "DOCK LEVELER RAISE ↑" is depressed and the overload relay is tripped.
  - The overload relay is there to protect against damage from occurring to the hydraulic motor.
  - The overload relay measures the load current, and when the current exceeds the Full-Load-Amperage (FLA) setting, see Figure 15.A, over a specific time frame the overload relay is tripped.
  - A tripped overload relay prevents the contactor from operating the hydraulic dock leveler.

During normal operation of the dock leveler (around 16 seconds) the FLA would need to exceed 5.5 to 7.5 times higher than the FLA setting depending on the duration of those 16 seconds.

Potential causes for overload relay tripping.	• Dock leveler is binding. • FLA setting is not set properly (verify setting on electrical diagram found inside the combination control box) • The hydraulic motor is wearing down. • The hydraulic motor could be leaking fluid. • PLC has failed and continues running dock leveler.

Nova Technology does not recommend adjusting the FLA setting to any number besides the proper setting called out on the electrical diagram found inside the combination control box.

Resetting Overload Relay

1. Turn off power supply to the control box at the disconnect(s), if not off already.
2. Open control box door.
3. Turn off circuit breaker.
4. Push down on the blue "RESET" tab located on the bottom of the starter. See Figure 15.A.
5. Turn on circuit breaker.
6. Close control box door.
7. Turn on power supply to the control box at the disconnect(s).

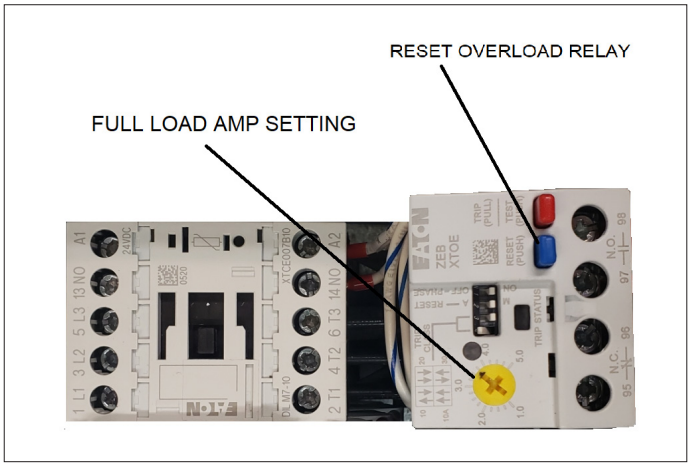


FIGURE 15.A—OVERLOAD RELAY FLA SETTING AND RESET

16. STARTER / CONTACTOR REPLACEMENT PROCEDURE

(FOR HYDRAULIC AND AIR BAG LEVELERS)

First Maintenance Mode Display: "Replace Coil"

- This display appears when the "DOCK LEVELER RAISE ↑" is depressed but the coil in the contactor does not energize.

Contact Nova Technology if the dock leveler is not in the stored position when this occurs.

Replacing Contactor

Removing:

1. Turn off the power supply to the control box at the disconnect(s), and follow proper Lockout/Tagout procedures.
2. Open control box door.
3. Turn off circuit breaker.
4. Disconnect all wires connected to the contactor.
5. Once all wires are disconnected, pull contactor down toward bottom of the control box to compress the spring clip connecting the contactor to the din rail.
6. While still pulling the contactor down, tilt the bottom contactor upwards to release the bottom clip of the contactor from the din rail.
7. Keep the contactor tilted, but now start moving the contactor towards the top of the control box to relieve the compressed spring clip.
8. Then pull the contactor upward to remove it from the control box.

Installing:

1. Insert the contactor into the control box on top of the din rail.
2. Tilt the bottom of the contactor up and move the contactor up to connect the spring clip to the top of the din rail
3. Pull the contactor downward while applying pressure between the contactor and din rail to keep the spring clip connected to the din rail.
4. Level the contactor while still applying pressure.
5. Move the contactor upwards so the bottom clip of the contactor can connect to the din rail.
6. Pull upward to verify contactor is connected to the din rail, if repeat the installing steps 1-5 again.
7. Reconnect all wires to the contactor.
8. Turn on circuit breaker.
9. Close control box door.
10. Remove Lockout/Tagout
11. Turn on power supply to the control box at the disconnect(s).

17. ADJUSTMENTS

ADJUST LIP STOP BOLT(S)

⚠WARNING

Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete.

⚠WARNING

Always stand clear of the dock leveler lip when working in front of the dock leveler.

⚠WARNING

The platform maintenance prop MUST be in the service position when working under the dock leveler. For maximum protection, use an OSHA approved locking device to lock the maintenance prop in the service position. Only the person servicing the equipment should have the key to unlock the maintenance prop.

Check that lip (E) is fully resting on the lip keepers (D) and at the lowest part of the keeper cradle in the center. If lip is not resting properly in keepers, perform the following adjustment.

1. Fully raise platform and engage the maintenance prop. Manually raise the lip:
   - **Air Bag Leveler:** Engage lip maintenance prop.
   - **Hydraulic Leveler:** Engage an external lip support device.

2. Loosen jam nut (B).

3. Adjust stop bolt (C) as necessary.
   - Turn stop bolt "in" (clockwise) to allow lip to fold closer to platform frame (A).

   - Turn stop bolt "out" (counterclockwise) to hold lip further away from platform frame (A).

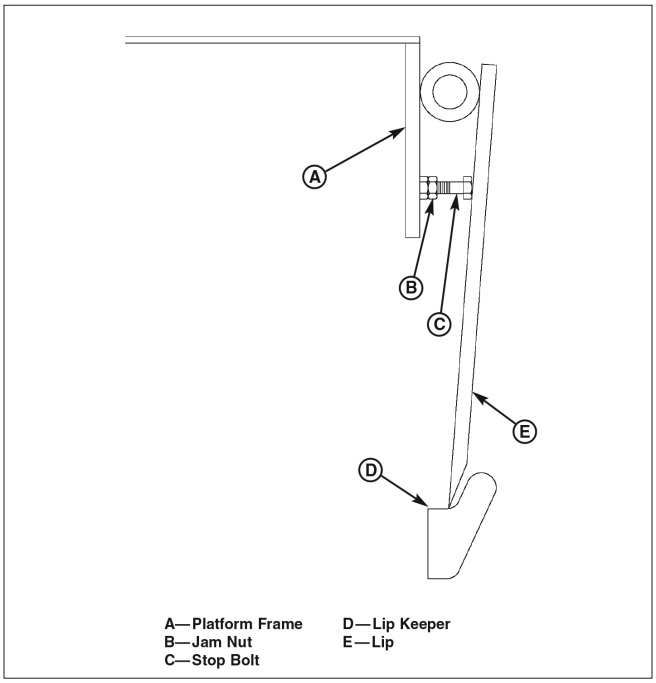
4. Tighten jam nut.

5. Disengage lip maintenance prop.

*Hydraulic levelers have two lip stop bolts.

6. Depress RAISE button, disengage maintenance prop, and allow platform to lower to cross-traffic (stored) position.

7. Check lip position in both keepers. Repeat procedure if necessary.

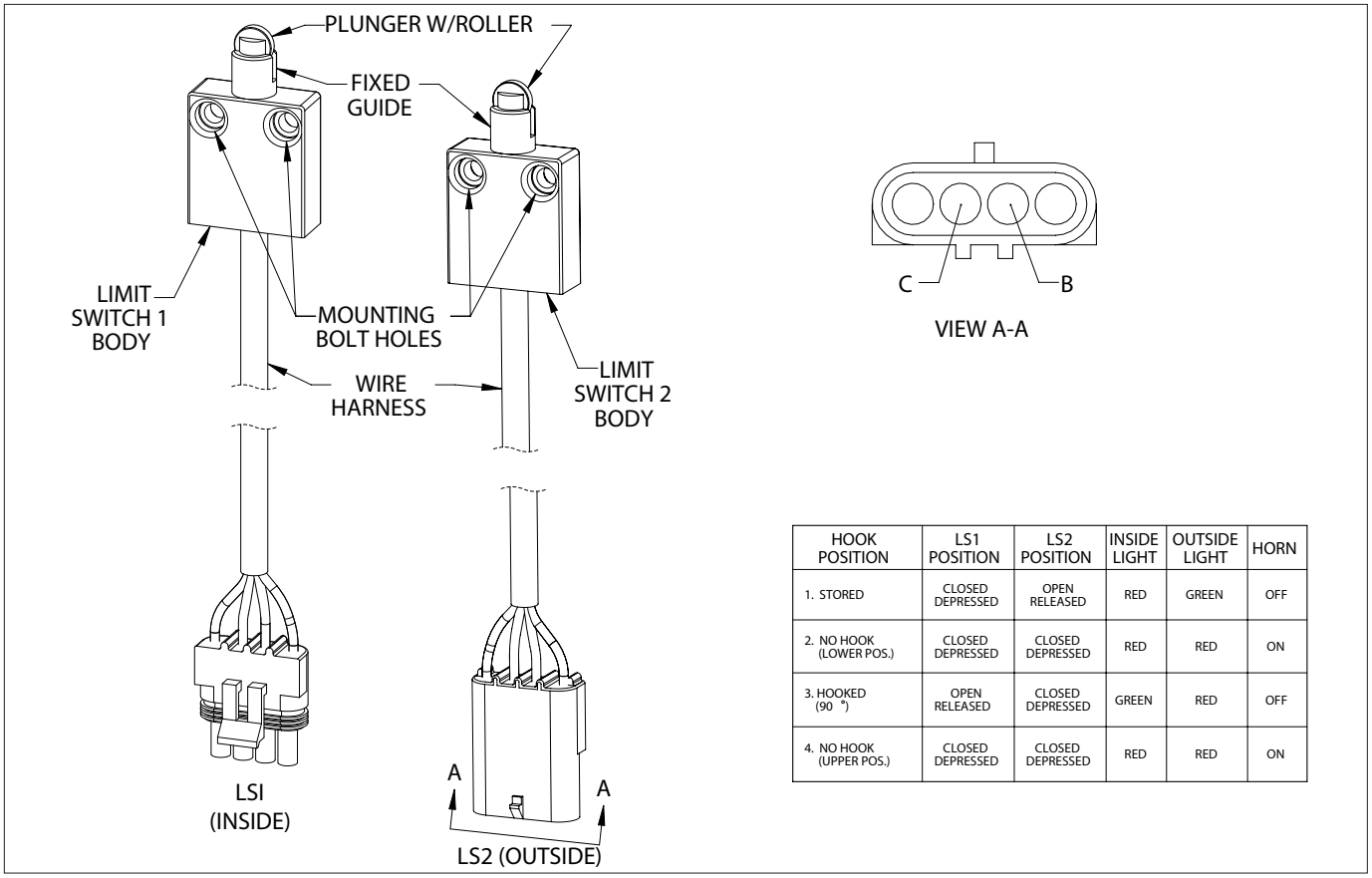


18. LIMIT SWITCH TESTING

LIMIT SWITCH TEST PROCEDURE

- Set multimeter to "RX1" scale for "Continuity Test".
- Attach multimeter leads to pins "B" and "C" of limit switch connector. You should have:
  - plunger released - no meter reading.
  - plunger depressed - a "Full Scale" meter reading.

NOTE: The green (ground) wire of the limit switch does not have to be tested. A continuity test lamp may be used instead of a multimeter.



HOOK POSITION	LS1 POSITION	LS2 POSITION	INSIDE LIGHT	OUTSIDE LIGHT	HORN
1. STORED	CLOSED DEPRESSED	OPEN RELEASED	RED	GREEN	OFF
2. NO HOOK (LOWER POS.)	CLOSED DEPRESSED	CLOSED DEPRESSED	RED	RED	ON
3. HOOKED (90 °)	OPEN RELEASED	CLOSED DEPRESSED	GREEN	RED	OFF
4. NO HOOK (UPPER POS.)	CLOSED DEPRESSED	CLOSED DEPRESSED	RED	RED	ON

FIGURE 18.A—LIMIT SWITCH AND HOOK POSITION CHART

19. PARTS

CARRIAGE ASSEMBLY DRAWING

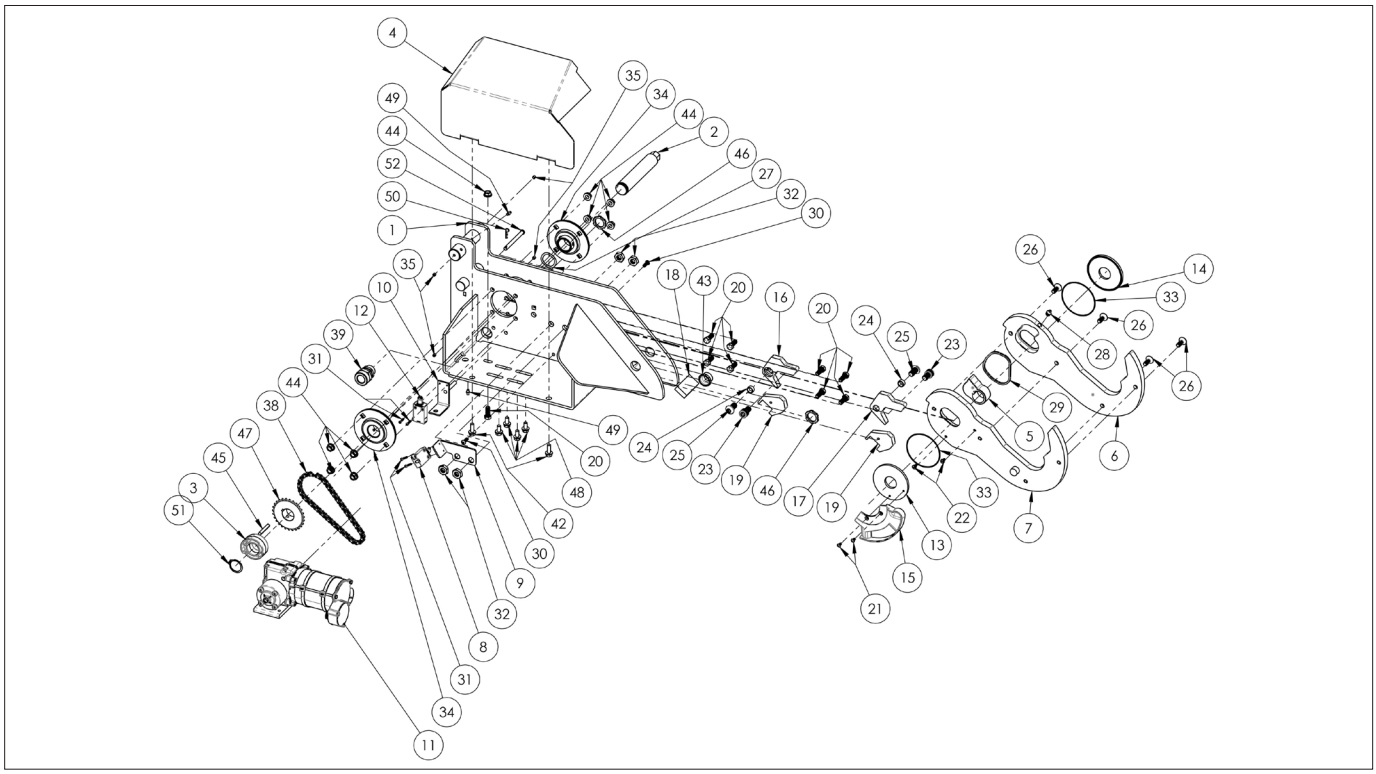


FIGURE 19.A—CARRIAGE ASSEMBLY

CARRIAGE ASSEMBLY PARTS LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	IMAR-004-000	CARRIAGE WELDMENT	1
2	IMAR-020-000	HOOK SHAFT	1
3	IMAR-028-100	CAM - SECONDARY SENSOR	1
4	MF4-165-100	MOTOR/CHAIN COVER	1
5	IMAR-168-103	CAM	1
6	IMAR-168-107	IMAR HOOK HALF B	1
7	IMAR-168-109	IMAR HOOK HALF A	1
8	IMAR-182-100	HOOK POSITION SENSOR	1
9	IMAR-182-110	SENSOR BRACKET	1
10	IMAR-182-201	SENSOR BRACKET WELDMENT	1
11	IMAR-110-000	MOTOR	1
12	IMAR-182-200	HOOK POSITION SENSOR	1
13	IMAR-200-102	SEAL PLATE	1
14	IMAR-200-101	SEAL PLATE	1
15	IMAR-300-101-1	PLASTIC RAMP	1

19. PARTS

CARRIAGE ASSEMBLY PARTS LIST *(continued)*

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
16	IMAR-400-102	SLIDE PLATE - LEFT	1
17	IMAR-400-101	SLIDE PLATE - RIGHT	1
18	IMAR-600-101	SHOCK PAD	1
19	IMAR-700-101	SLIDE PLATE - LOWER STOP	2
20	IMAR-900-101	3/8-16 X 1" LG. HHCS, ZINC PLATED	9
21	IMAR-900-104	#10-24 X 3/8" LG. FHCS, ZINC PLATED	2
22	IMAR-900-105	#10-32 X 1/4" SLDR DIA X 1/8" SLDR LG. SS SHSS	2
23	IMAR-900-108	1/2-13 X 34" LG. SHCS, BLACK OXIDE	2
24	IMAR-900-109	STEEL SLEEVE BEARING	2
25	IMAR-900-110	1/2-13 X 1 BUTTON HEAD HEX DRIVE SCREW	2
26	IMAR-900-111	3/8-16 X 1-1/4" LG. FHCS, BLAC OXIDE	4
27	IMAR-900-112	1.261 ID X 1.621 OD X .019 THK WAVE DISC SPRING	1
28	IMAR-900-113	1/8 PTF-SAE VENTED GREASE FITTING	1
29	IMAR-900-114	1/8" WIDTH, DASH NUMBER 235 SQUARE PROFILE BUNA-N O-RING	1
30	IMAR-900-115	1/4-20 X 4/5" LG. BHCS, BLACK OXIDE	2
31	IMAR-900-117	#6-32 X 5/8" LG SHCS, BLACK OXIDE	4
32	IMAR-900-118	1/2-13 THIN HEAVY HEX NUT, ZINC PLATED	4
33	IMAR-900-119	3.5 ID X 3.629 OD X 1/16 WIDE, DASH NUMBER 043 BUNA-N O-RING	2
34	MF2-017-000	LOCK & LOAD BEARING ASSEMBLY	2
35	MF2-017-002	1/4-28 X 1/4" SOCKET SET SCREW	4
36	IMAR-064-000	"OMNI-LOCK" HORIZONTAL DECAL	2
37	IMAR-068-000	PATENT PENDING DECAL	1
38	MF2-106-000	CHAIN	1
39	MF2-112-000	WIRE HARNESS	1
40	MF2-186-000	PATENT PENDING DECAL	1
41	MF2-199-000	NO STEP DECAL	1
42	MF4-126-000	5/16-18 X 7/8" FLANGE HEAD SCREW	2
43	MF2-034-000	3/4" CONDUIT NIPPLE	1
44	MF2-016-000	3/8-16 SERRATED FLANGE LOCK NUT	9
45	IMAR-900-120	CAM/SPROCKET KEY	1
46	MF2-037-000	3/4" CONDUIT LOCK NUT	2
47	MF2-022-000	HOOK DRIVE SPROCKET W/SET SCREWS	1
48	MF2-117-000	5/16-18 X 5/8" FLANGE HEAD SCREW	4
49	MF2-013-000	GREASE FITTING	1
50	IMAR-900-122	ZINC-PLATED 1050-1095 SPRING STEEL COTTER PINS	1
51	MF2-061-000	1 1/4" EXTERNAL RETAINING RING	1
52	IMAR-900-121	1004-1045 CARBON STEEL CLEVIS PIN	1

19. PARTS

ROLLER TRACK ASSEMBLY DRAWING AND PARTS LIST

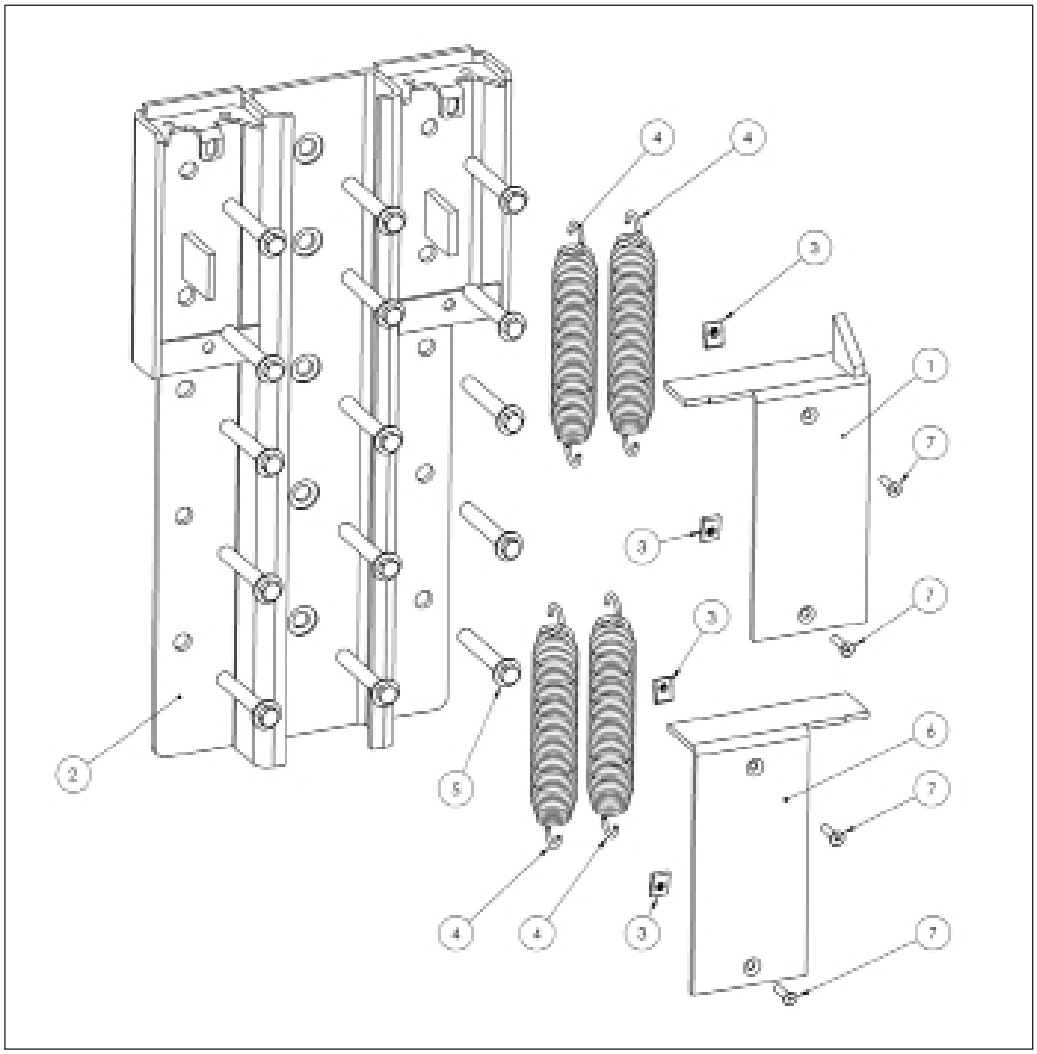


FIGURE 19.B—ROLLER TRACK ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MF2-052-000	SPRING COVER RIGHT HAND	1
2	MF2-048-000	ROLLER TRACK	1
3	MF2-214-000	5/16-18 CLIP ON BARREL NUT	4
4	MF2-050-000	EXTENSION SPRING	4
5	MF2-054-000	5/8" X 4" CONCRETE ANCHOR	15
6	MF2-051-000	SPRING COVER LEFT HAND	1
7	MF2-060-000	5/16"-18 X 1 1/4" FLAT HEAD SOCKET SCREW	4

19. PARTS

SLOPE EXTENSION DRAWING AND PARTS LIST

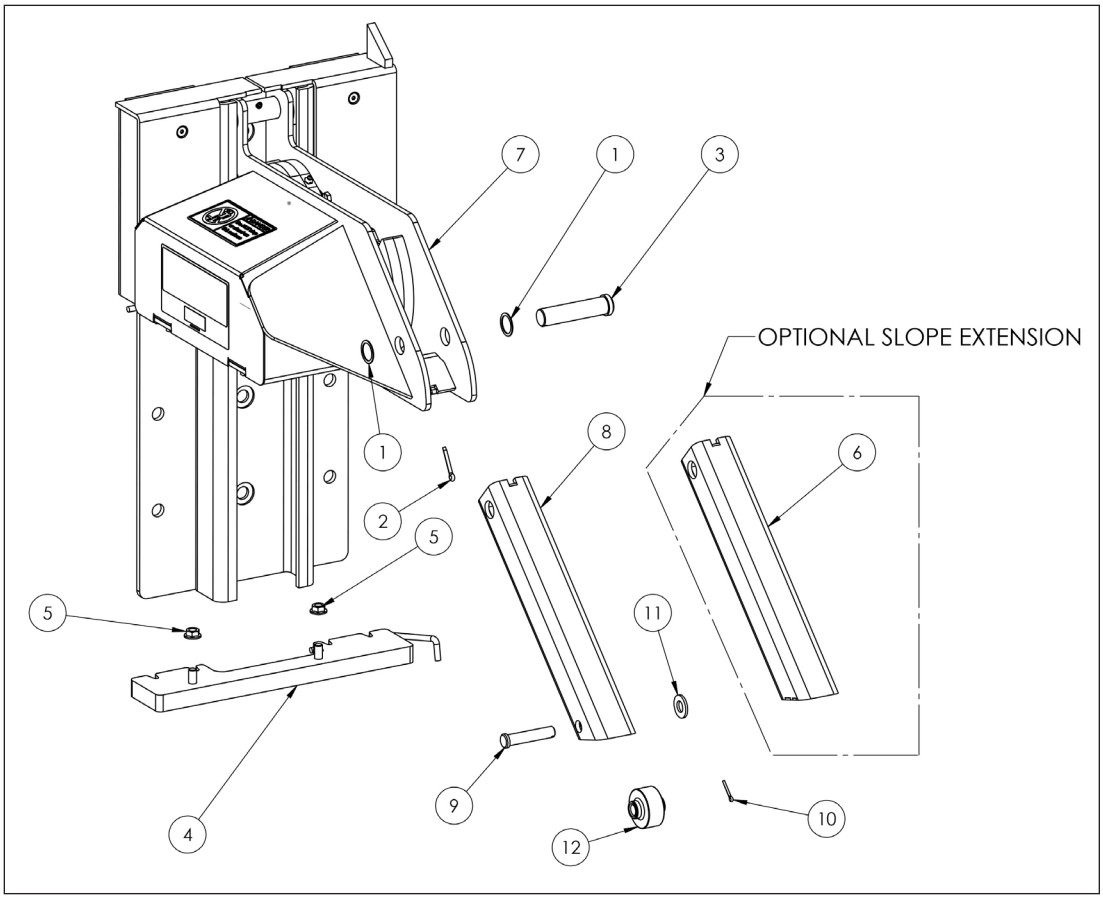


FIGURE 19.C—SLOPE EXTENSION ASSEMBLY

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MF2-045-000	1" X 18 GAUGE FLAT WASHER	2
2	MF2-046-000	COTTER PIN	1
3	MF2-044-000	SLOPE EXTENSION PIVOT PIN	1
4	MF2-043-000	SPRING MOUNTING PLATE ASSEMBLY	1
5	MF2-026-000	7/16-14 SERRATED FLANGE LOCK NUT	2
6	MF2-002-000	SLOPE EXTENSION OPTIONAL	1
7	IMAR-002-000	OMNILOCK CARRIAGE ASSEMBLY	1
8	MF2-132-000	ROLLER SLOPE EXTENSION	1
9	MF2-143-000	5/8" X 3" LONG CLEVIS PIN	1
10	MF2-142-000	COTTER PIN	1
11	MF2-130-000	5/8" SAE FLAT WASHER	1
12	MF2-136-000	ROLLER ASSEMBLY	1

19. PARTS

MISCELLANEOUS PARTS

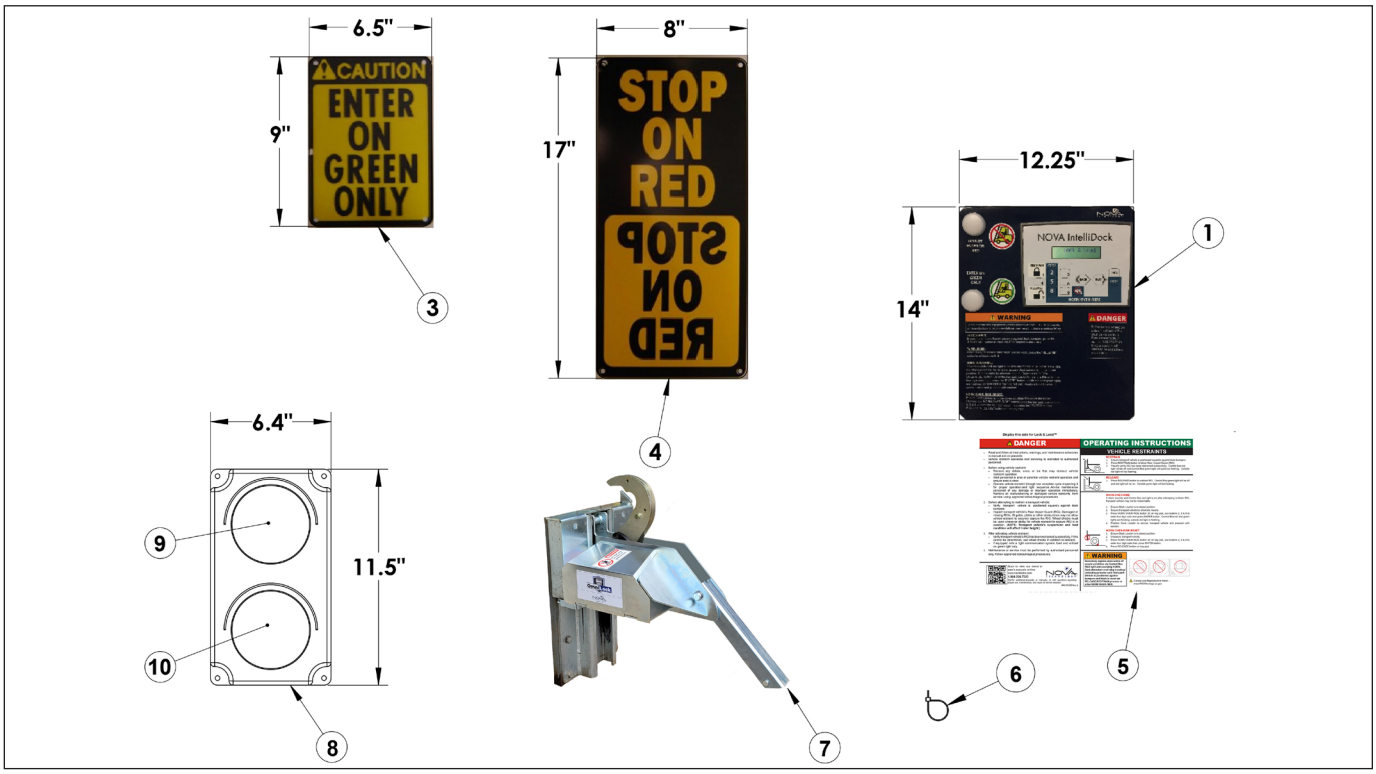


FIGURE 19.D—MISCELLANEOUS PARTS

MISCELLANEOUS REPLACEMENT PARTS LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CB-60 **OR** CB-61 **OR** CB-62	OMNILOCK CONTROL BOX STANDARD **OR** OMNILOCK CONTROL BOX INTERLOCKED **OR** OMNILOCK COMBINATION CONTROL BOX	1
3	MF2-057-000	SIGN, CAUTION - ENTER ON GREEN	1
4	MF2-056-001	CAUTION SIGN	1
5	MF2-215-000	PLACARD - RESTRAINT OPERATION	1
6	MF2-216-000	ZIP TIE FOR CONTROL BOX PLACARD	1
7	IMAR-012-000	OWNERS/USERS MANUAL	1
8	MF4-183-000	OUTSIDE LIGHT	1
9	MF4-183-001	OUTSIDE RED LED LIGHT MODULE	1
10	MF4-183-002	OUTSIDE GREEN LED LIGHT MODULE	1

For replacement parts, contact NOVA Technology.

19. PARTS

CONTROL BOX PARTS

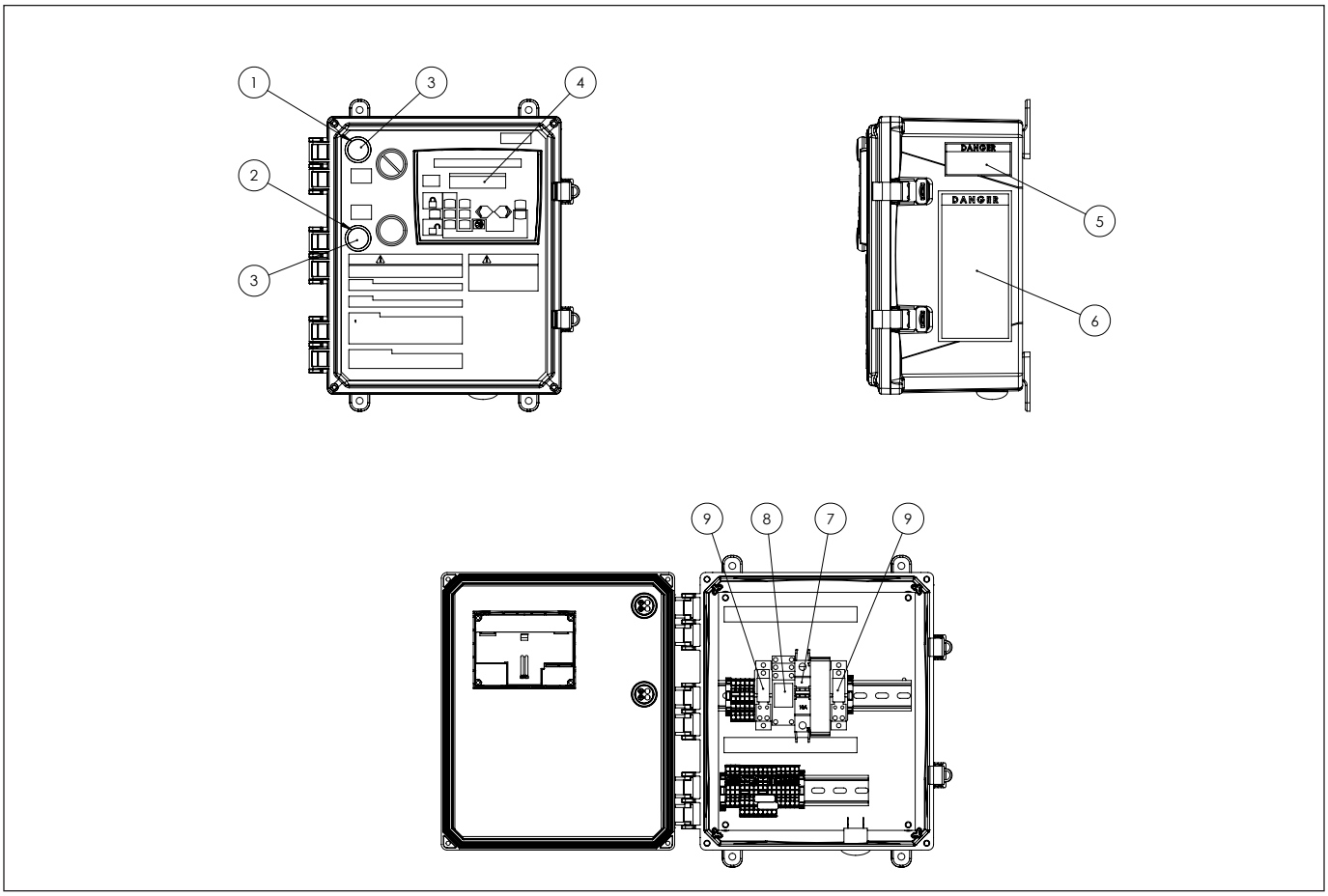


FIGURE 19.E—CONTROL BOX PARTS

CONTROL BOX REPLACEMENT PART LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CB-1000	LIGHT, 24 VDC LED RED PILOT	1
2	CB-1001	LIGHT, 24 VDC LED GREEN PILOT	1
3	CB-1002	COVER, WHITE	2
4	CB-PLC-01	PLC - STANDARD	1
5	MF2-202-000	DECAL, ARC FLASH	1
6	MF2-200-000	DECAL, HOOK POSITION	1
7	CB-1003	BREAKER, CIRCUIT	1
8	CB-1004	RELAY, 12 AMP	1
9	CB-1005	RELAY, 20 AMP, CB-20	1
9	CB-1005	RELAY, 20 AMP, CB-21	2

20. WARRANTY

NOVA TECHNOLOGY INTERNATIONAL, LLC warrants that its products will be free from defects in design, materials and workmanship for a period of one (1) year from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can with reasonable care, be detected. In no event shall any claim be made more than 30 days after this warranty has expired. In order to be entitled to the benefits of this warranty, the product must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment, or lack of maintenance. Periodic lubrication, adjustment, and inspection in accordance with all manufacturers' recommendations are the sole responsibility of the Owner/User.

In the event of a defect, as determined by NOVA TECHNOLOGY INTERNATIONAL, LLC, covered by this warranty, NOVA TECHNOLOGY INTERNATIONAL, LLC shall remedy such defect by repairing or replacing any defective equipment or parts bearing the cost for the parts, labor, and transportation. This shall be exclusive remedy for all claims whether based on contract, negligence or strict liability.

PRODUCT SPECIFIC WARRANTY
OMNILOCK™ VEHICLE RESTRAINT

In addition to the "Standard Product Warranty" provided with all Nova Products, NOVA TECHNOLOGY INTERNATIONAL, LLC guarantees materials, components, and workmanship to be free of defects for the following extended periods:

- Extended 2-Year General Warranty—for a period of two (2) years from date of shipment, this warranty specifically applies to; the roller track assembly, carriage assembly, and control box only.
- Extended 5-Year Structural Warranty—for a period of five (5) years from date of shipment, product will carry a prorated structural warranty. This warranty specifically applies to; the roller track, carriage weldment, chain cover, straight hook, and lower spring bar only.

NOT COVERED UNDER WARRANTY

- Routine maintenance, lubrication, adjustments, including initial field set-up.
- Repairs required as a result of failure to follow routine maintenance procedures specified in the owner's manual, abuse, accident, willful damage, neglect, improper installation, submersion, or shipping damage.

WARRANTY LIMITATIONS

THE ABOVE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NOVA TECHNOLOGY INTERNATIONAL, LLC AND ITS SUBSIDIARIES SHALL NOT IN ANY EVENT BE LIABLE TO ANYONE, INCLUDING THIRD PARTIES, FOR INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES OF ANY KIND INCLUDING BUT NOT LIMITED TO, BREACH OF WARRANTY, LOSS OF USE, LOSS OF PROFIT, INTERRUPTION OF BUSINESS, OR LOSS OF GOODWILL.

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