LOCK & LOAD

Vehicle Restraint
Owner's/User's Manual

NOVA TECHNOLOGY™

Manual No. MF2-012-300_January 2026

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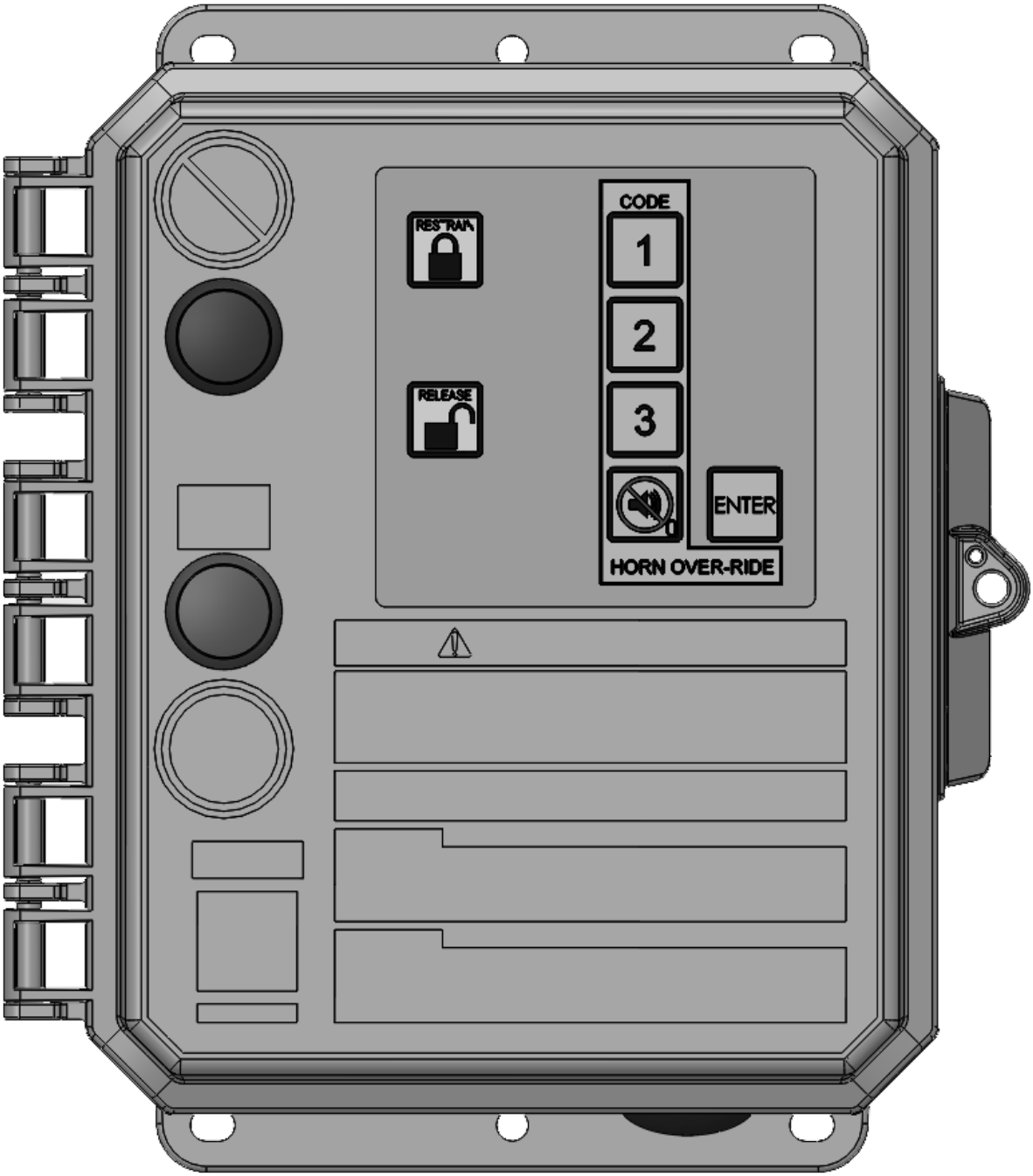
HORN OVER-RIDE FACTORY SETTING CODE

- **HORN OVER-RIDE Factory Setting code is 2213 for CB-00.**



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 Owner's/User's Manual and become thoroughly familiar with 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.

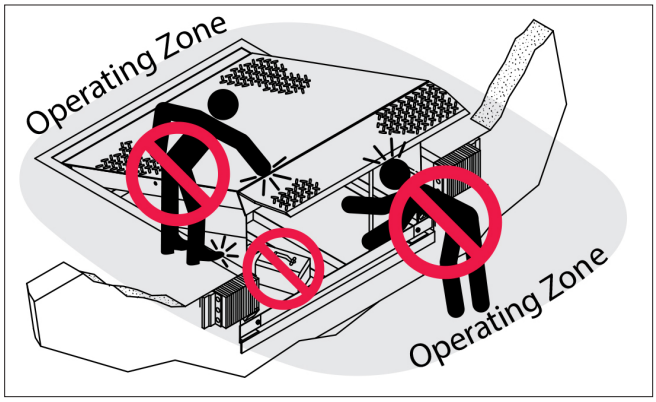


Figure A

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

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

Keep 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

PRECAUTIONS

Operational Precautions

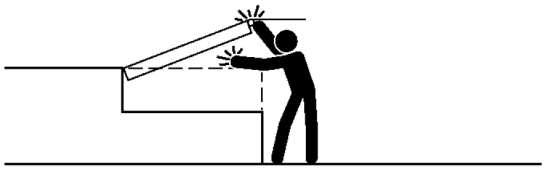
Learn the safe way to operate this equipment. Read and understand the manufacturer's instructions. If you have any questions, ask your supervisor.

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

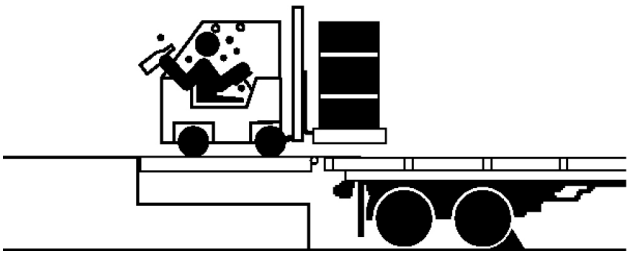
⚠DANGER

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.

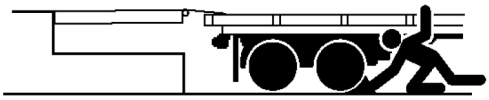


Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.



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

⚠WARNING



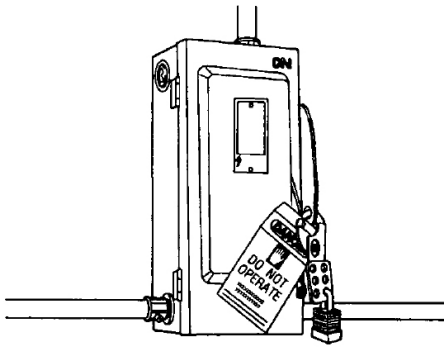
Chock/restrain all transport vehicles. Never remove the wheel chocks until loading or unloading is finished and transport vehicles driver has been given permission to drive away.

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

PRECAUTIONS

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 Parts section of this publication to identify location of the safety items listed below. Call NOVA Technical Service for replacements.

Page #	Item #	Description
55	35	No Step Decal
58	4	Caution Sign
58	3	Enter on Green Sign
59	5	Decal, Arc Flash
59	6	Decal, Hook Position
58	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 work area at dock level and ground level to prevent unauthorized use of 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 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 oil leaks and spills before proceeding with grinding or welding.

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

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

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

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 owners/users 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.

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.

INSTALLATION INSTRUCTIONS

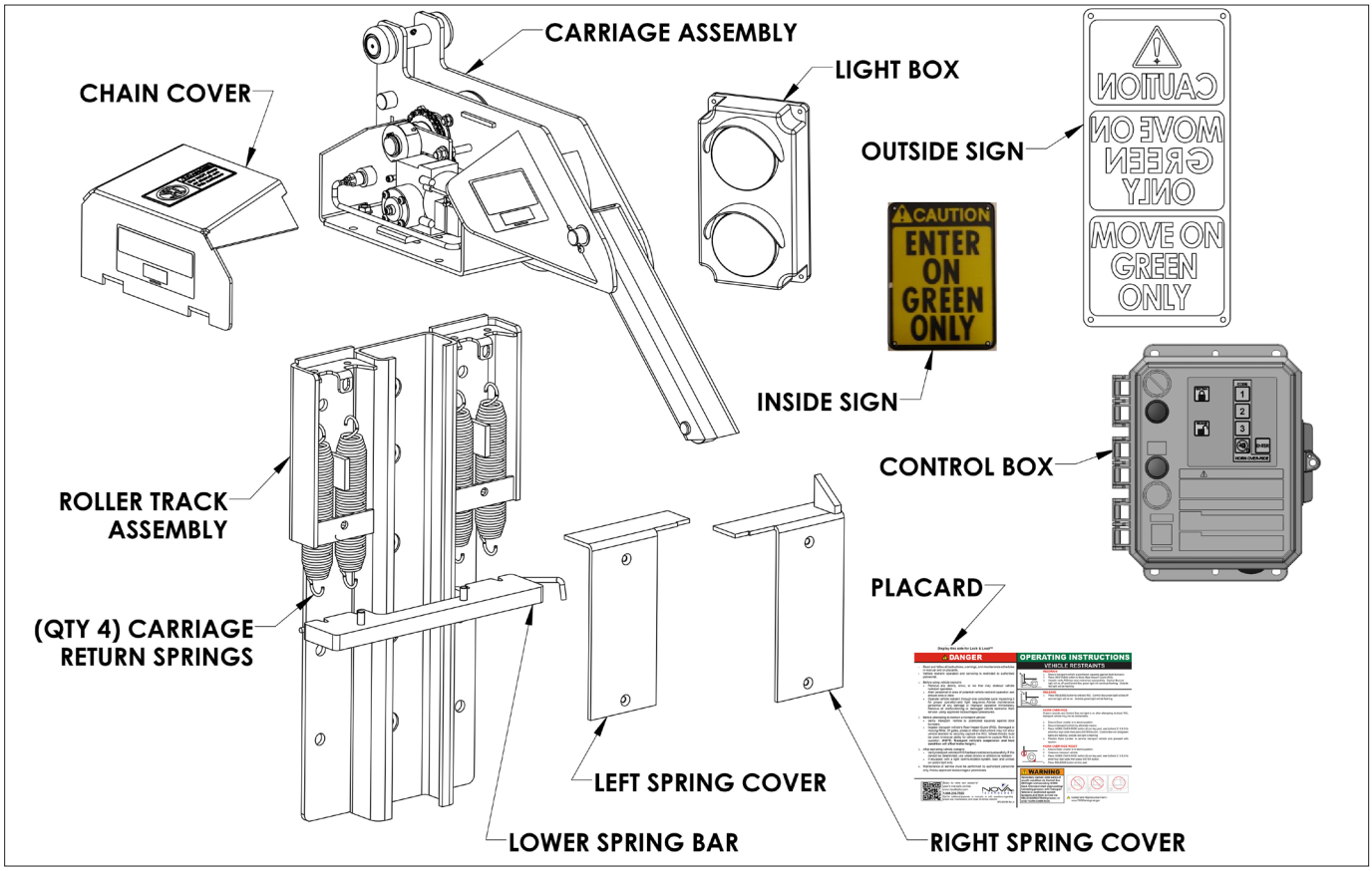


FIGURE 1—LOCK & LOAD™ COMPONENTS DESCRIPTION

NOTICE

A 4" thick bumper is required regardless of whether or not there is a leveler. DO NOT install a NOVA Lock & Load™ 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 LOCK & LOAD™ PARTS

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

INSTALLATION INSTRUCTIONS

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

Follow the simple installation procedures below:

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

INSTALLATION INSTRUCTIONS

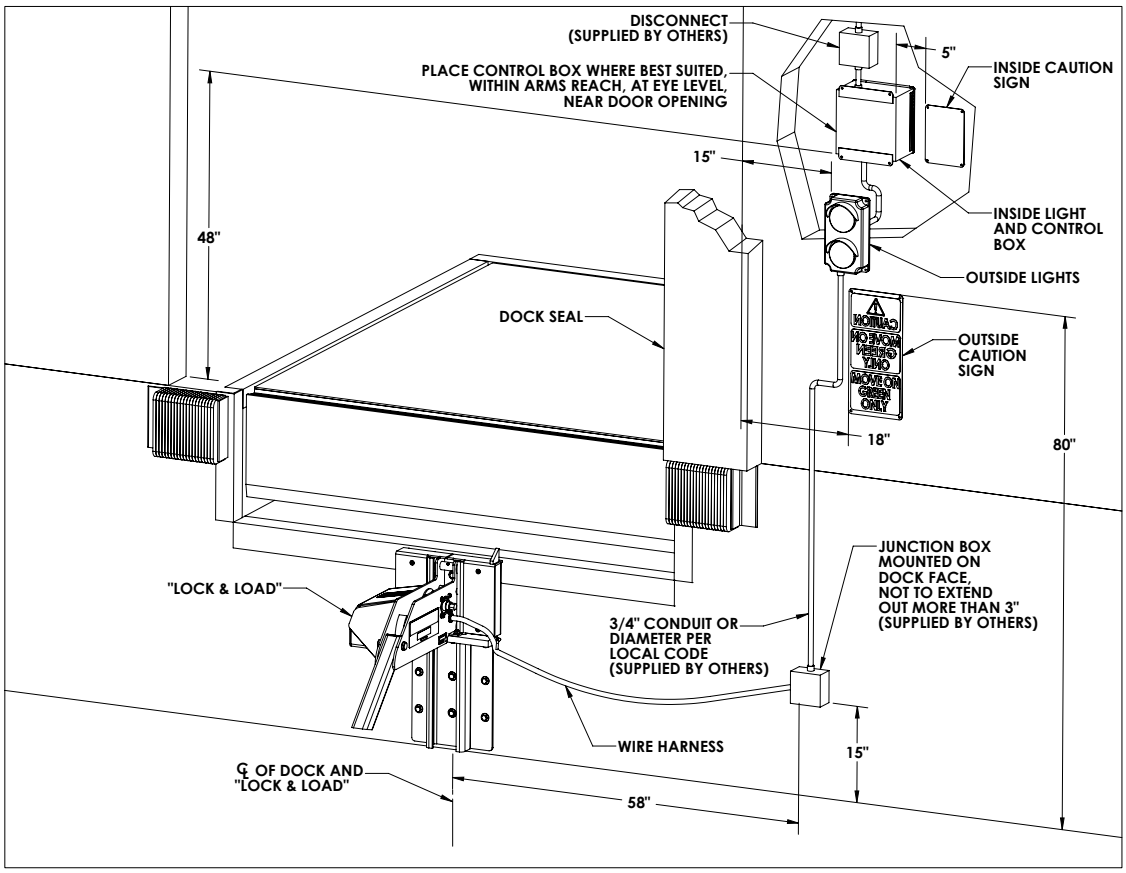


FIGURE 2—SUGGESTED COMPONENT LOCATION

There is one (1) driver outside caution sign and one (1) operator inside caution signed supplied with each NOVA Lock & Load™ vehicle restraint. (Mounting hardware supplied by others.) Mount outside sign as shown in Figure 2. Mount inside sign next to control box. Attach placard to control box with zip tie supplied or mount next to 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 and 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.

INSTALLATION INSTRUCTIONS

INSTALL ROLLER TRACK

Install roller track onto dock face at specified location by welding to an embedded steel plate or by using fifteen (15) concrete anchors provided in conjunction with welding to pit steel and a leveler frame. Refer to Figures 3, 4, and 5.

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 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 NOVA Lock & Load™ vehicle restraint roller track interferes with access hole, contact NOVA Technical Service.

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

NOTICE

Fifteen (15) concrete anchors are provided with each NOVA Lock & Load™ 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 threaded wedge is inserted first. Do not disassemble anchor prior to installation.
4. Install all anchors and torque to 60 ft-lbs. See Figure 3.

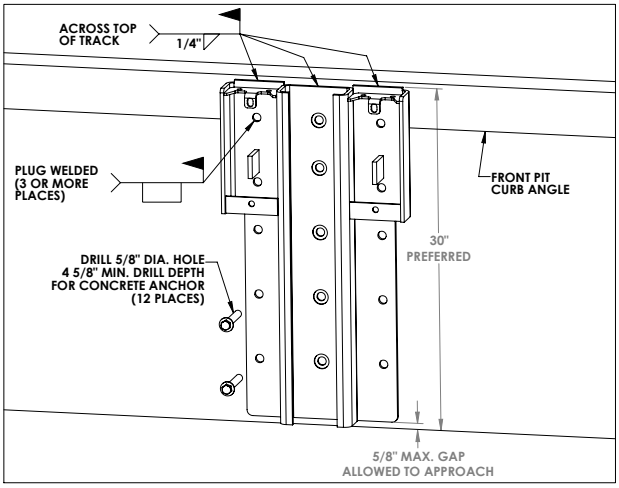


FIGURE 3—ANCHORING ROLLER TRACK

INSTALLATION INSTRUCTIONS

WELDING INSTALLATION INSTRUCTIONS

If 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 motor and limit switch connections from control harness located in outside junction box. Once all welding has been completed, reconnect all wires.

NOTICE

Never install NOVA Lock & Load™ vehicle restraint directly onto concrete block or brick dock face.

When welding NOVA Lock & Load™ 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 embedded mounting plate. All fifteen (15) holes must be either plug welded or anchored. See Figure 4.

Shims must be full length of roller track. Minimum electrode must be 1/8" 7018 or better. See Figure 5.

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

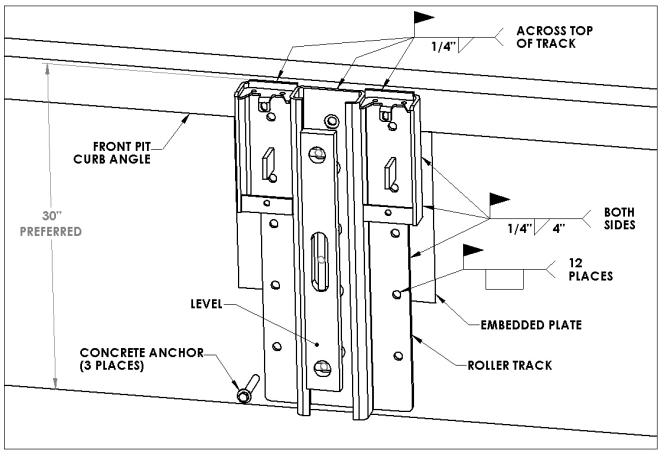


FIGURE 4—WELDING ROLLER TRACK FRONT VIEW (WITH EMBEDDED PLATE)

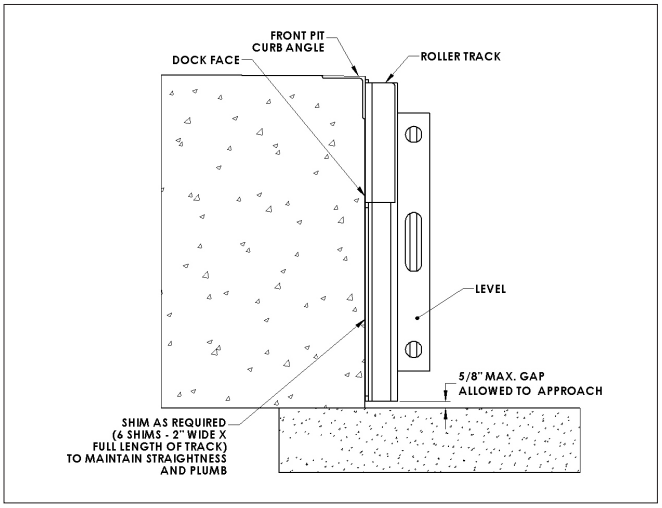


FIGURE 5—WELDING ROLLER TRACK SIDE VIEW

INSTALLATION INSTRUCTIONS

INSTALL VEHICLE RESTRAINT INTO ROLLER TRACK

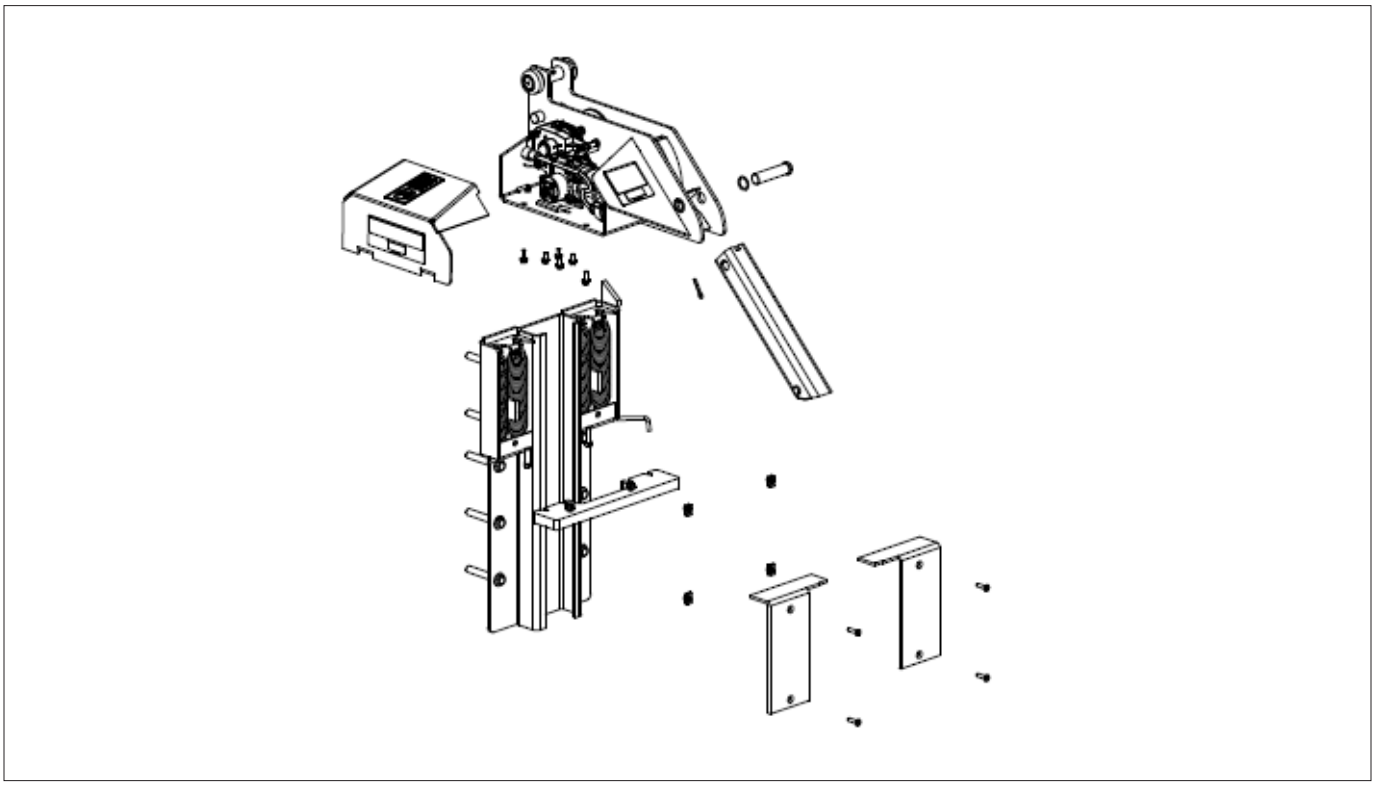


FIGURE 6—INSTALL CARRIAGE ASSEMBLY INTO ROLLER TRACK

⚠ CAUTION

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

- Attach four (4) springs to lower spring bar.
- Pull springs upward and slide over top spring mount on roller track.
- Install roller assemblies onto carriage.
- Slide carriage assembly into roller track. Refer to Figure 6.
- 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 lower spring bar to bottom of NOVA Lock & Load™ vehicle restraint carriage.
- Install motor cover and spring covers.
- Install slope extension.

INSTALLATION INSTRUCTIONS

INSTALL ELECTRICAL COMPONENTS

⚠ DANGER

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

If incoming electrical power for the NOVA Lock & Load™ 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.

NOVA Lock & Load™ vehicle restraint 1/10 HP motor requires 120V, single or 60 Hz power and has a Full Load Amperage of 5.

Two (2) NOVA Lock & Load™ 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 installation of disconnect panel, control panel, and final connections to pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

NOVA Lock & Load™ vehicle restraint assembly includes a 63" long flexible wiring harness, control box with lights, and 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.

CONTROL BOX INSTALLATION GUIDELINES—TEMPERATURE CONTROLLED APPLICATIONS.

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

NOVA NHS Motor Electrical Specifications

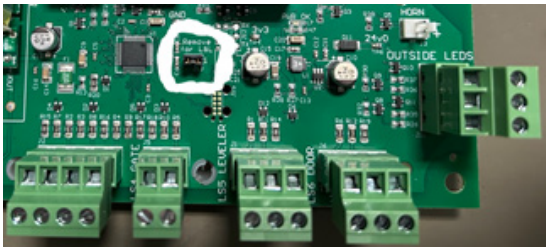
Motor Voltage	RPM	Hz	PHASE	AMP. DRAW MOTOR RUNNING	Elect. Serv. Amperage Req.
110/115/120	3450	60	1	14.4	30*
208	3450	60	1	7.1	20
220/230/240	3450	60	1	7.2	20
208	3450	60	3	3.6	10
220/240	3450	60	3	3.7	10
440-460-480	3450	60	3	1.8	10
575	3450	60	3	1.4	10

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

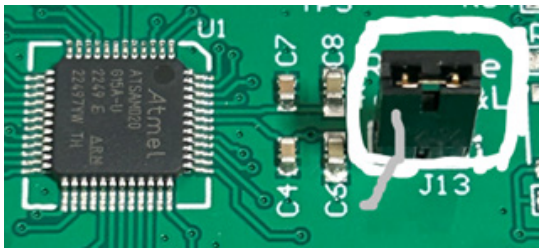
INSTALLATION INSTRUCTIONS

- **CB-00 ELECTRICAL CONNECTIONS INSTALLATION**

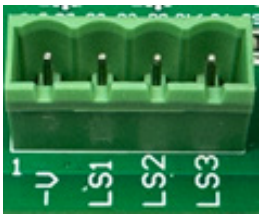
1. Locate FIRMWARE JUMPER on J13 (circled below) on Printed Circuit Board Assembly (PCBA).



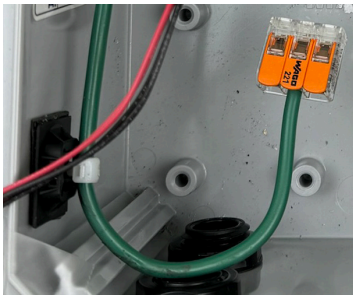
   a. NOVA **Lock & Load™** Vehicle Restraint: **Remove** JUMPER ON J13 (circled below).



2. Connect Vehicle Restraint Communication Wires (Magnetic Sensors/Limit Switches) from page 15 Dock Face Junction Box to 4-Pole Terminal Plus.
   a. Terminal Plug Socket is labeled "-V, LS1, LS2 and LS3".
   b. LS3 is not used for Lock & Load™.

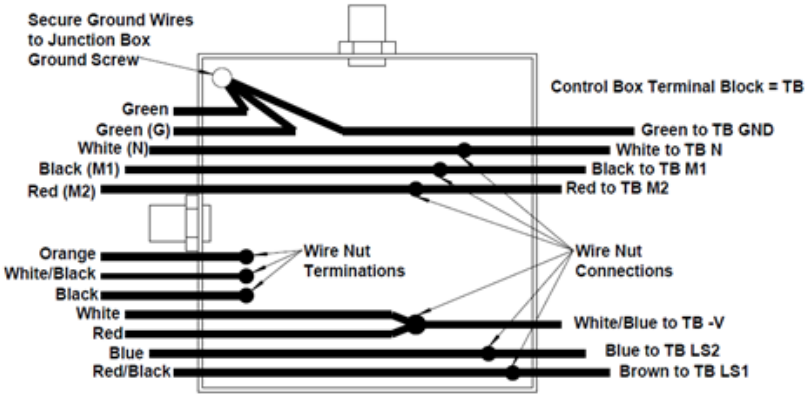


3. Connect Earth Ground and **Vehicle Restraint Gearmotor Ground** to 3-Pole Levernut.
   a. Levernut is factory secured to GREEN wire illustrated below.

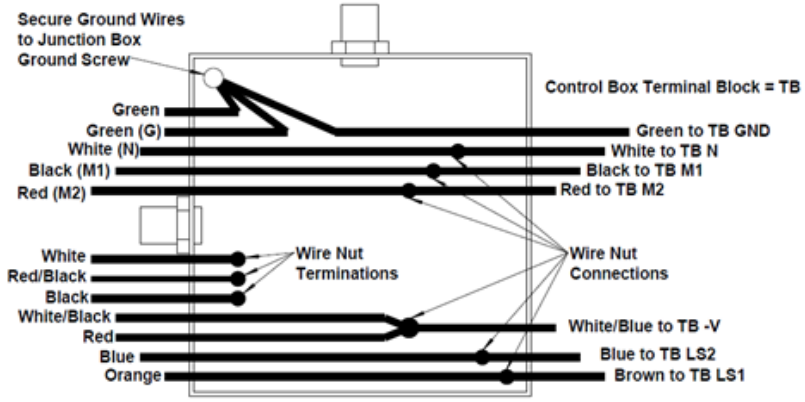


INSTALLATION INSTRUCTIONS

4. NOVA **Lock & Load™ with Magnetic Sensors** Dock Face Junction Box.

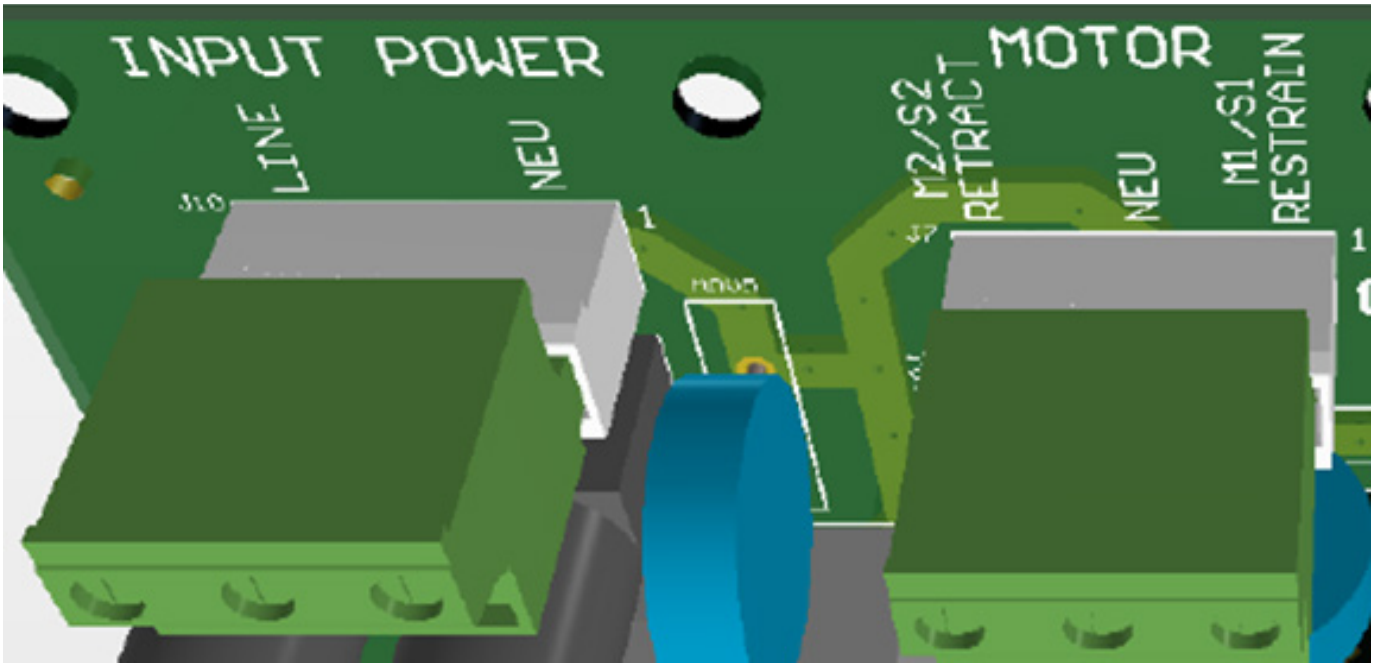


5. NOVA **Lock & Load™ with Limit Switches** Dock Face Junction Box.



INSTALLATION INSTRUCTIONS

6. Connect Vehicle Restraint Communication Wires (M1, M2 and N) from Dock Face Junction Box to 3-Pole Terminal Plug.
   a. Terminal Plug Socket is labeled MOTOR with pins listed below:
      i. M1 to M1/S1 RESTRAIN
      ii. M2 to M2/S2 RELEASE
      iii. N to NEU (neutral)



⚠ CAUTION

Electrical power must be OFF when:
- **Connecting incoming power wires to 3-Pole Terminal Plug**
- **Engaging or Disengaging Terminal Plug with PCBA socket**

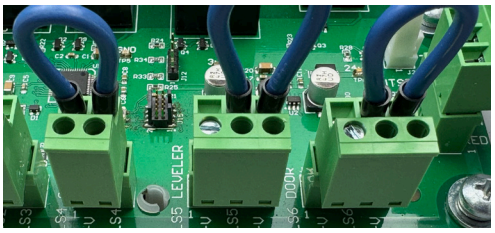
7. Connect incoming 120VAC from Electrical Disconnect to 3-Pole Terminal Plug.
   a. Terminal Plug Socket is labeled INPUT POWER with pins listed below:
      i. Line to LINE
      ii. Neutral to NEU

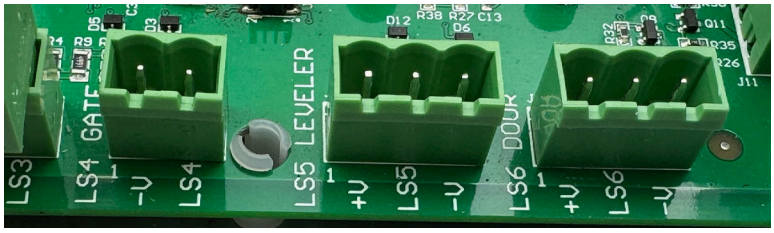
8. Connect 24VDC Outside Signal Lights to 3-Pole Terminal Plus with pins labeled "-V, GRN, RED".
   a. Black wire to "-V"
   b. Red wire with "GREEN LIGHT" label to "GRN"
   c. Red Wire without label to "RED"

INSTALLATION INSTRUCTIONS

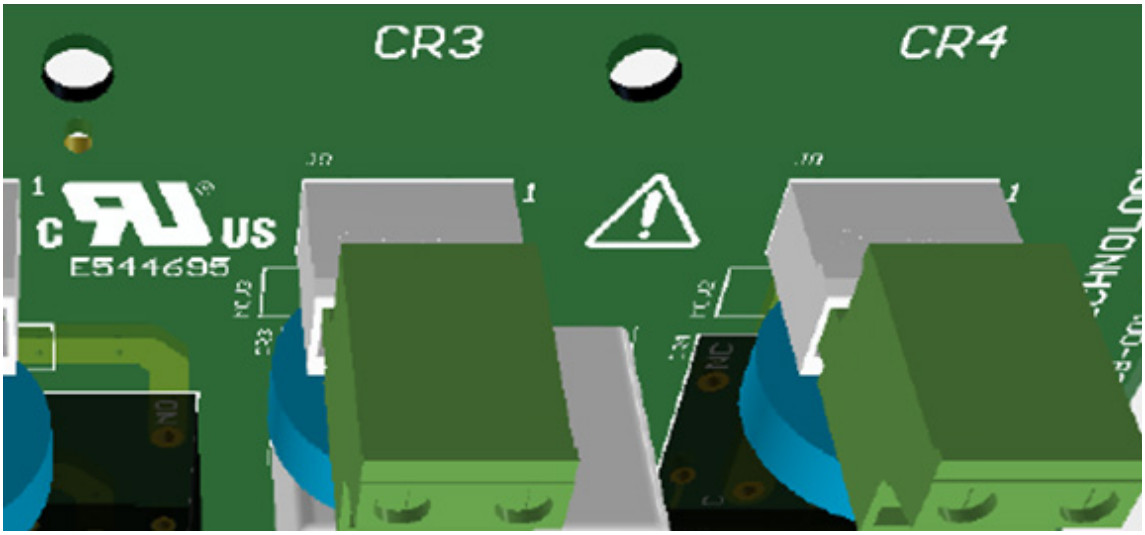
CB-00 ELECTRICAL CONNECTIONS INTERLOCK INSTALLATION

- CB-00 PCBA Terminal Block inputs for interlocked devices have factory installed Jumper Wires illustrated below:





- Interlock External SENSORS by replacing Jumper Wire with Sensor connection listed below:
  - NOVA **Dock Gate Sensor** (NDG-RS)
    - LS4 to White wire
    - -V to Black wire
  - NOVA **Dockleveler Lip Sensor** (CB-1032)
    - LS5 to Black wire
    - -V to Blue wire
    - +24VDC to Brown wire
  - NOVA **Dock Door Sensor** (CB-1034)
    - LS6 to White wire
    - -V to Blue wire
    - +24VDC to Brown wire
- Interlock External CONTROL by routing Power Source through PCBA Dry Contact Relays listed below:
  - CR3 to Dockleveler Push Button Station
  - CR4 to Dock Door Push Button Station



INSTALLATION INSTRUCTIONS

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

NOTE: Installation of photoelectric sensors must be completed before wiring overhead dock door controls into combination control box.

1. Verify overhead door is fully closed. Fasten reflector bracket to stile on overhead door.
   a. See FIGURE 7.
      i. Roughly 24 to 36 inches from the floor.
      ii. Reflector must be facing the closest door track.
   b. 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 8.
   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. Install photoelectric sensor into mounting bracket.
   a. See FIGURE 9.

4. Connect M12 cord (CB-1016) to photoelectric sensor and route other end of cord to control box.

5. Perform electrical connections per instructions found on page 17.

6. Once photoelectric sensors are wired and control box is powered up, verify three LEDs on 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 17.
   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.

INSTALLATION INSTRUCTIONS

SET-UP PHOTOELECTRIC SENSOR (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 reflector to a position that causes orange LED to illuminate constantly. Secure reflector in this position.

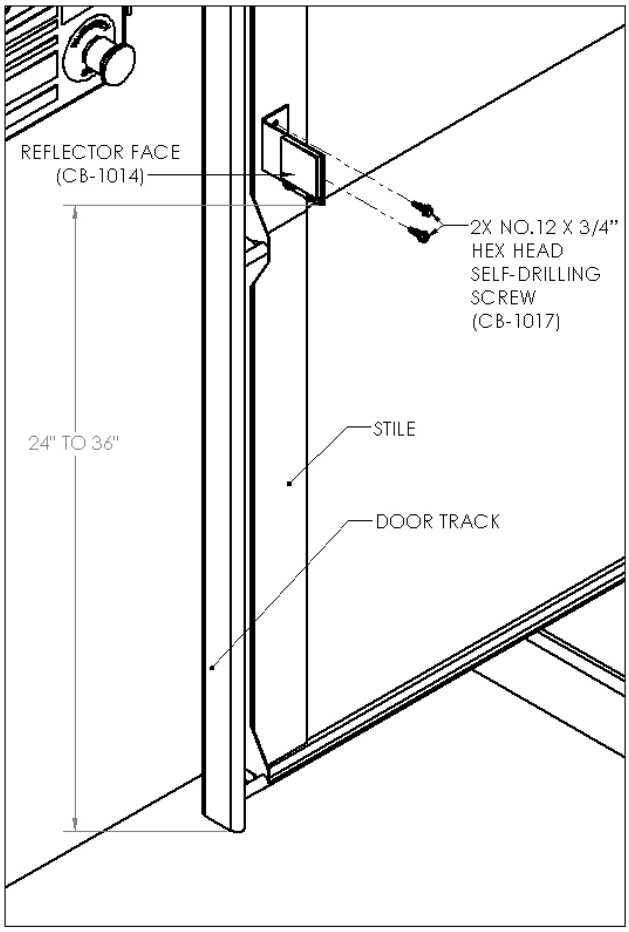


FIGURE 7—MOUNTING REFLECTOR

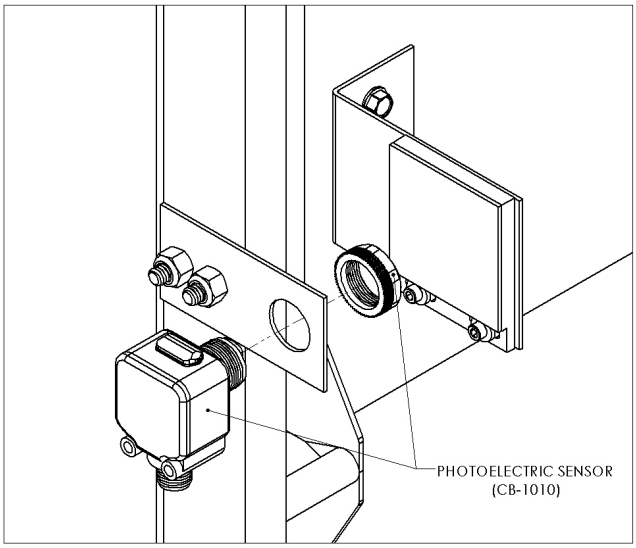


FIGURE 9—INSTALLING PHOTOELECTRIC SENSORS

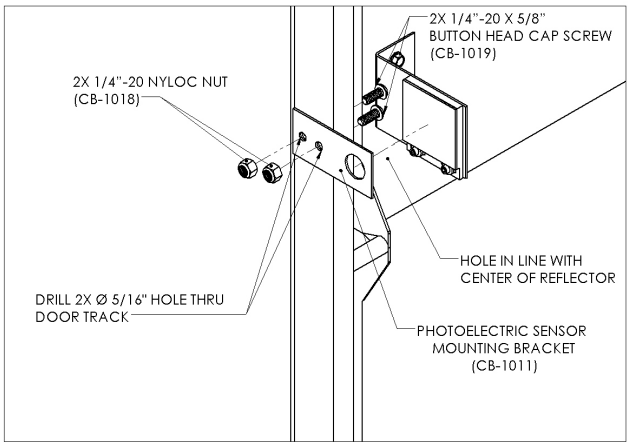


FIGURE 8—MOUNTING REFLECTOR

INSTALLATION INSTRUCTIONS

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

1. Fully raise platform and engage maintenance prop. Manually raise 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).

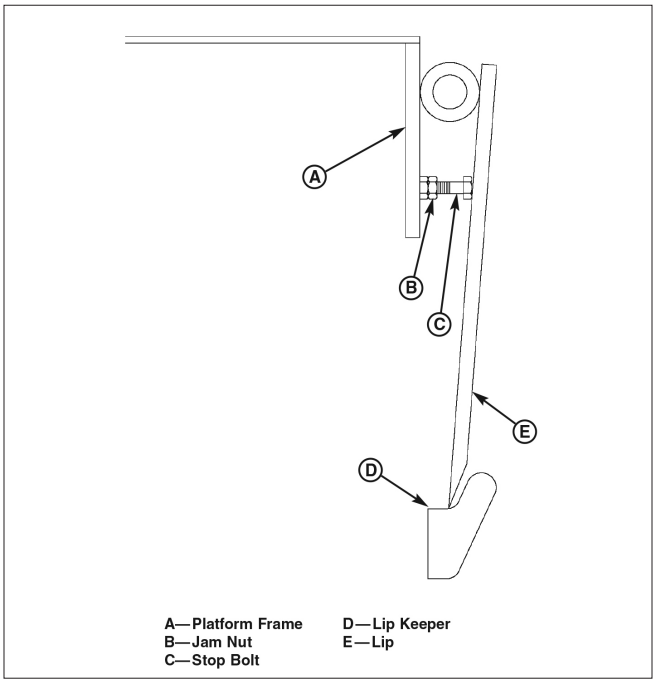
4. Tighten jam nut.

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.



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

INSTALLATION INSTRUCTIONS

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INSTALLATION INSTRUCTIONS

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

- If control box installation is with a new dock leveler installation see Section 1.
- If 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 interlock 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 dock leveler.
2. Check that lip is fully resting on lip keepers and at lowest part of keeper cradle in center. If not, proceed to section: ADJUSTMENTS – ADJUST LIP STOP BOLT(S) on page 20.
3. Place dock leveler in maintenance/service position by following O.E.M. instructions.
4. Place Proximity Sensor Bracket Assembly (CB-1028) on sub-frame as shown in Figure 10 on page 25.
5. Fasten Proximity Sensor Bracket Assembly, with two 1/4"-20 X 1" hex head self-drilling screws, to the sub-frame as shown in Figure 11 on page 25. (If bracket assembly cannot be fastened to sub-frame, remove sensor from bracket before welding bracket to pit metal).
6. Remove end of screws to eliminate any sharp points on sub-frame and to create a flush surface as shown in Figure 12 on page 25.
7. Connect M12 cord (CB-1016 to proximity sensor and run other end of cord to pit junction box.
8. Perform electrical connections per instructions found on page 17.
9. Place dock leveler in stored position from maintenance/service position by following O.E.M. instructions.
10. Once the proximity sensor is wired and control box is powered up, verify 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 17.
    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 installation of disconnect panel, control panel, and final connections to pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

INSTALLATION INSTRUCTIONS

SET-UP PROXIMITY SENSOR
(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 interlock 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 dock leveler.
2. Check that lip is fully resting on lip keepers and at lowest part of keeper cradle in center. If not, refer to page 20.
3. Place dock leveler in maintenance/service position by following O.E.M. instructions.
4. Place Proximity Sensor Bracket Assembly (CB-1028) on sub-frame as shown in Figure 10 on page 25.
5. Fasten Proximity Sensor Bracket Assembly, with two 1/4"-20 X 1" hex head self-drilling screws, to the sub-frame as shown in Figure 11 on page 25. (If bracket assembly cannot be fastened to the sub-frame, remove sensor from bracket before welding bracket to pit metal).
6. Remove end of the screws to eliminate any sharp points on sub-frame and to create a flush surface as shown in Figure 12 on page 25.
7. Connect M12 cord (CB-1016 to the proximity sensor and run other end of the cord to pit junction box.
8. Perform electrical connections per instructions found on page 17.
9. Place dock leveler in stored position from maintenance/service position by following O.E.M. instructions.
10. Once proximity sensor is wired and control box is powered up, verify two LEDs on 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 17.
    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.

INSTALLATION INSTRUCTIONS

SET-UP PROXIMITY SENSOR
(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 interlock 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 dock leveler.
2. Check that lip is fully resting on the lip keepers and at lowest part of keeper cradle in center. If not, refer to page 20.
3. Place dock leveler in the maintenance/service position by following O.E.M. instructions.
4. Place Proximity Sensor Bracket Assembly (CB-1028) on sub-frame as shown in Figure 10 on page 25.
5. Fasten Proximity Sensor Bracket Assembly, with two 1/4"-20 X 1" hex head self-drilling screws, to the sub-frame as shown in Figure 11 on page 25. (If bracket assembly cannot be fastened to sub-frame, remove sensor from bracket before welding bracket to pit metal).
6. Remove end of the screws to eliminate any sharp points on the sub-frame and to create a flush surface as shown in Figure 12 on page 25.
7. Connect M12 cord (CB-1016) to the proximity sensor and run other end of cord to pit junction box.
8. Perform electrical connections per instructions found on page 17.
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 17.
    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.

INSTALLATION INSTRUCTIONS

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

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

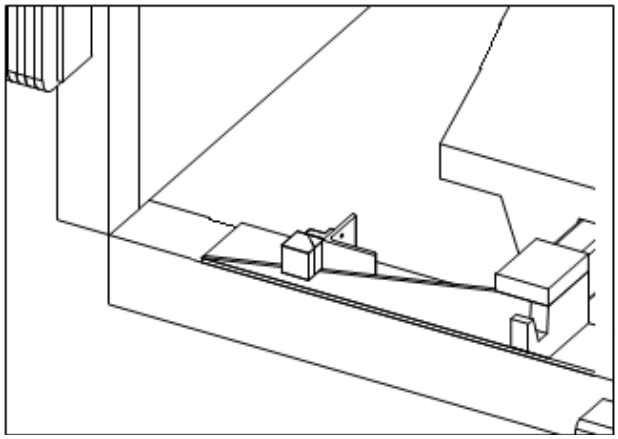


FIGURE 10—INSTALLING PROXIMITY SENSOR BRACKET

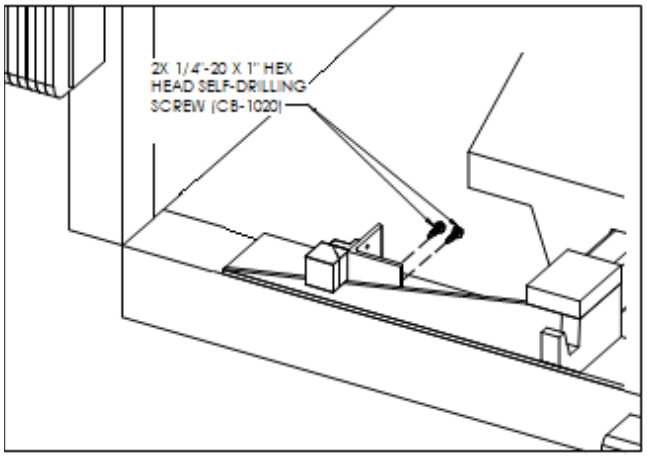


FIGURE 11—FASTEN BRACKET TO SUB-FRAME

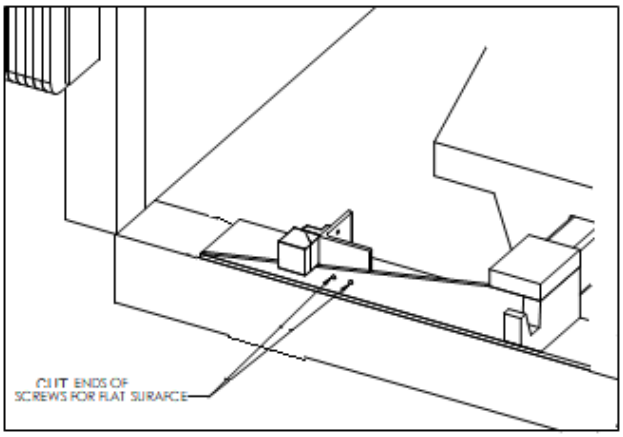
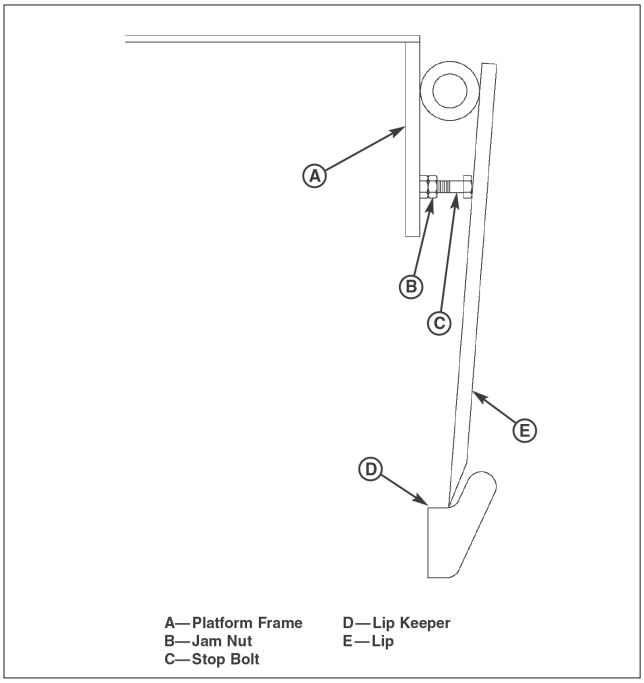


FIGURE 12—REMOVED ENDS OF SCREWS



INSTALLATION INSTRUCTIONS

TEST OPERATION: Standard Control Box (CB-00)

This test operation is specifically for installation instructions to verify NOVA Lock & Load™ Standard Control Box (CB-00) is working properly. If NOVA Lock & Load™ does not work properly, contact NOVA Technology.

⚠ CAUTION

Electrical power must be OFF when connecting incoming power wires:

- **To 3-Pole Terminal Plug,**
- **When engaging/disengaging Terminal Plug with PCBA socket**.

1. Power-Up
   a. Turn on power to CB-00 control box at Electrical Disconnect.
   b. Verify CB-00 control Box:
      i. RED light is flashing
      ii. HORN is not sounding
   c. Verify outside GREEN light is flashing.

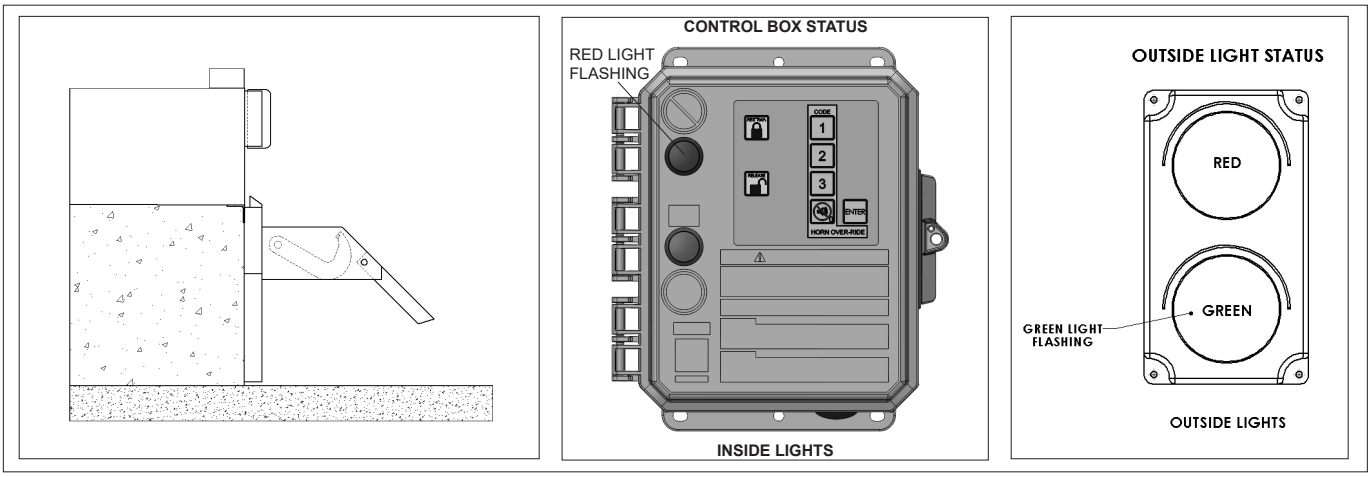


FIGURE 13—UNLOCKED POSITION/NO VEHICLE PRESENT

INSTALLATION INSTRUCTIONS

2. Test RESTRAIN/RELEASE Functions
   a. Press "RESTRAIN" button.
   b. Verify barrier has rotated to up position.
   c. Barrier will self-store if RIG is not present.
   d. Verify conditions listed below after barrier is self-stored.
      - Control Box Pulsing HORN.
      - Control Box Flashing RED Light.
      - Outside Signal Flashing RED Light.
   e. Press RELEASE when barrier is in Stored Position to:
      - Stop HORN and
      - Change Outside Signal from Flashing RED to Flashing GREEN.
   f. Place wheel chock or other RIG simulator onto vehicle restraint carriage.
   g. Press RESTRAIN button.
   h. Verify barrier has captured RIG simulator.
   i. Verify conditions listed below after barrier is self-stored.
      - Control Box HORN is not sounding.
      - Control Box Flashing GREEN Light.
      - Outside Signal Flashing RED Light.
   j. Press RELEASE button.
   k. Remove RIG simulator from carriage.

INSTALLATION INSTRUCTIONS

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

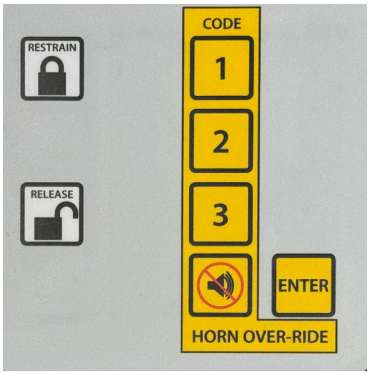


FIGURE 16—HORN OVER-RIDE INITIATION

   b. Enter Factory Set four-digit Over-Ride code listed below:
      - CB-00 code is 2213
      - CB-20/21 code is 5528 and note Display options listed below:
        - "Wrong PW: Reenter Or wait" text will appear if wrong code is entered, but
        - "L-U CB-40_..." or "L-U CB-21-..." will reappear in 30 seconds if no code is entered.

   c. Press "ENTER" button.

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

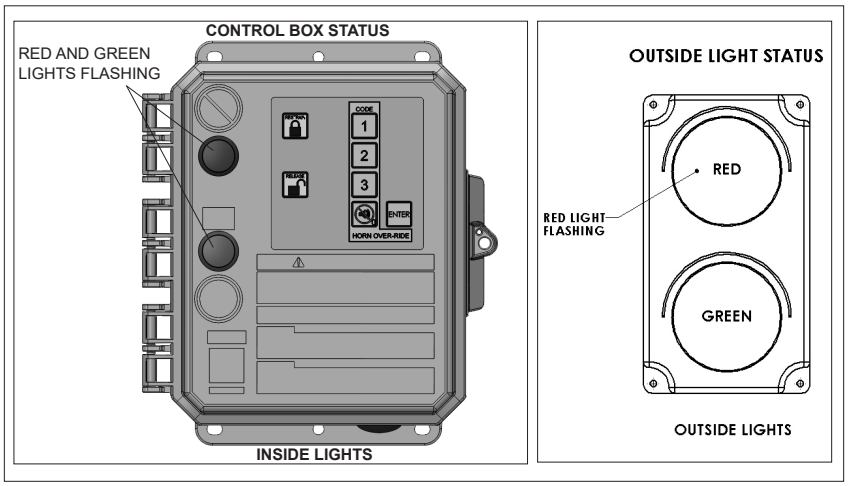


FIGURE 17—HORN OVER-RIDE LIGHT INDICATION

INSTALLATION INSTRUCTIONS

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

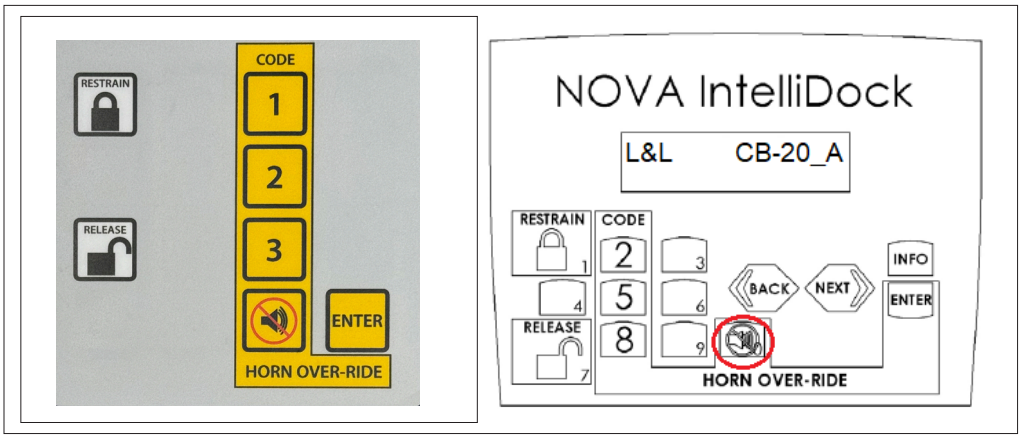


FIGURE 20—DISENGAGING HORN OVER-RIDE

   c. Enter Factory Set four-digit Over-Ride code listed below:
      - CB-00 code is 2213
      - CB-20/21 code is 5528 and note Display options listed below:
        - "Wrong PW: Reenter Or wait" text will appear if wrong code is entered, but
        - "L-U CB-40_..." or "L-U CB-21-..." will reappear in 30 seconds if no code is entered.

      Press "ENTER" button.
   d. Verify RED light on control box is flashing.
   e. No HORN should be sounding.
   f. Verify outside GREEN light is flashing.

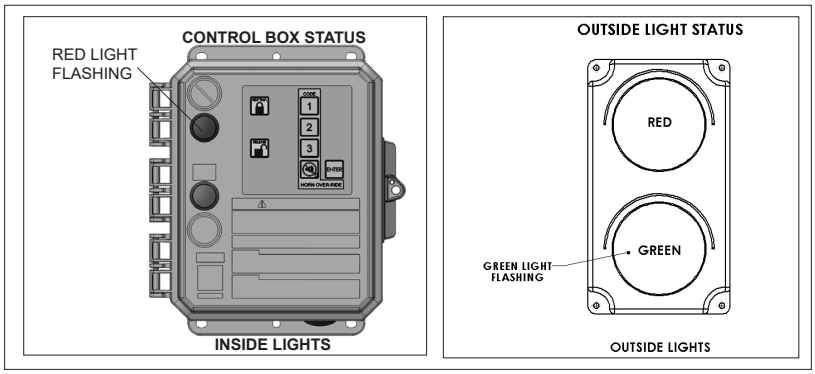


FIGURE 21—ENGAGED STATE LIGHT INDICATION

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INSTALLATION INSTRUCTIONS

INTERLOCK CONTROL BOX OPERATION OVERVIEW

CB-00:

- RESTRAIN/RELEASE functional only with all three conditions below:
  - Gate Closed.
  - Leveler Stored.
  - Door Closed.
- OPEN Gate functional only with one of conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.
- RAISE Leveler functional only with one of conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.
- OPEN Door functional only with one of conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.

CB-21-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 regardless of Hook position.

CB-21-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-21-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 regardless of Hook position.

INSTALLATION INSTRUCTIONS

TEST OPERATION: PLC Control Boxes (CB-20/21)

This test operation is specifically for PLC based control boxes used to operate NOVA Lock & Load™ vehicle restraints. If system does not work properly, contact NOVA Technology for assistance.

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.

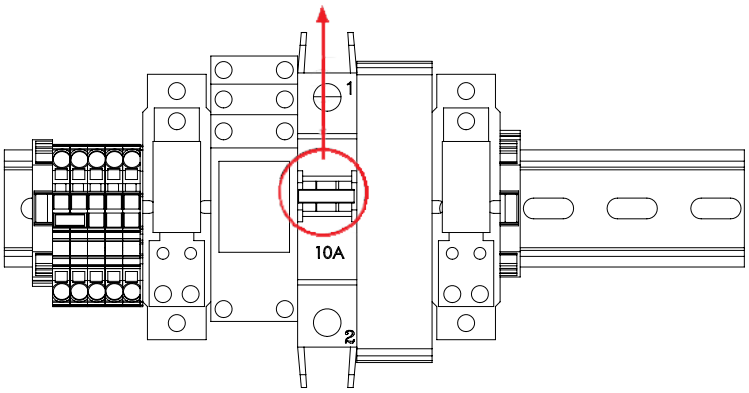


FIGURE 24—CIRCUIT BREAKER (CB-21)

   d. Close cover of the control box.
   e. Re-latch metal clips to secure cover.
   f. Remove protective film from PLC display.
   g. Verify PLC screen displays one of the options listed below, with understanding that "x" is a variable representing revision level of software:
      - CB-20_x
      - CB-21-A_x
      - CB-21-B_x
      - CB-21-C_x
   h. Verify RED light on control box is flashing.
   i. Verify outside GREEN light is flashing.

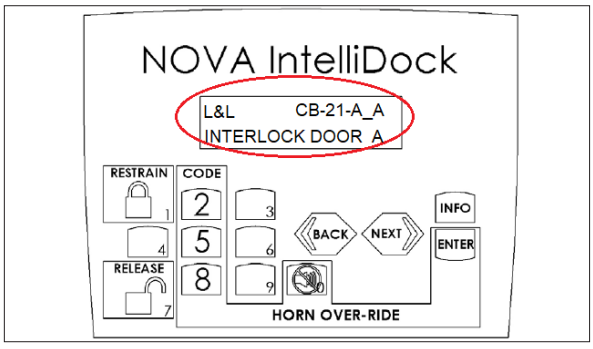


FIGURE 25—STANDARD PLC SCREEN

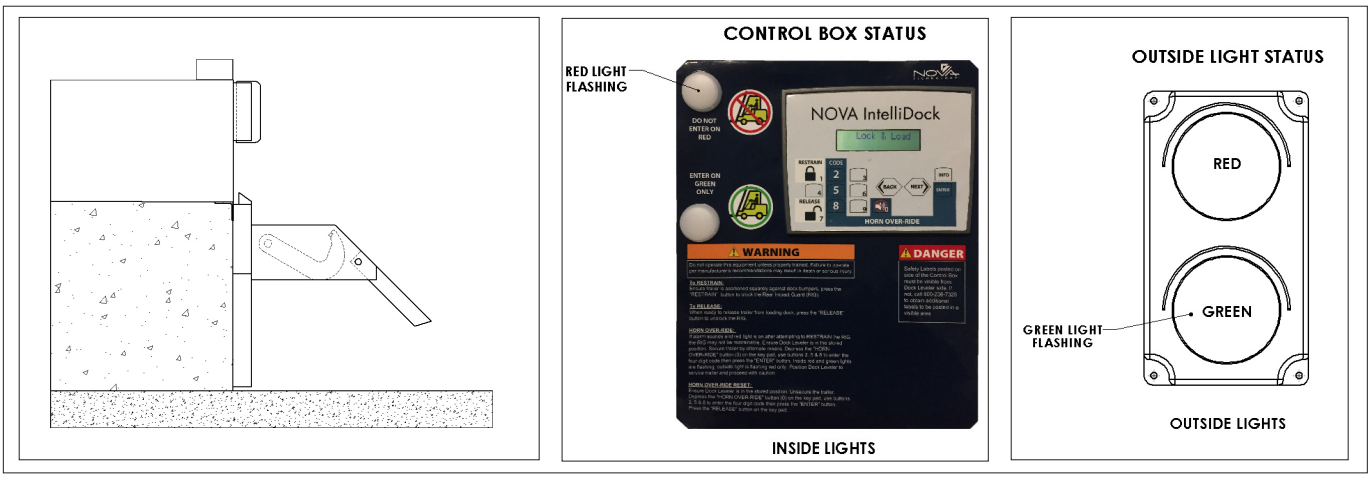


FIGURE 26—UNLOCKED POSITION/NO VEHICLE PRESENT

2. Test Restrain Function

Verify Part Number located on door inside control box.

a. Control boxes that have interlock require interface with optional sensors that verify dock equipment to be positioned as listed below for activation of vehicle restraint barrier:

- CB-20_: no interlock, barrier RELEASE/RESTRAIN functional anytime.
- CB-21-A_: interlocked dock door must be closed to RELEASE/RESTRAIN barrier.
- CB-21-B_: interlocked dock door must be closed to RELEASE barrier.
- CB-21-C_: interlocked dock leveler must be stored at dock level to RELEASE/RESTRAIN barrier.

b. Depress "RESTRAIN".

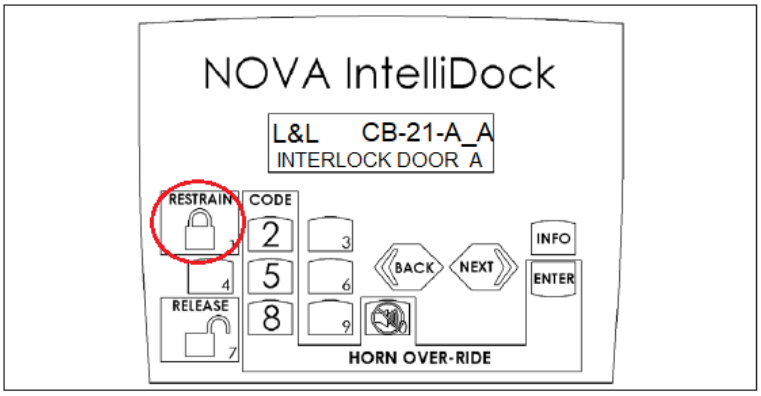


FIGURE 27—RESTRAIN OPERATION

c. Verify hook has rotated to up position.
d. Verify RED light on control box is flashing.
e. Verify HORN is sounding at 1 second intervals.
f. Verify outside RED light is flashing.

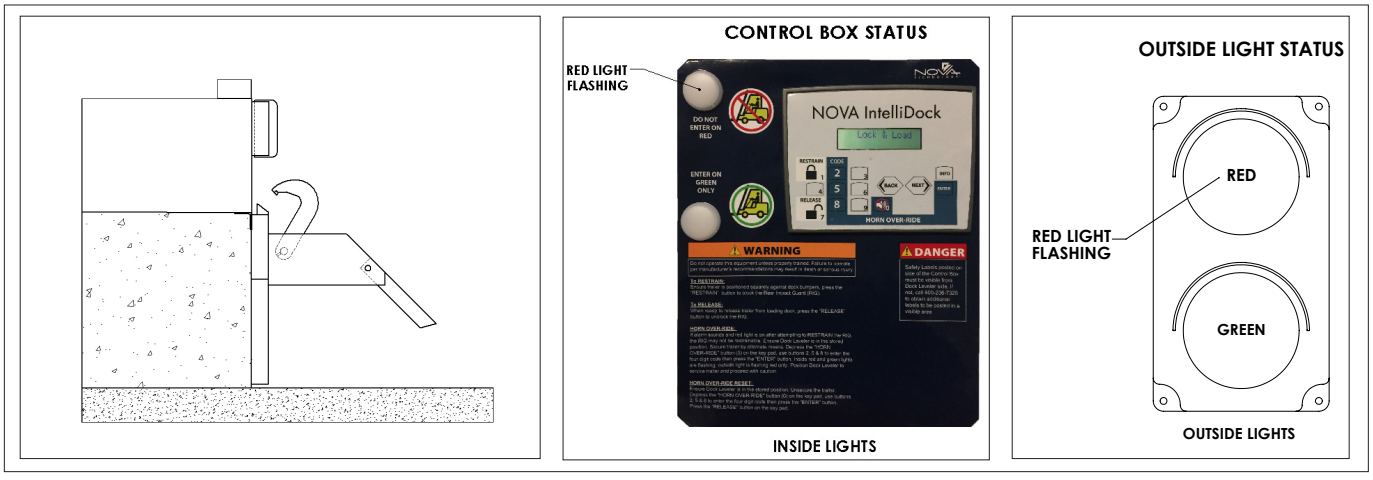


FIGURE 28—RESTRAIN FAULT, HORN SOUNDING

INSTALLATION INSTRUCTIONS

3. Manually position Hook as shown in Figure 29 to obtain control box flashing GREEN light and silenced ALARM.

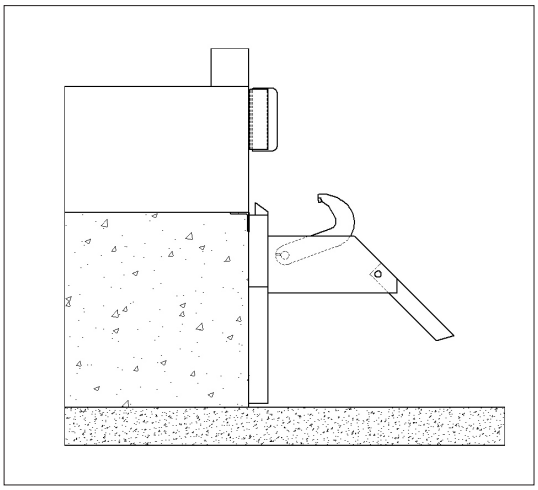


FIGURE 29—RESTRAINT LOCKED

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

CB-21-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 regardless of Hook position.

CB-21-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.

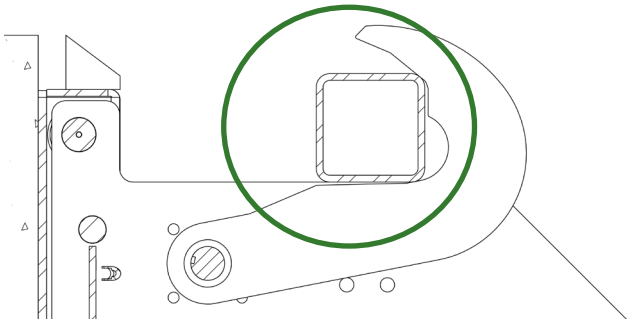
CB-21-C:
- RESTRAIN/RELEASE functional only with dock leveler stored.
- RAISE dock leveler functional only with any one of the conditions listed below:
  - Control box flashing GREEN light.
  - Control box HORN OVER-RIDE state.
- HORN OVER-RIDE state enables dock leveler activation regardless of Hook position.

5. 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.

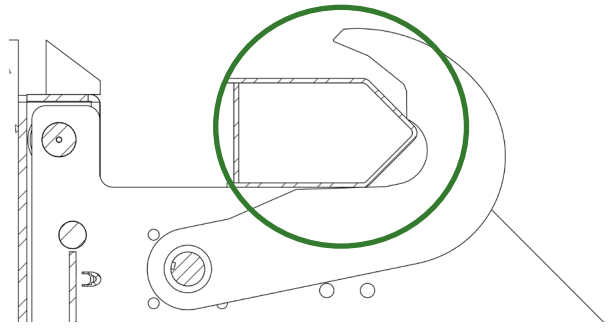
INSTALLATION INSTRUCTIONS

NOTICE

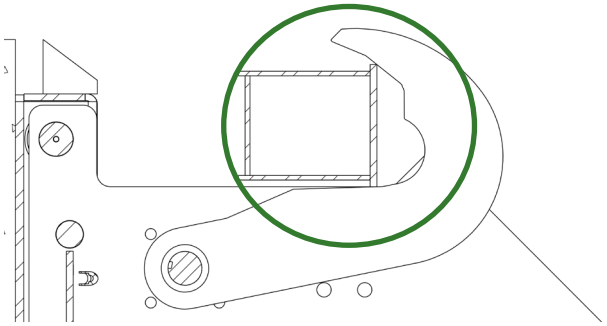
Triple Range hook provides Primary and Secondary RIG capture zones for standard, pentagonal and reinforced RIGs that do not have plates. Primary capture zone enables Control Box GREEN light operation. Secondary capture zone warns Dock Attendant of unsafe condition via Control Box RED light and sounding HORN while still securing RIG.



PRIMARY CAPTURE ZONE STANDARD RIG



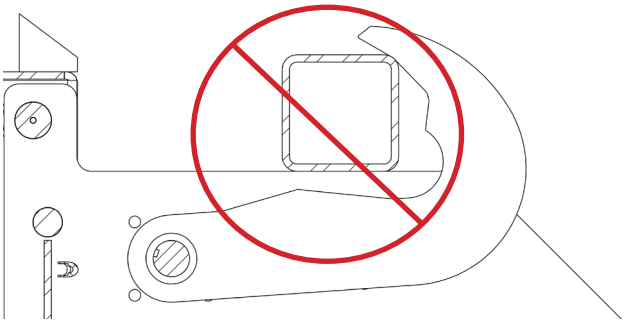
PRIMARY CAPTURE ZONE PENTAGONAL RIG



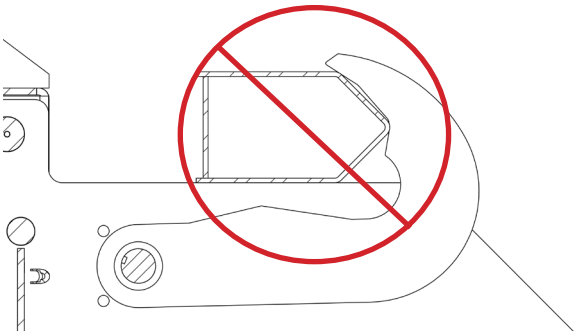
PRIMARY CAPTURE ZONE REINFORCED RIG

⚠WARNING

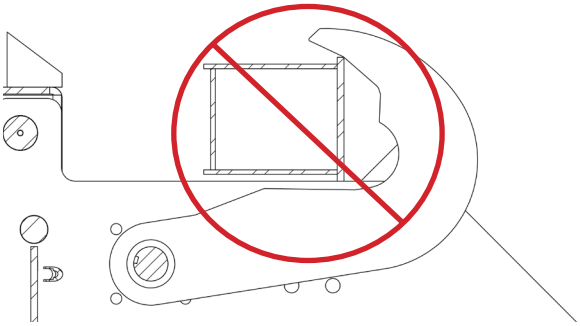
Secondary capture zone warns of unsafe condition via Control Box RED light and sounding HORN. Dock Attendant shall stop Loading/Unloading process until Transport Vehicle is positioned against bumpers and Hook is reset via RELEASE and RESTRAIN process or enter HORN OVER-RIDE.



SECONDARY CAPTURE ZONE STANDARD RIG



SECONDARY CAPTURE ZONE PENTAGONAL RIG



SECONDARY CAPTURE ZONE REINFORCED RIG

OPERATING PROCEDURES

⚠WARNING

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

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

RIG with cover plates should be secured by other means.

Always operate NOVA Lock & Load™ vehicle restraint from 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 32 of this manual.

NOVA Lock & Load™ 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 text is present in PLC display as illustrated in FIGURE 30.

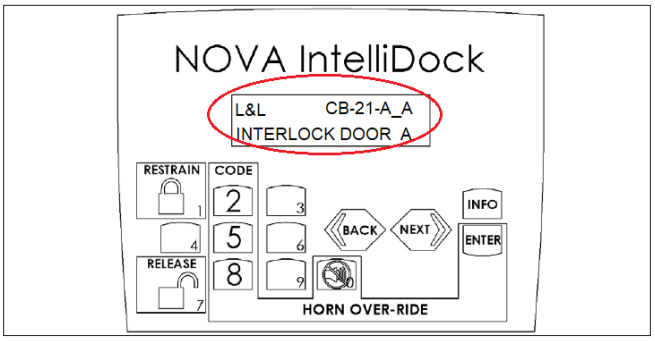


FIGURE 30—VERIFY PLC DISPLAY

Stored Position / Restraint UNLOCKED

Hook is in 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 31.

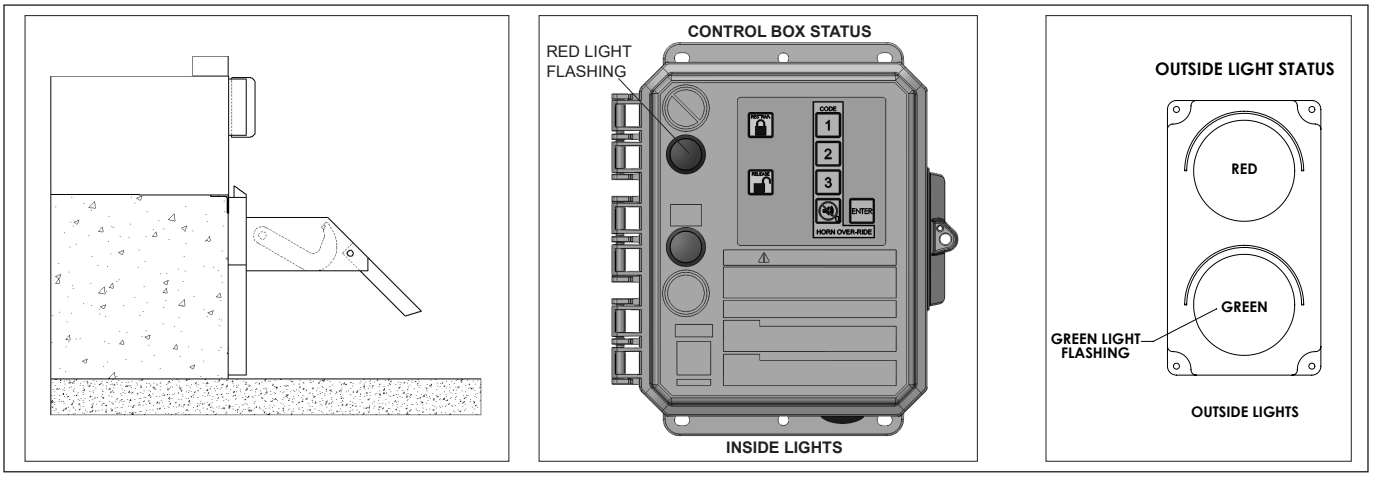


FIGURE 31—STORED POSITION

OPERATING PROCEDURES

RESTRAIN Button Pressed - Restraint LOCKING

Trailer has backed into loading dock and is parked firmly against dock bumpers. The HORN will sound while 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 32.

If HORN sounds after hook has finished rotating, proceed to FAULT, otherwise proceed to Restraint LOCKED.

⚠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.

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

PLC Display: Interlock Door A	Door must be closed
OR	
PLC Display: Interlock Door B	Door could be opened or closed
OR	
PLC Display: InterlockLeveler	Leveler must be stored

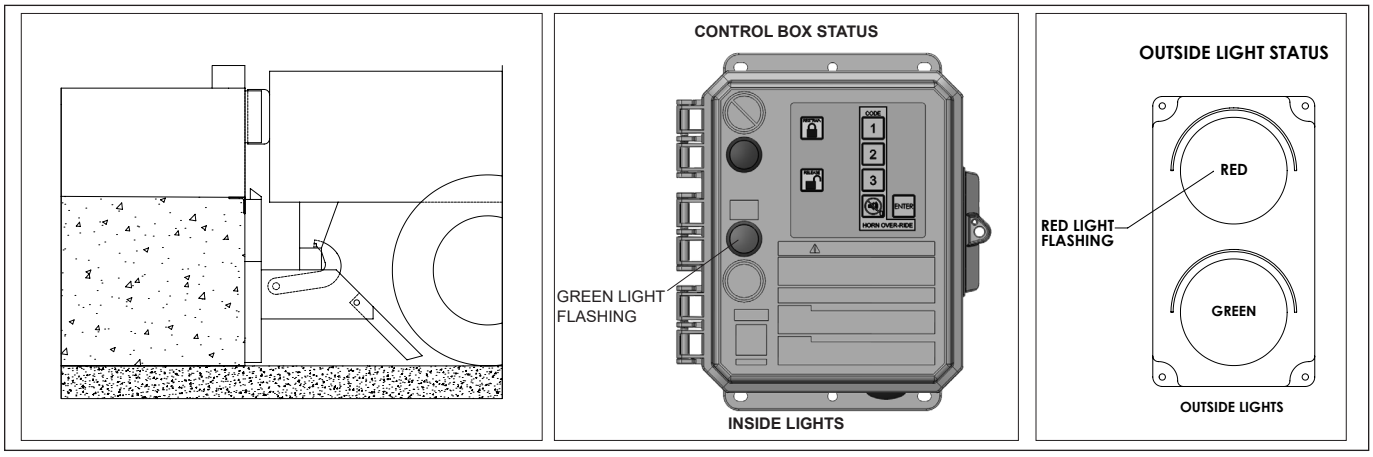


FIGURE 32—RESTRAINT LOCKING

OPERATING PROCEDURES

Restraint LOCKED

Once the RIG is securely captured by hook, a LOCKED condition exists. Inside light is flashing GREEN alerting forklift operator a safe condition exists. Outside light is flashing RED alerting truck driver not to move. Refer to Figure 33.

⚠WARNING

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

If during loading/unloading inside light turns RED and HORN sounds, press RESTRAIN button to secure RIG.

Interlocked Equipment is Now Active

Interlocked equipment position listed below (optional):

PLC Display: Interlock Door A	Overhead door can be opened
OR	
PLC Display: Interlock Door B	Overhead door can be opened or remain opened
OR	
PLC Display: InterlockLeveler	Leveler can be placed into back of transport vehicle

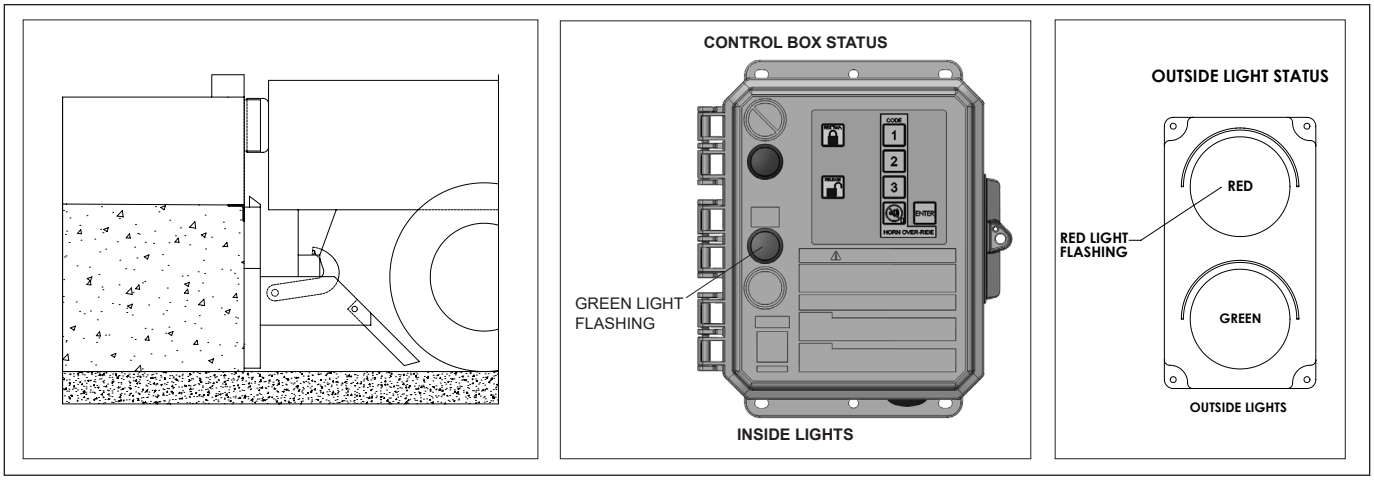
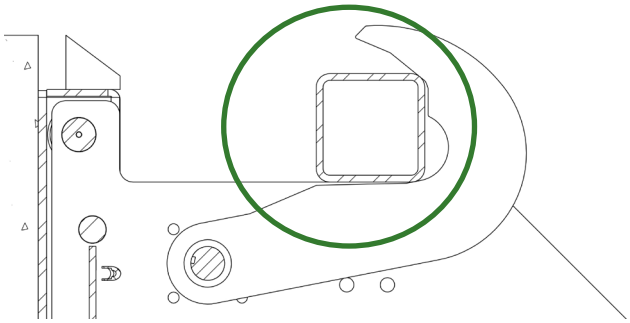


FIGURE 33—RESTRAINT LOCKED

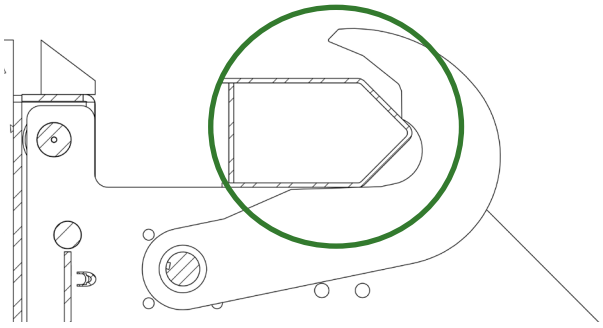
OPERATING PROCEDURES

NOTICE

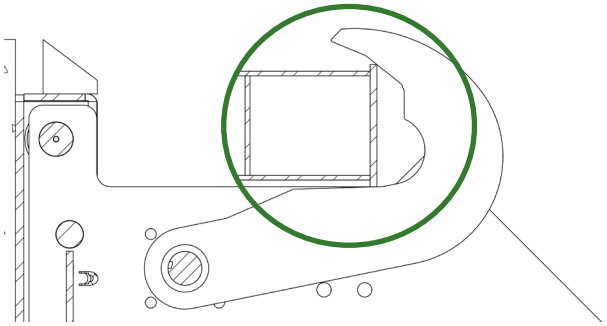
Triple Range hook provides Primary and Secondary RIG capture zones for standard, pentagonal and reinforced RIGs that do not have plates. Primary capture zone enables Control Box GREEN light operation. Secondary capture zone warns Dock Attendant of unsafe condition via Control Box RED light and sounding HORN while still securing RIG.



PRIMARY CAPTURE ZONE STANDARD RIG



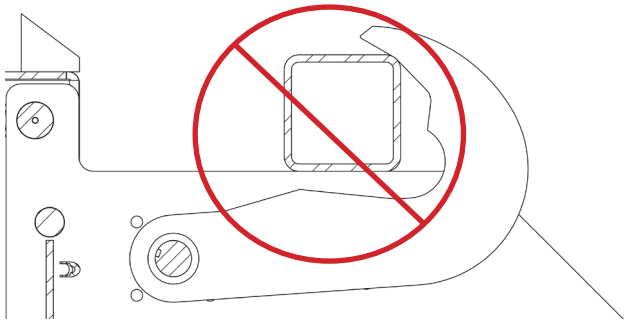
PRIMARY CAPTURE ZONE PENTAGONAL RIG



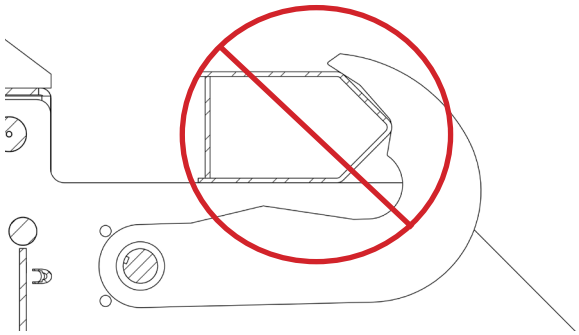
PRIMARY CAPTURE ZONE REINFORCED RIG

⚠WARNING

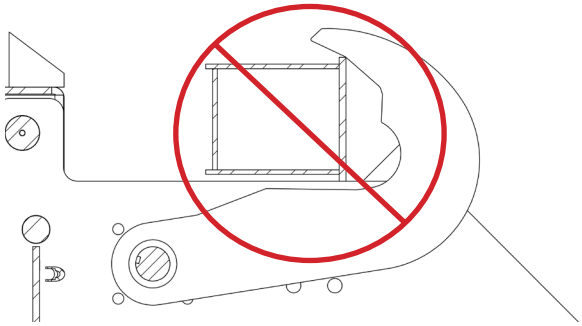
Secondary capture zone warns of unsafe condition via Control Box RED light and sounding HORN. Dock Attendant shall stop Loading/Unloading process until Transport Vehicle is positioned against bumpers and Hook is reset via RELEASE and RESTRAIN process or enter HORN OVER-RIDE.



SECONDARY CAPTURE ZONE STANDARD RIG



SECONDARY CAPTURE ZONE PENTAGONAL RIG



SECONDARY CAPTURE ZONE REINFORCED RIG

OPERATING PROCEDURES

FAULT from LOCKING State

Hook cannot engage 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 forklift operator that trailer is not locked. Outside light is flashing RED alerting truck driver not to move. See Figure 34

CB-00: Hook will automatically store, press RELEASE to stop HORN sounding, then enter HORN OVER-RIDE.

CB-20/21: Press RELEASE to store Hook, then enter HORN OVER-RIDE.

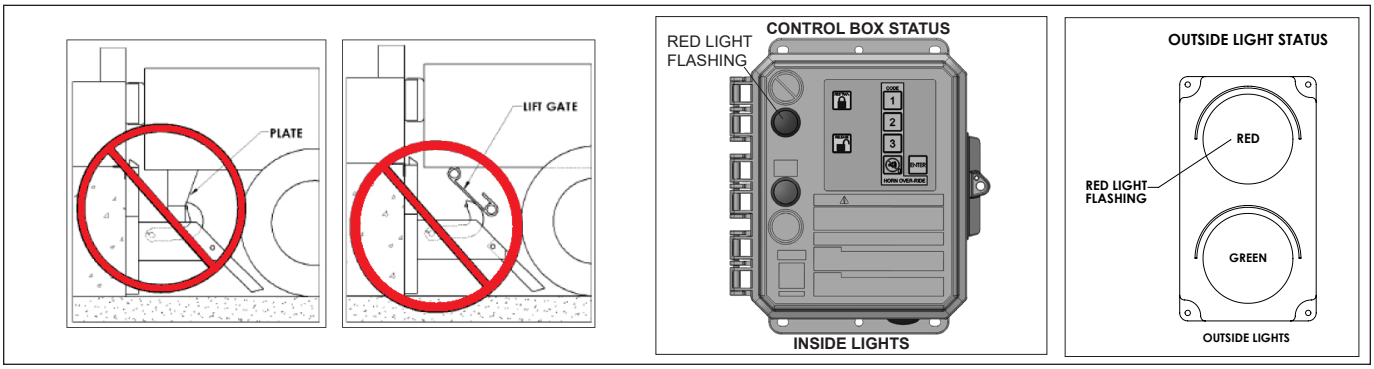


FIGURE 34—FAULT STATE

HORN OVER-RIDE

If HORN sound and RED light is on after attempting to RESTRAIN RIG, trailer may not be serviceable. Ensure dock leveler is in stored position. Secure trailer by alternate means. Depress "HORN OVER-RIDE" button (0) on key pad, enter default over-ride code

- CB-00: 2213
- CB-20/21: 5528

then press "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.

⚠ DANGER

Before activating "HORN OVER-RIDE", ensure 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 trailer. Depress the "HORN OVER-RIDE" button (0) on key pad, enter default over-ride code, then press "ENTER" button. Press "RELEASE" button on key pad.

2213 = default over-ride code. The default over-ride code can be changed.

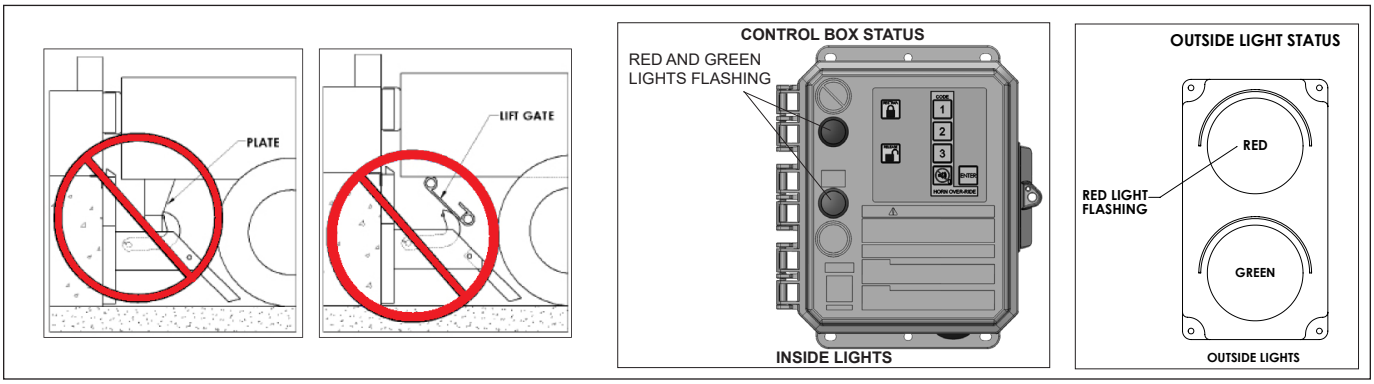


FIGURE 35—HORN OVER-RIDE STATE

OPERATING PROCEDURES

RELEASE Button Pressed - Restraint UNLOCKING

Hook travels from LOCKED position to STORED position. Inside light is flashing RED. Outside light is flashing GREEN alerting truck driver not to move. Refer to Figure 36. When process is complete, hook is in stored position as shown in Figure 31 on page 38.

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

PLC Display: Interlock Door A	Door must be closed
OR	
PLC Display: Interlock Door B	Door must be closed
OR	
PLC Display: InterlockLeveler	Leveler must be stored

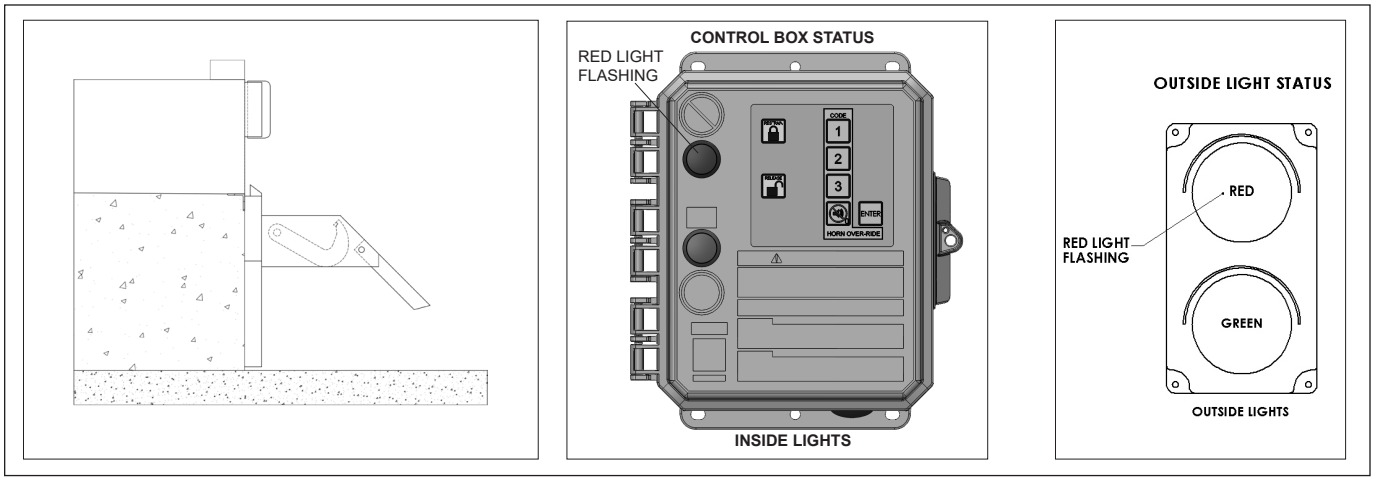


FIGURE 36—RESTRAINT UNLOCKING

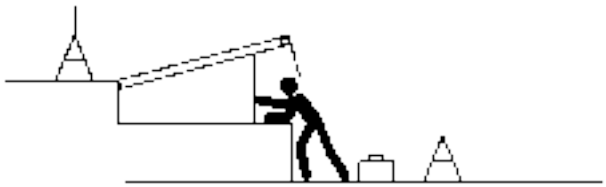
ROUTINE MAINTENANCE

⚠ DANGER

When working with electrical or electronic controls, make sure that 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 work area at dock level and ground level to prevent unauthorized use of 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 dock leveler is equipped with a tethered remote, two people are required to engage maintenance prop: one person to operate unit, another person to engage 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 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 Lock & Load™ 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 top and bottom axle with Mobilith™ SHC 220 No. 2 grease or equivalent.
- Verify brake torque is greater than 500 in-lbs (42 ft-lbs), and less than 700 in-lbs (58 ft-lbs) at hook shaft, rotating the hook from ENGAGED 45° to STORED.
- Inspect hook for free play on hook shaft. Tighten hook set screw to 96 in-lbs (8 ft-lbs) if free play is present.
- 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 37, page 45.
- Lube chain using chain lube.

⚠ DANGER

It is recommended and good safety practice to use an additional means to support dock platform and lip anytime when physically working in front of or under 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.

ROUTINE MAINTENANCE

DRIVE CHAIN ADJUSTMENT

Inspect drive chain periodically for dirt and chain slack. Open motor enclosure and clean 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 37. To tighten chain:

- Open motor enclosure and loosen four (4) motor mounting bolts.
- Pry the motor assembly forward, in the slotted holes, until chain is tight with proper alignment between sprockets.
- Hold in this position and tighten the four (4) motor mounting bolts to 96 in-lbs, 10 in-lbs increments.

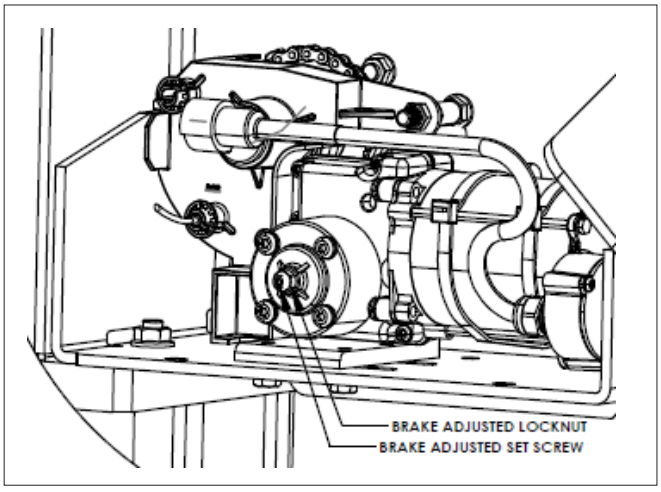
⚠ DANGER

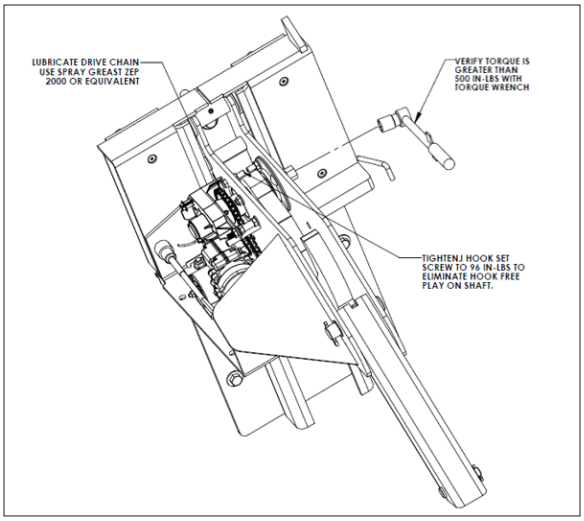
When working with electrical or electronic controls, make sure that power source has been locked out and tagged according to OSHA regulations and approved local electrical codes.

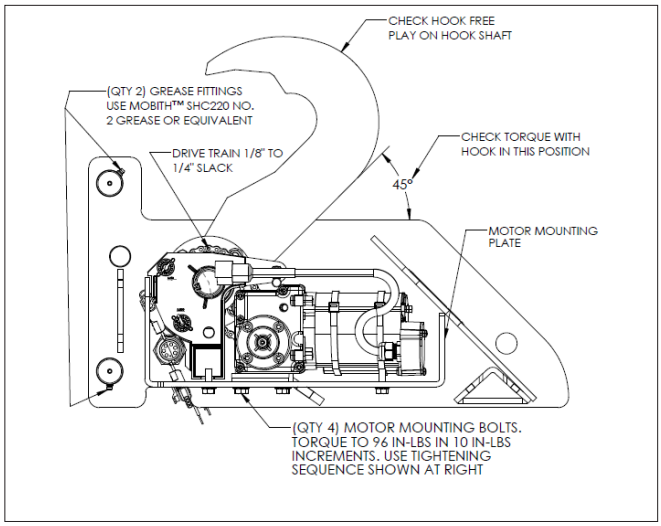
BRAKE TORQUE ADJUSTMENT

(Refer to Figure 37)

- Loosen brake adjuster locknut while holding adjuster screw to prevent inadvertent adjustment.
- Turn adjuster screw clockwise to increase brake torque as needed.
- Tighten adjuster locknut while holding adjuster screw to prevent inadvertent adjustment.
- Verify brake torque is in range of 500 to 700 in-lbs at hook shaft; readjust as required.







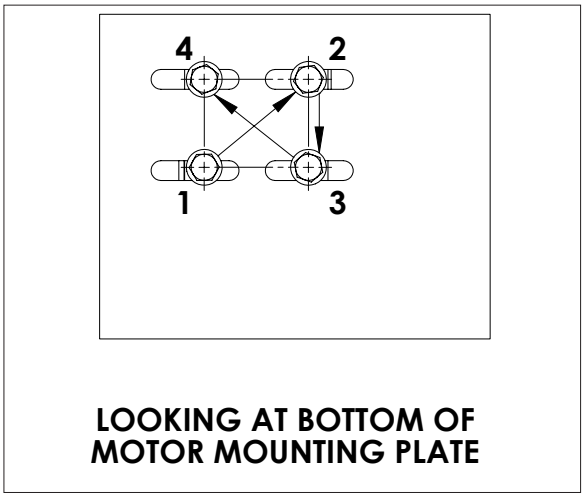


FIGURE 37—MAINTENANCE AND LUBRICATION

TROUBLESHOOTING

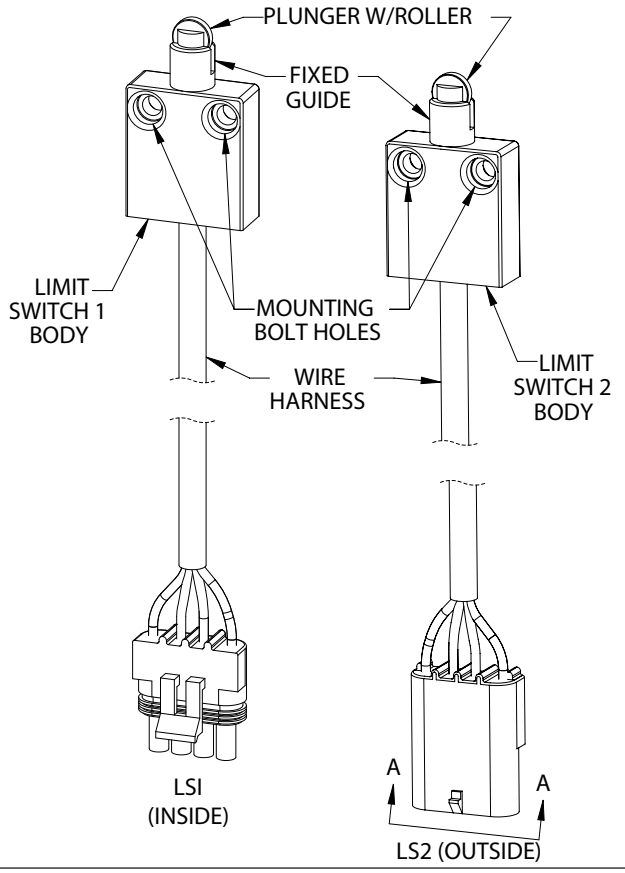
PROBLEM	PROBABLE CAUSE	RESOLUTION
NOVA Lock & Load™ vehicle restraint lights do not flash and hook does not raise.	• Power source malfunction. • Incorrect wiring.	• Check power source, including facility circuit breaker and circuit breaker on power module. • Verify wiring.
NOVA Lock & Load™ vehicle restraint lights are flashing, but hook does not raise or lower to full extent.	• Chain is loose or broken. • Low incoming voltage. • Drive motor defective. • Incorrect wiring.	• Adjust or replace as required. • Verify incoming voltage at L1 and N is a minimum of 110V. Do not power off a control transformer from other equipment unless properly sized for load. • Check motor. Repair or replace as needed. • Verify wiring.
NOVA Lock & Load™ vehicle restraint is operational, but hook drops causing lights to change and/or HORN to sound while trailer is being serviced.	• Verify brake torque. • Drive motor defective.	• If brake torque is less than 500 in lb or chain is loose or broken, adjust or replace as required. • Check motor. Repair or replace as needed.
NOVA Lock & Load™ vehicle restraint is operational but all lights are out.	• LEDs burnt out, loose or missing. • Incorrect wiring.	• Check LED modules and replace as required. • Verify wiring.
NOVA Lock & Load™ vehicle restraint hook is in stored position with an inside GREEN light.	• Incorrect wiring.	• Verify wiring of MS1/LS1 and MS2/LS2 at control box and outside junction box.
NOVA Lock & Load™ vehicle restraint carriage does not return to a full up position.	• Carriage binding in track. • Damaged roller track. • Broken or weak springs.	• Check to see if roller track is clean and rollers are clean, free of debris and lubricated. Use only approved grease to lubricate rollers. • Verify that roller track is straight and not damaged. • Remove spring cover and replace springs as required.

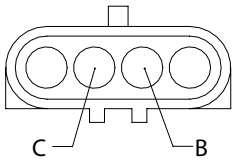
TROUBLESHOOTING

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 limit switch does not have to be tested. A continuity test lamp may be used instead of a multimeter.





VIEW A-A

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 38—LIMIT SWITCH AND HOOK POSITION CHART

TROUBLESHOOTING

1. ENTERING MAINTENANCE MODE ON THE CB-20/21 CONTROL BOX, NOT AVAILABLE ON CB-00

Key point: This step can be done on any display or operation except when in HORN OVER-RIDE.

a. Depress "HORN OVER-RIDE" button (#0 button).
b. RED light, on the control box, will start flashing if GREEN light was flashing. This is normal to notify end user that they are about to enter a new mode.
c. Enter Maintenance code, 28252, and then press "ENTER".
   i. If wrong code was entered, "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, "Wrong PW: Reenter Or wait" display will clear and screen will return to previous display.

2. NAVIGATING THROUGH MAINTENANCE MODE

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

Display #1 = Faults
Displays #2 - 8 = Counters
Displays #9 - 10 = Cycles
Displays #11 & 12 = Inputs & Outputs
Display #13 = Change HORN OVER-RIDE Password

#1 Display — Faults

This display shows the most current fault status. There may be more than one fault occurring at a given time but only most recent one can be displayed. See displays #2-8 for more fault information. Also, check display #11 for proper inputs.

Key point: Counters on displays #2-8 can be reset by following instructions below. Once on display with counter that needs to be reset, press and hold "ENTER" for five seconds. After five seconds, counter display will begin to flash, release "ENTER". Next, press "HORN OVER-RIDE" button (#0 button) to set counter back to zero. This is only acceptable entry to reset counters. Once counter has been reset, press "ENTER" to successfully reset counter.

#2 Display — No LS1/MS1 No LS2/MS2

Display shows number of times Magnetic Sensor 1 (MS1) and Magnetic Sensor 2 (MS2) are off at same time.

This fault can occur if	Resolution
Liftgate present on Transport Vehicle prevents Hook from entering engagement zone.	Use HORN OVERRIDE mode per instructions on Control Box.
Hook leaves engagement zone due to loading/ unloading vibrations.	Adjust gearmotor brake to recommended value.

#3 Display — Both LS1/MS1 No LS2/MS2

Display shows number of times Magnetic Sensor 1 (MS1) and Magnetic Sensor 2 (MS2) are on at same time.

This fault can occur if	Resolution
Field wire connections incorrect.	Correct field wire connections.
Magnetic debris positioned at one or both sensors.	Remove magnetic debris.

#4 Display — Hook Not Active

This display shows number of times, MS1/LS1 and MS2/LS2 are on at same time.

TROUBLESHOOTING

This fault can occur if	Resolution
Hook has been pushed off of MS2/LS2 after hook had successfully stopped at MS2/LS2.	Hook can be either be restrained or released again depending on the situation. If neither resolves this fault, enter HORN OVER-RIDE mode by following instructions printed on the control box.
MS1/LS1 malfunctioned when hook is locked or unlocked.	Ensure MS1/LS1 is tightened and working properly. Inputs can be verified on display #11.
MS2/LS2 malfunctioned when hook is locked or unlocked.	Ensure MS2/LS2 is tightened and working properly. Inputs can be verified on display #11.

#5 Display — MS1/LS1 On MS2/LS2 Off

This display shows number of times, MS1/LS1 has been on and MS2/LS2 has been off when hook is locked.

This fault can occur if	Resolution
RIG is able to fully release hook without "RELEASE" button on control box being depressed.	Press "RELEASE" button on control and fault will clear.
MS1/LS1 and MS2/LS2 are reversed.	Verify MS1/LS1 and MS2/LS2 are positioned correctly.
MS1/LS1 and MS2/LS2 malfunctioned when hook is locked.	Ensure MS1/LS1 is tightened and working properly. Inputs can be verified on display #11.
MS2/LS2malfunctioned when hook is locked.	Ensure MS2/LS2 is tightened and working properly. Inputs can be verified on display #11.

#6 Display — MS1/LS1 Off MS2/LS2 On

This display shows the number of times, MS1/LS1 has been off and MS2/LS2 has been on when hook is unlocked.

This fault can occur if	Resolution
MS1/LS1 and MS2/LS2 are reversed.	Verify MS1/LS1 and MS2/LS2 are positioned correctly.
MS1/LS1 malfunctioned when hook is unlocked.	Ensure MS1/LS1 is tightened and working properly. Inputs can be verified on display #11.
MS2/LS2 malfunctioned when hook is unlocked.	Ensure MS2/LS2 is tightened and working properly. Inputs can be verified on display #11.
The hook is unable to unlock because RIG is driving hook upward.	Back up trailer slightly to disconnect RIG from hook.

TROUBLESHOOTING

#7 Display — No RIG Present

This display shows the number of times, hook has rotated pass MS2/LS2 while restraining. During this fault, both MS1/LS1 and MS2/LS2 are on.

This fault can occur if	Resolution
Trailer is not properly aligned with dock door causing the RIG bar to be in the incorrect position.	Realign trailer and try locking hook again.
There is no RIG present to stop hook from rotating.	Release hook back to unlocked position and enter HORN OVER-RIDE mode by following instructions printed on control box.

#8 Display — HORN OVER-RIDE Count

This display is to show number of times HORN OVER-RIDE function has been activated. HORN OVER-RIDE function should only be used when barrier cannot properly secure RIG.

Key Point: Maintenance code can also be used to disable HORN OVER-RIDE in case the standard code for HORN OVER-RIDE has been over-written.

#9 Display — Total Cycles

This display shows number of complete cycles product has gone through. One cycle is defined as hook moving from unlocked position to locked position and back to unlocked position.

#10 Display — Cycles 2 Service

This display shows how many cycles NOVA Lock & Load™ can go through before service is needed.

#11 Display — 12345678 Inputs

This display shows all inputs going to the control box. Number zero (0) means input is off. Number one (1) means input is on.

1. MS1/LS1
2. MS2/LS2
3. N/A
4. LS4 (CB-21 only)
5. N/A
6. N/A
7. N/A
8. N/A

#12 Display — 12345678 Outputs

This display shows all outputs coming from the control box. Number zero (0) means input is off. Number one (1) means output is on.

1. Control Box — Red Light
2. Control Box — Green Light
3. Outside — Red Light
4. Outside — Green Light
5. Motor 1 — Restrain
6. Motor 2 — Unlock
7. Alarm Horn
8. CR-3 (CB-21 only)

#13 Display — Enter New HORN OVER-RIDE Password:

This display is for changing password to enter and exit HORN OVER-RIDE. Once on this screen, press "ENTER" to change current password. Then enter new password. New password can range from 1 to 9999. Once new password has been typed, press "ENTER" to successfully change password. Any leading zeros will be eliminated. Provide new over-ride password to authorized dock attendant.

3. EXITING MAINTENANCE MODE ON THE CONTROL BOX

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

a. Depress the "HORN OVER-RIDE" button (#0 button).
b. Red light, on the control box, will start flashing if the green light was flashing. This is normal to notify end user that they are about to enter a new mode.
c. Enter Maintenance code, 28252, and then press "ENTER".

Key point: Current HORN OVER-RIDE code will also work for exiting Maintenance Mode.

i. If wrong code was entered, "Wrong PW: Reenter Or wait" display will appear. On this display, repeat steps 3a through 3c to exit maintenance mode.
ii. Or if no further input is completed within 30 seconds, "Wrong PW: Reenter Or wait" display will clear and screen will return to last display prior to entering maintenance mode.

PARTS

SENSOR PARTS

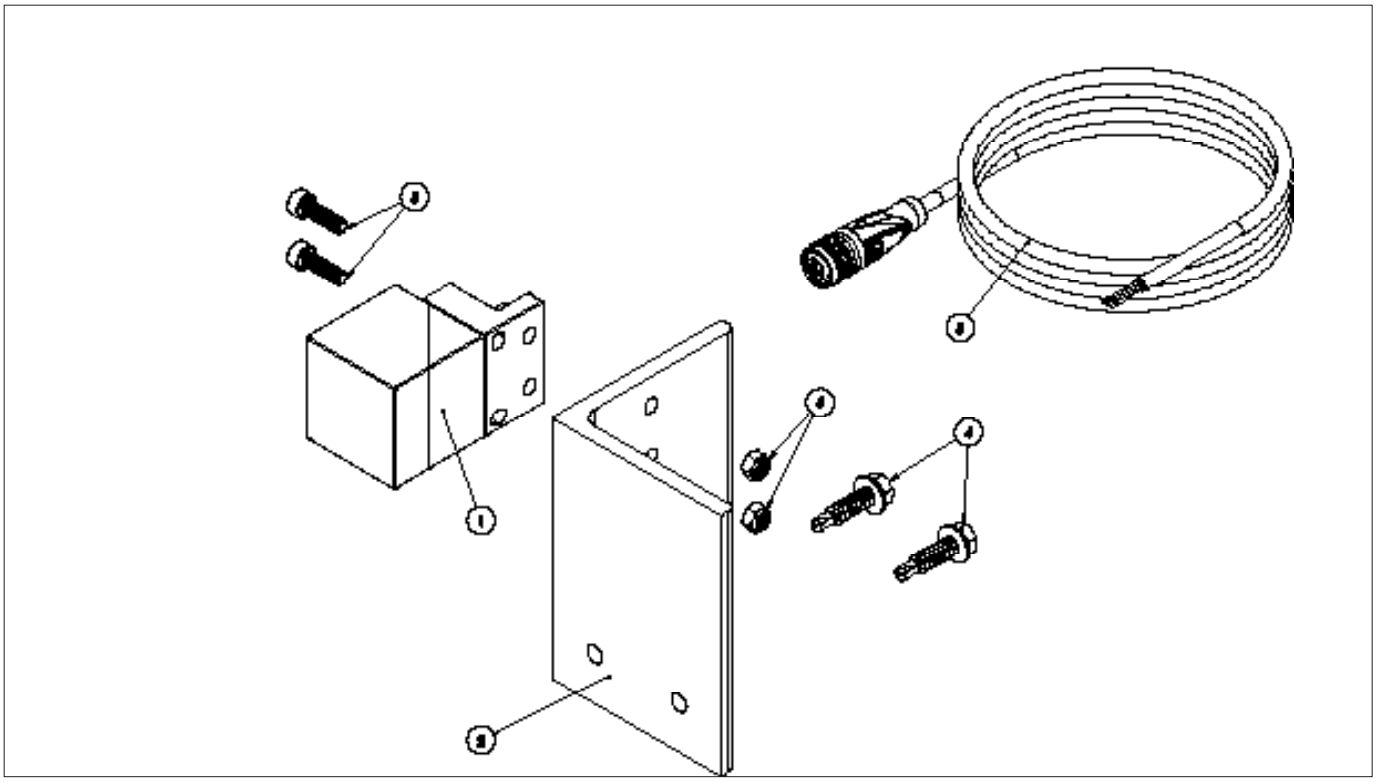


FIGURE 39—DOCK LEVELER SENSOR KIT PARTS (CB-1032 DOOR SENSOR KIT)

DOCK LEVELER SENSOR REPLACEMENT PART LIST (CB-1032)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CB-1012	PROXIMITY SENSOR	1
2	CB-1013	PROXIMITY SENSOR MOUNTING BRACKET	1
3	CB-1016	M12 CORD	1
4	CB-1020	HEX HEAD DRILLING SCREW 1/2" - 20 X 1"	2
5	CB-1024	5M X 16 MM SOCKET HEAD CAP SCREW	2
6	CB-1025	5M NYLOC NUT	2

NOTE: This dock leveler sensor kit is only for air bag dock levelers or hydraulic dock levelers without independent lip.

PARTS

SENSOR PARTS

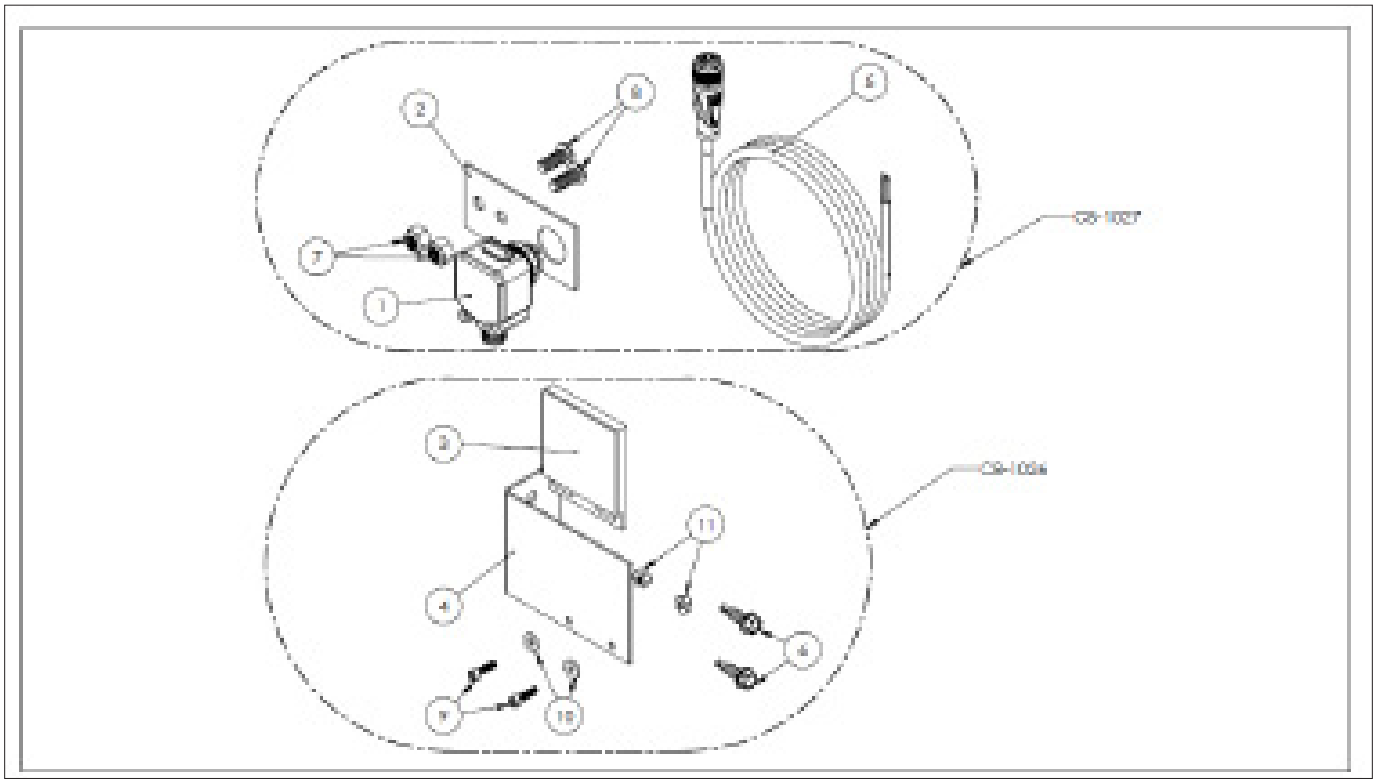


FIGURE 40—OVERHEAD DOOR SENSOR KIT PARTS CB-1034 (1) SENSOR DOOR KIT

OVERHEAD DOOR SENSOR REPLACEMENT PART LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CB-1010	PHOTOELECTRIC SENSOR	1
2	CB-1011	PHOTOELECTRIC SENSOR MOUNTING BRACKET	1
3	CB-1014	PHOTOELECTRIC SENSOR REFLECTOR	1
4	CB-1015	REFLECTOR MOUNTING BRACKET	1
5	CB-1016	M12 CORD	1
6	CB-1017	#12 X 3/4" HEX HEAD DRILLING SCREW	2
7	CB-1018	1/4" - 20 NYLOC NUT	2
8	CB-1019	1/4" - 20 X 5/8" BUTTON HEAD CAP SCREW	2
9	CB-1021	6-32 X 1/2" SOCKET HEAD CAP SCREW	2
10	CB-1022	#6 SAE WASHER	2
11	CB-1023	6-32 NYLOC NUT	2

PARTS

CARRIAGE ASSEMBLY DRAWING

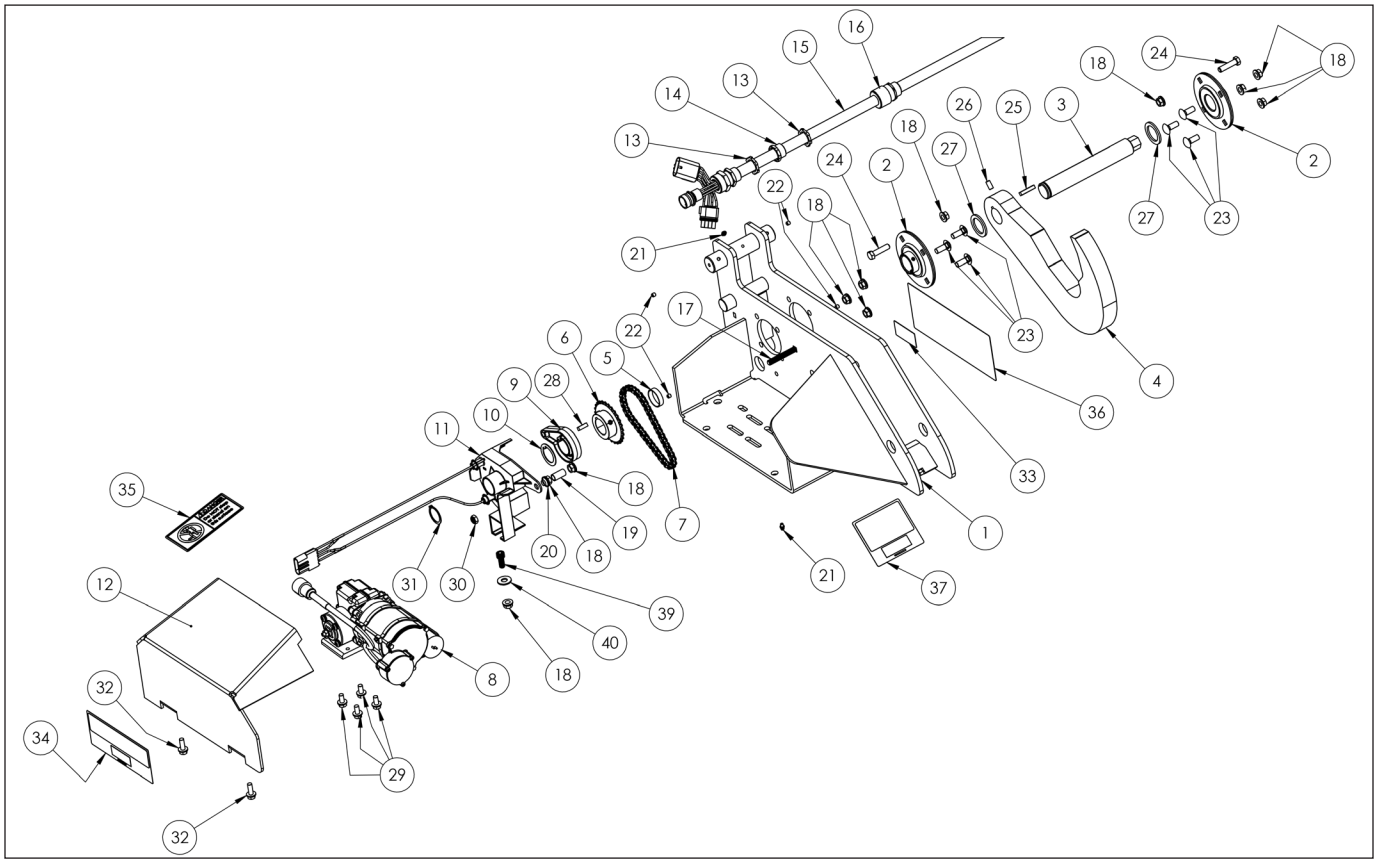


FIGURE 41—CARRIAGE ASSEMBLY

CARRIAGE ASSEMBLY PARTS LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	MF2-004-200	CARRIAGE WELDMENT	1
2	MF2-017-000	LOCK & LOAD BEARING ASSEMBLY	2
3	MF2-020-000	HOOK SHAFT	1
4	MF2-168-100	HOOK, TRIPLE RANGE	1
5	MF2-028-104	SPROCKET SPACER	1
6	MF2-022-000	HOOK DRIVE SPROCKET W/SET SCREWS	1
7	MF2-107-000	CHAIN	1
8	MF2-110-000	ASSEMBLY, MF2 MOTOR	1
9	MF2-028-410	MAGNET HOLDER ASSEMBLY	1
10	MF2-028-105	KEYED SHIM	1
11	MF2-024-410	SENSOR BRACKET ASSEMBLY	1
12	MF4-165-000	MOTOR/CHAIN COVER	1

PARTS

CARRIAGE ASSEMBLY PARTS LIST *(continued)*

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
13	MF2-037-000	3/4" CONDUIT LOCK NUT	2
14	MF2-034-000	3/4" CONDUIT NIPPLE	1
15	MF4-184-000	WIRE HARNESS	1
16	MF2-033-000	CORD GRIP	1
17	MF2-028-108	3/8-16 X 2 3/4 LG SQ. NECK CARRIAGE BOLT GR 5	1
18	MF2-016-000	3/8-16 SERRATED FLANGE LOCK NUT	11
19	MF2-024-401	TUBE SPACER	1
20	MF2-028-106	ROLLED RIM GROMMET	1
21	MF2-013-000	GREASE FITTING	2
22	MF2-017-002	1/4-28 X 1/4" SOCKET SET SCREW	4
23	MF2-014-000	3/8-16 X 1" CARRIAGE BOLT	6
24	MF2-015-000	3/8-16 X 1 1/2" HH CAP SCREW	2
25	MF2-021-000	1/4" X 1/4" X 1 1/4" HOOK KEY	1
26	MF2-167-000	5/16-18 X 5/8" THRD LCK, SKT SET SCREW	1
27	MF2-018-000	1 3/4" OD, 1 1/4" ID, 1/8" THK, MACHINERY BUSHING	2
28	MF2-028-107	1/4" x 1/4" X 3/4" LG DRIVE SPROCKET KEY	1
29	MF2-117-000	5/16-18 X 5/8" FLANGE HEAD SCREW	4
30	MF2-024-406	3/8-16 LOW PROFILE NYLOCK HEX NUT	1
31	MF2-061-000	1 1/4" EXTERNAL RETAINING RING	1
32	MF2-126-000	5/16-18 X 7/8" FLANGE HEAD SCREW	2
33	MF2-068-000	SERIAL NUMBER DECAL	1
34	MF2-064-000	"LOCK & LOAD" HORIZONTAL DECAL	1
35	MF2-199-000	NO STEP DECAL	1
36	MF2-080-000	"LOCK & LOAD" LARGE HORIZONTAL DECAL	1
37	MF2-065-000	"LOCK & LOAD" SQUARE DECAL	1
39	MF2-024-404	SOCKET HEAD SCREW	1
40	MF2-024-405	3/8" FLAT WASHER	1

PARTS

ROLLER TRACK ASSEMBLY DRAWING AND PARTS LIST

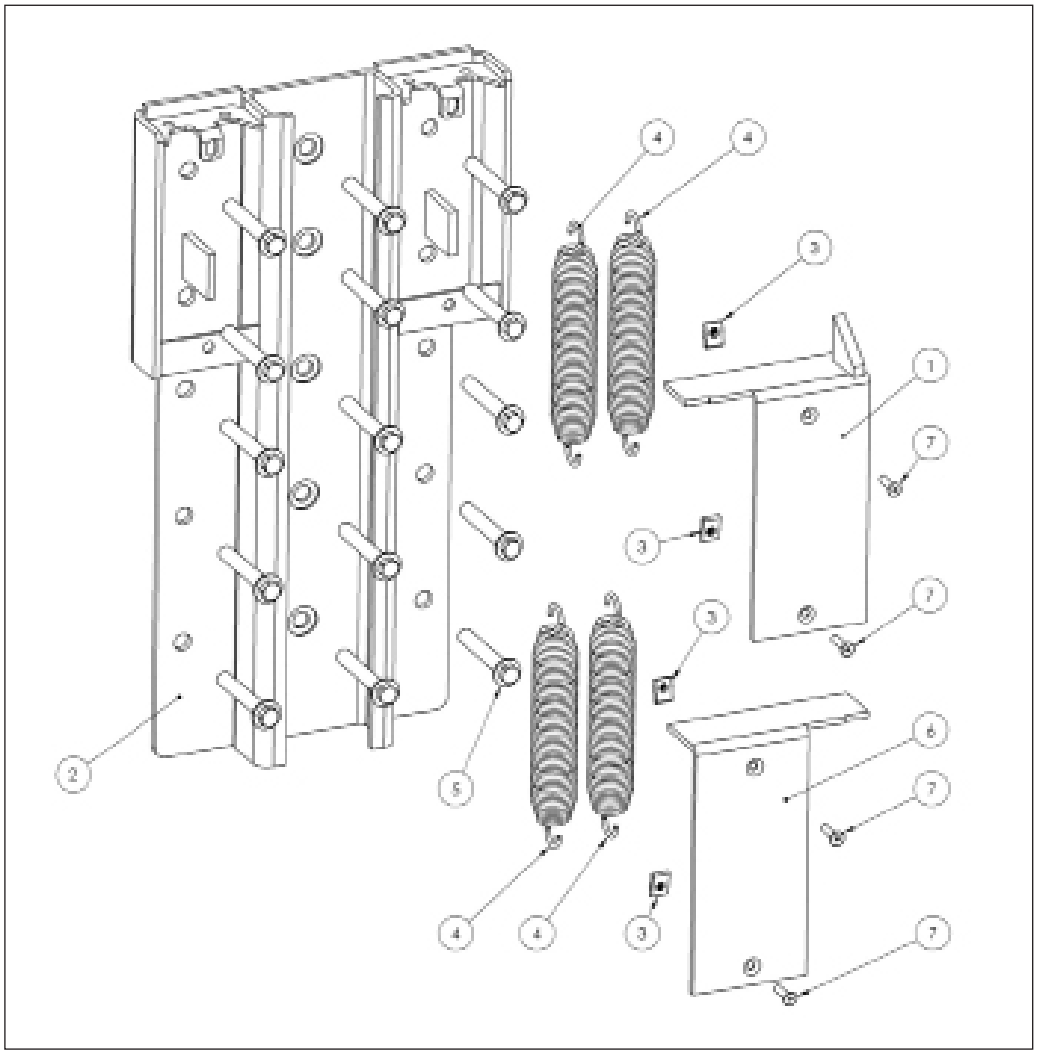


FIGURE 42—ROLLER TRACK ASSEMBLY

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

PARTS

SLOPE EXTENSION DRAWING AND PARTS LIST

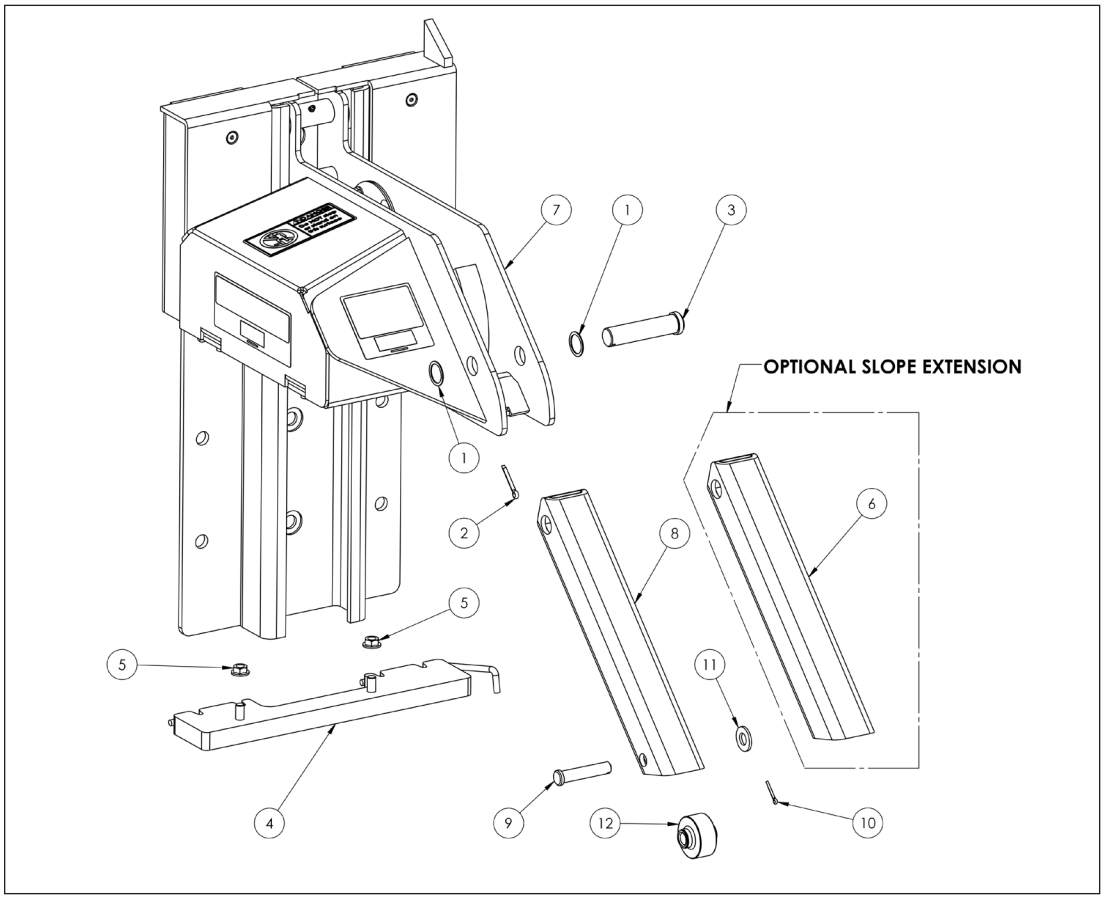


FIGURE 43—SLOPE EXTENSION ASSEMBLY

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	MF2-007-200	LOCK & LOAD 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

PARTS

MISCELLANEOUS PARTS

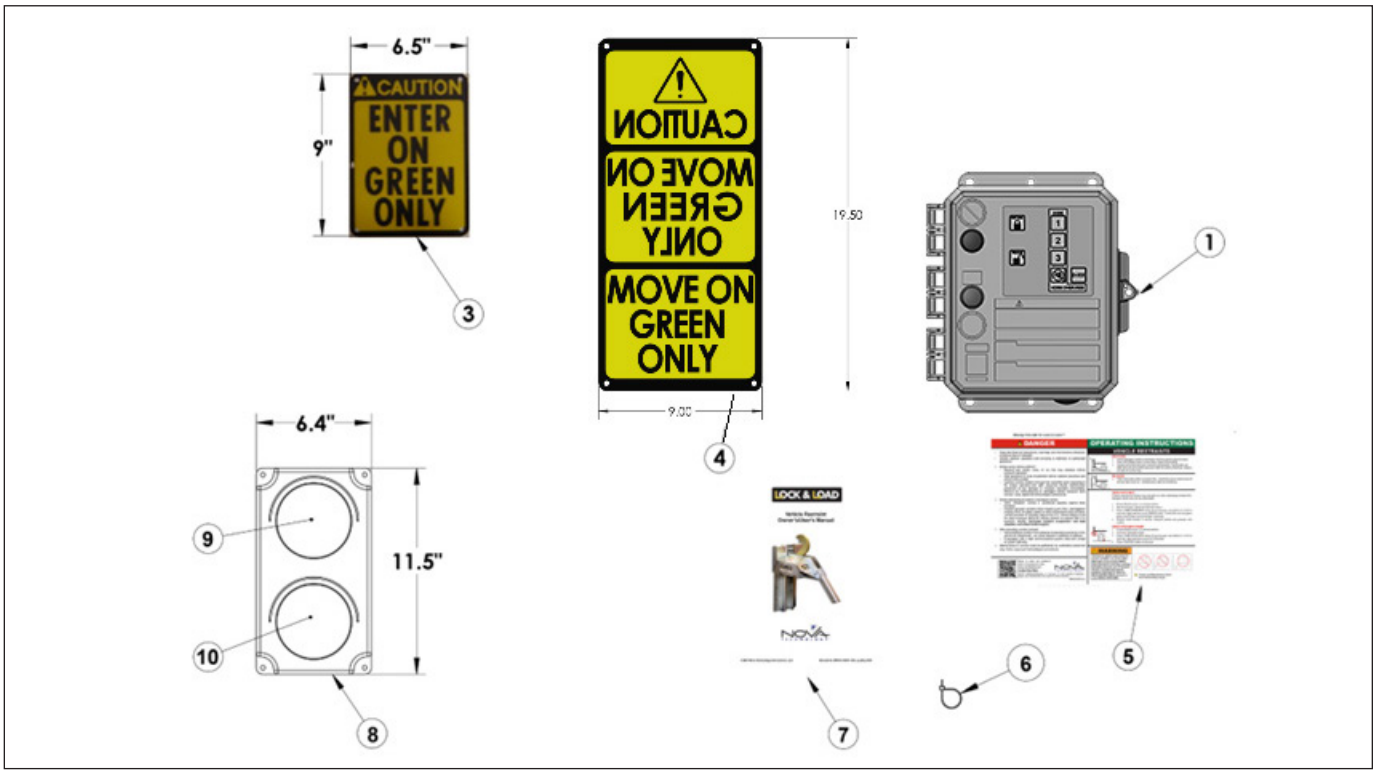


FIGURE 44—MISCELLANEOUS PARTS

MISCELLANEOUS REPLACEMENT PARTS LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CB-00	CONTROL BOX STANDARD	1
3	MF2-057-000	SIGN, CAUTION - ENTER ON GREEN	1
4	MF2-056-000	CAUTION SIGN	1
5	MF2-215-000	PLACARD - RESTRAINT OPERATION	1
6	MF2-216-000	ZIP TIE FOR CONTROL BOX PLACARD	1
7	MF2-012-200	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.

PARTS

CONTROL BOX PARTS

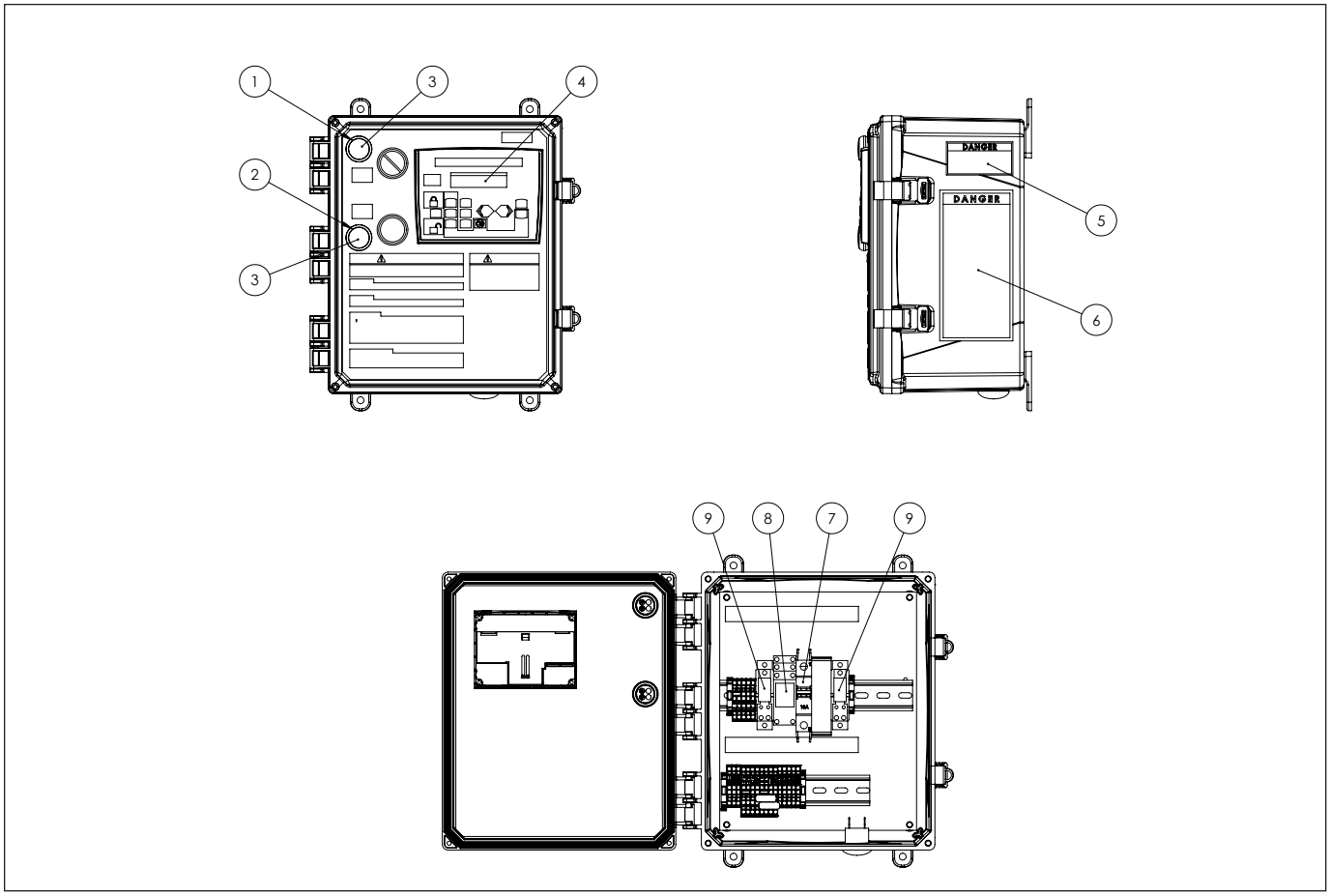


FIGURE 45—CONTROL BOX PARTS

CB-21 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

PARTS

LIMIT SWITCH KIT

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
50	MF2-024-420	LIMIT SWITCH MOUNTING PLATE	1
51	MF2-016-000	SERRATED FLANGE NUT, 3/8-16	1
52	MF2-038-000	LIMIT SWITCH, LS1	1
53	MF2-039-000	LIMIT SWITCH, LS2	1
54	MF2-041-000	SOCKET HEAD CAP SCREW, 1/4-20 x 1-1/2"	2
55	MF2-040-000	LOCK WASHER, 1/4"	2
56	MF2-028-000	CAM, LIMIT SWITCH	1
57	MF2-019-000	SOCKET HEAD SET SCREW, 5/16-18 x 1/2"	1
58	MF2-094-000	DECAL, CAM	1
59	MF2-023-000	MACHINE KEY, 1/4 x 1/4 x 1"	1

FIGURE 46—LIMIT SWITCH KIT

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 date of shipment. All claims for breach of this warranty must be made within 30 days after 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 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 sole responsibility of the Owner/User.

In 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 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
LOCK & LOAD™ VEHICLE RESTRAINT

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

- Extended 2-Year General Warranty—for a period of two (2) years from date of shipment, this warranty specifically applies to; 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; 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

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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