

EVR Series

Automatic Truck Restraints



Rugged. Dependable. PIONEER.

P.O. Box 338 • Spring Hill, Tennessee 37174 • 931-486-2296 • fax: 931-486-0316 • www.pioneerleveler.com

The EVR-600 is designed for grade mounting at dock face. Proper performance relies on adequate preparation and installation. Read the manual to fully familiarize yourself with the added value of this safety equipment. When properly installed and operated the EVR-600 will provide many years of optimal service.

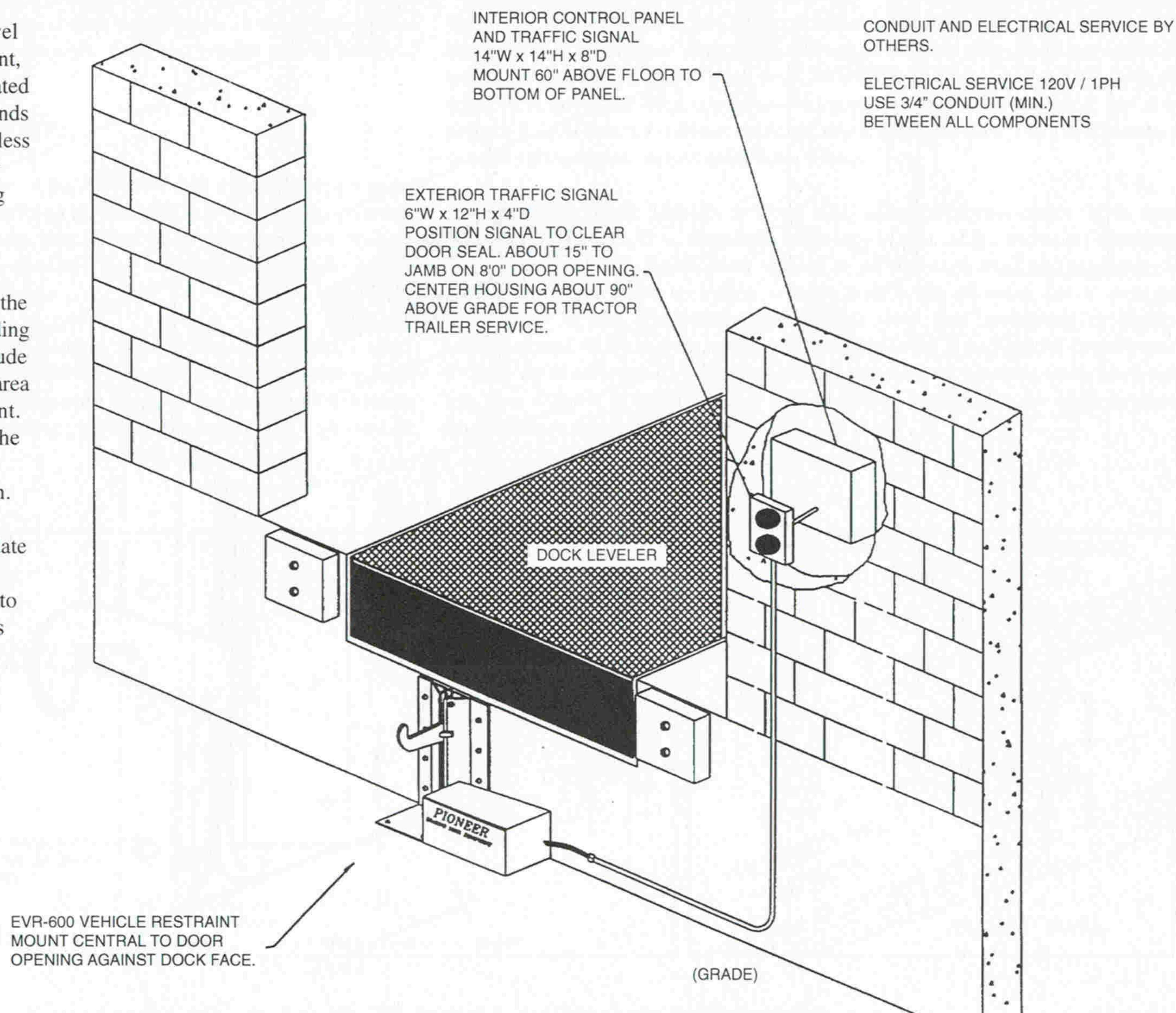
Be sure adequate electrical service is offered to insure proper operation of all electrical circuits.

If any information provided herein is not fully understood contact your local PIONEER representative or PIONEER direct.

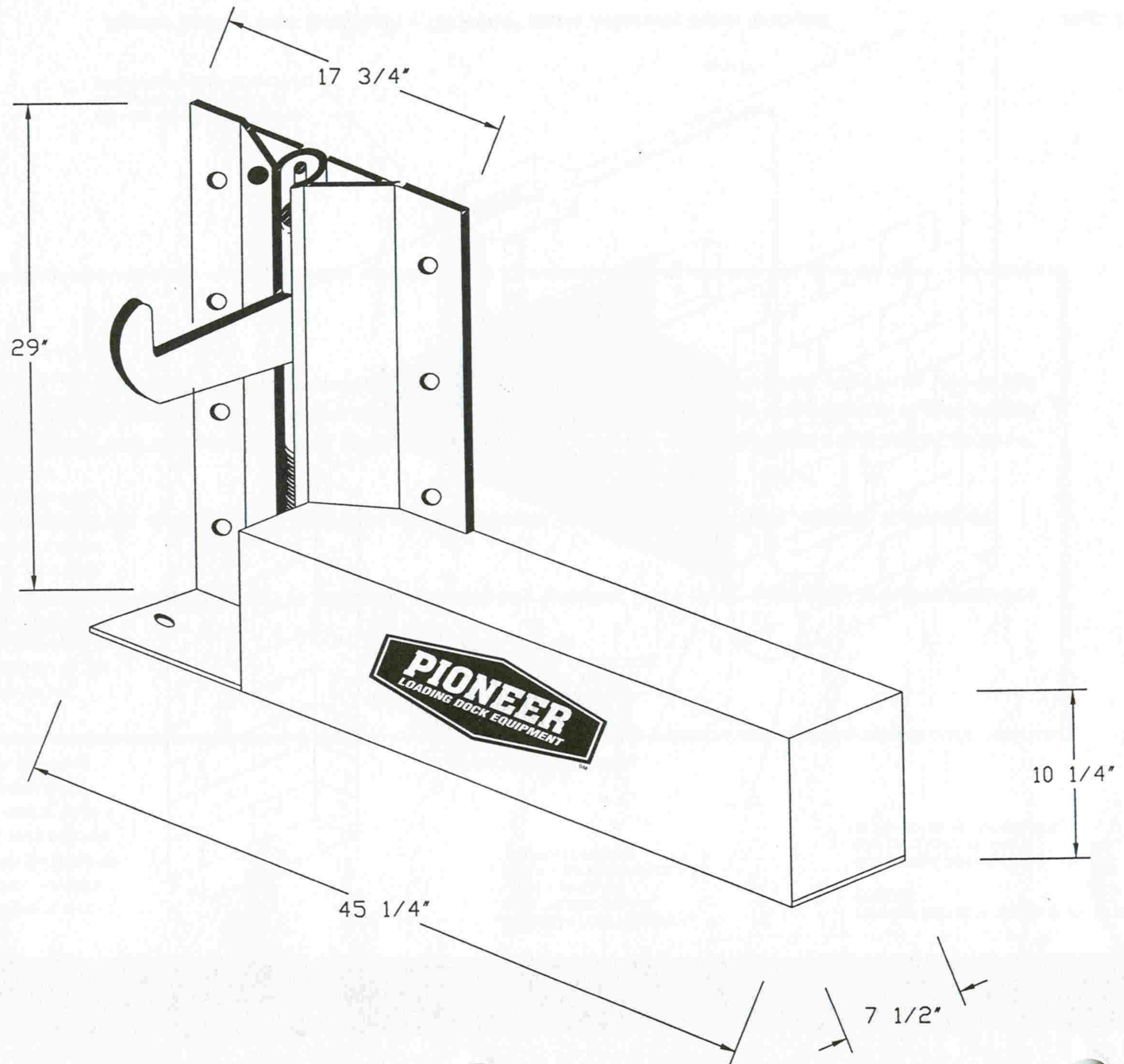
ARRANGEMENT OF THE DOCK AREA

This unit is designed for grade level location. If local conditions warrant, the Restraint Console may be located above grade. PIONEER recommends limiting above grade mounting to less than 2" to maintain clearance for projected new standards allowing lower ICC frame sections.

The success and strength of any installed product relies heavily on the conditions of the material surrounding the installation site. This will include the dock face and adjoining drive area for the EVR-600 Vehicle Restraint. Repair any structural defects to the dock face and / or drive prior to attempting equipment installation. If necessary, prepare alternate attachment methods to accommodate on-site conditions or contact your local representative or PIONEER to assist in preparation of accessories needed to adequately secure this product.



EVR-600 Submittal Drawing



ARRANGEMENT OF THE DOCK AREA

NOTE: attachment of this unit places anchor components in shear and tension rather than direct tension for added strength. Your best results will be achieved when all mounting holes are used.

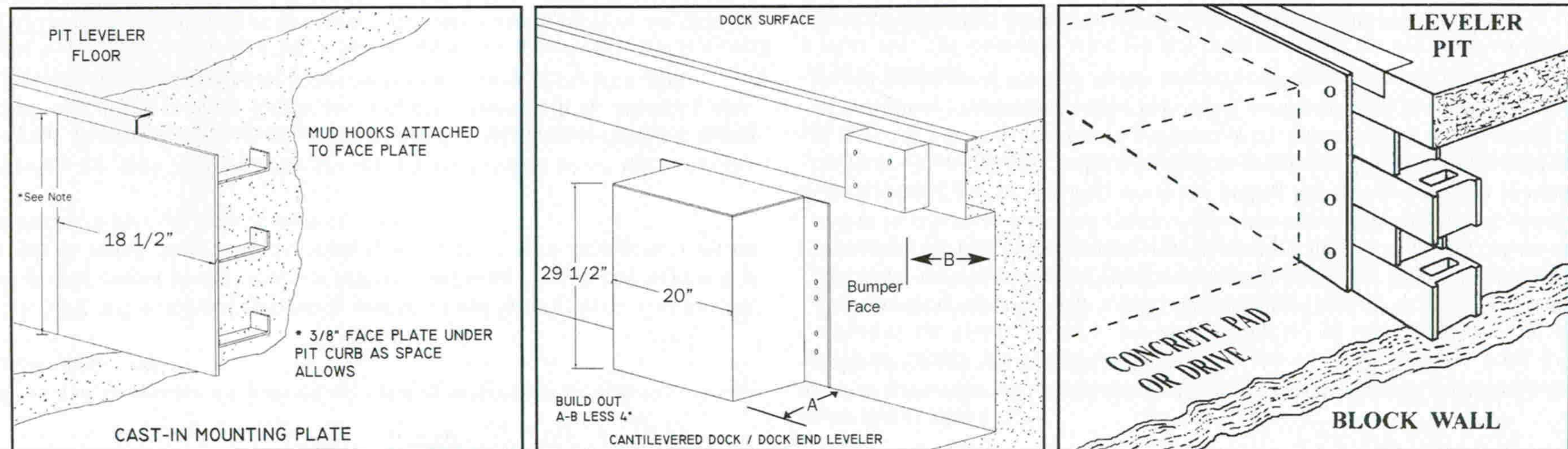
OPTIONAL INSTALLATION NEEDS:

New Construction: Preplanned use of the EVR-600 will afford the opportunity to use a cast in place anchor plate offered by PIONEER or prepared by others to become a fixed component of the dock face. These plates offer maximum strength and ease of installation. When imbedded in a new wall or during remodeling, the EVR-600 becomes a weld-on installation.

Leveler Overhang: Should building design offer a cantilevered dock shelf, extended bumpers or dock end mounted leveler (Edge-of-Dock product), the EVR-600 Restraint console must be mounted ahead of the dock wall a distance equal to the location of the dock bumper face from the foundation wall, less 4".

The console size is designed to accommodate industry standard 4"-6" dock bumpering. Any bumper projection more than 6" from dock face necessitates console positioning ahead of dock wall. PIONEER will prepare the EVR-600 per order to satisfy your dock conditions if known in advance. PIONEER can also prepare field adapters for these mounting needs. Discuss with your representative or local fabricator as on-site conditions require.

Cinder Block Wall: Usually a block wall offers minimal longevity to face mounted equipment. It is, therefore, necessary to take added measures to assure improved anchoring. A face plate welded to pit slab curb steel and extending to grade level with extra anchoring will be beneficial, allowing for a weld-on installation of the EVR-600. Additionally, firm foot anchoring is highly recommended. If a concrete approach is not available, a pad should be prepared 8" deep by 6' wide by 4', with two layers (separated) of reinforcement mesh not less than 4' by 4'. A cast-in anchor base is also recommended for weld-in place installation in these situations.



SECTION 1

INSTALLATION PROCEDURE

Read and understand all instructions prior to installation or operation of this safety equipment.

The EVR-600 is shipped completely assembled and factory tested. This product displayed proper operation under factory conditions prior to shipment and is ready to install. Inspect all materials received and review arrangement layout included to preview installation setup needs.

Review the dock face area directly beneath the location where truck docking occurs. Remove or relocate any obstacles which would prevent flush and secure mounting of this product. Repair any weakness observed in the mounting area. If conditions warrant, prepare a slab for base mounting of the EVR-600.

NOTE: Base mounting in conjunction with wall mounting provides the ultimate opportunity to maximize the installed strength of this safety equipment and is highly recommended particularly when wall conditions may not be optimum. However, local conditions including floating yard slabs or poor drive construction may negate or minimize the value of this feature. Particular attention should be given other opportunities to offer a maximum installed strength of this product in the event a portion of the prescribed installation method requires deviation from that noted. (See list of optional mounting alternatives.)

Position Restraint console and mark dock face and grade for anchors. Unit should be positioned to sit plumb (vertical) and level (horizontal) and as firmly against dock face as possible. Shim beneath bottom mounting rails as needed to provide firm footing. Shims should be steel and welded into position to avoid creepage or accidental dislocation. This unit is prepared for 3/4" diameter anchors. Minimum length recommended is 5" for wedge type anchors. (See other instructions if dock is not poured concrete construction). Eight (8) hole locations are provided for wall attachment and should all be prepared for anchors.

Grade attachment should be offered as allowed by conditions. Use same technique as wall mount if yard has concrete pad or drive. Compensate length of anchor for any shim addition under mounting plate. For black top or hard compacted drives provide anchor rods of 1/2" diameter by about 15" long.* These should be prepared with a modestly pointed nose to be driven into the

ground surface through the mounting holes offered. The top end should then be welded to secure rod to Restraint base.

The operating range of the EVR-600 offers engagement of most legally mounted ICC frame members. The unit performance will be limited to the position and strength of the ICC frame section which varies by manufacturer and design as well as its condition due to the extent of its maintenance, age and possible abuse. The EVR will accept very high stress and pulling forces, however, this too can be limited by installation technique, anchors and materials and/or the condition of the dock wall and drive area. Conditions or equipment failure due to accident or inadequate preparations and/or reasonable maintenance of the dock area and its equipment could result in further property damage or personal injury.

*Use 1/2" diameter rebar or similar for good grip characteristics.

MOUNTING CONTROL PANEL AND OUTSIDE LIGHTS

Mount Operator Station to convenient location which provides a good view for dock attendant of loading area. We recommend left side of opening looking "out" as shown in dock arrangements diagram as this simplifies installation. Right side of doorway mounting is fine if installation conditions warrant.

Mount exterior traffic light on truck driver's side of exterior wall (left side facing out) in area clearly visible to driver. Be certain to offer clearance for future or current installations of seal/shelter products. Light housing should be 90" above grade as noted on arrangement diagram.

Factory pre-wired junction box is inside Restraint console to harbor wire connections where control and motor leads from Operator Station will join prewired leads from console components.

Route conduit and connectors (supplied by electrical installer) to join console unit, Restraint console and exterior traffic light (wire also to be supplied by installer). Make connections per diagram inside light box.

Install trucker's instruction signs above and below traffic light where clearly visible to incoming traffic.

Supply and connect incoming electrical power to terminals within operator station.

FIELD WIRING THE EVR-600 CONTROL PANEL

The EVR-600 control panel comes pre-wired, ready for field installation. All field wiring is wired directly to the terminal strip provided. Figure 1 is an excerpt from the electrical drawings. It shows where to land the cable leads in the EVR-600 control panel.

There are three items that need to be wired in the field, power, outside lights, and the motor.

Power

120VAC is wired directly to the terminal strip marked 120 VAC and NEUT. The ground lead can be wired to the GND terminal.

Outside Light

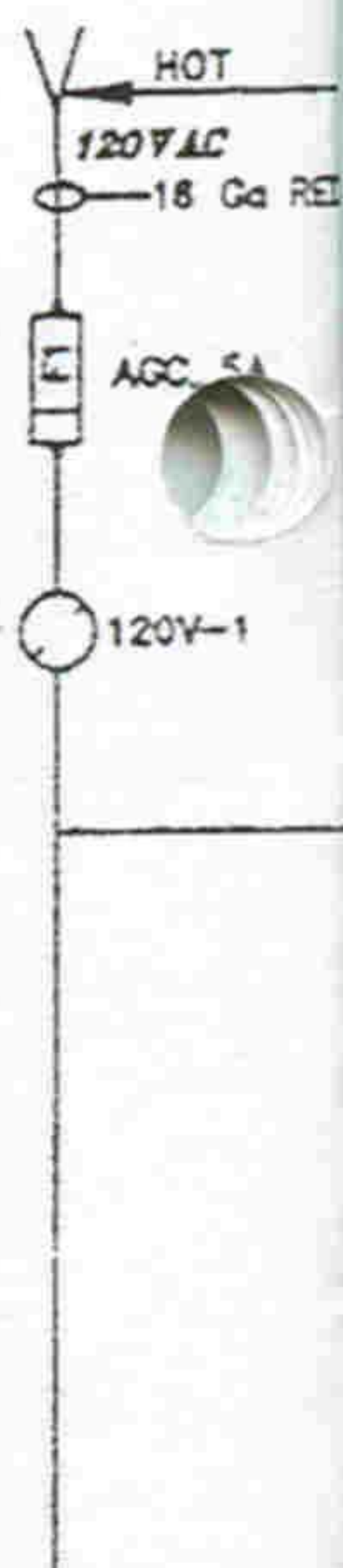
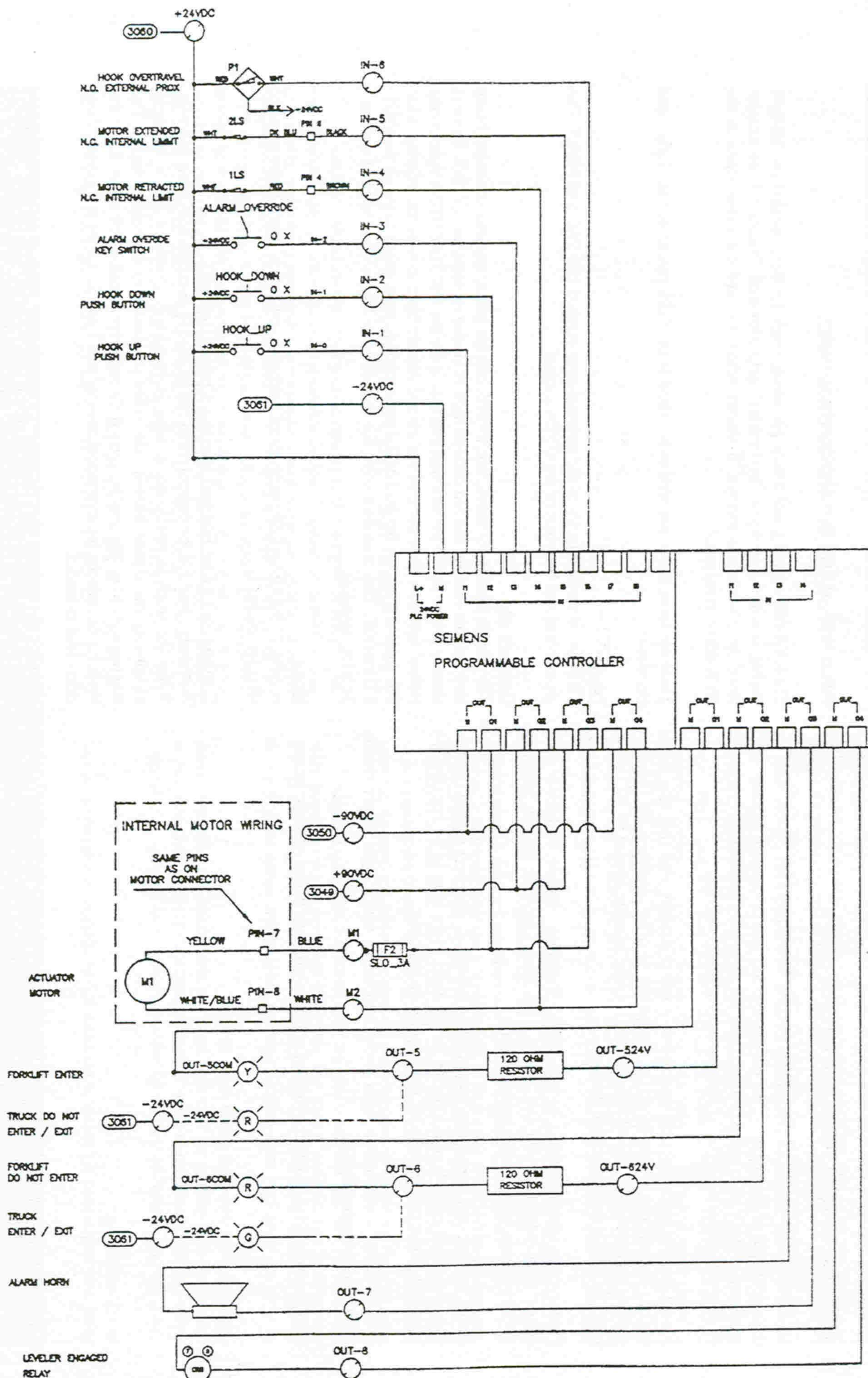
The outside light has 3 wires, one for red, one for green, and one common. Make sure that the lead for the red outside light is landed on terminal, OUT-5. There is already a wire in OUT-5 terminal and that is for the OK TO ENTER light on the control box, just slide the lead for the red outside light in with the existing wire. The same applies for the lead of the green outside light which lands on the OUT-6 terminal. The common wire for the outside lights should land on the -24 VDC terminal.

Motor

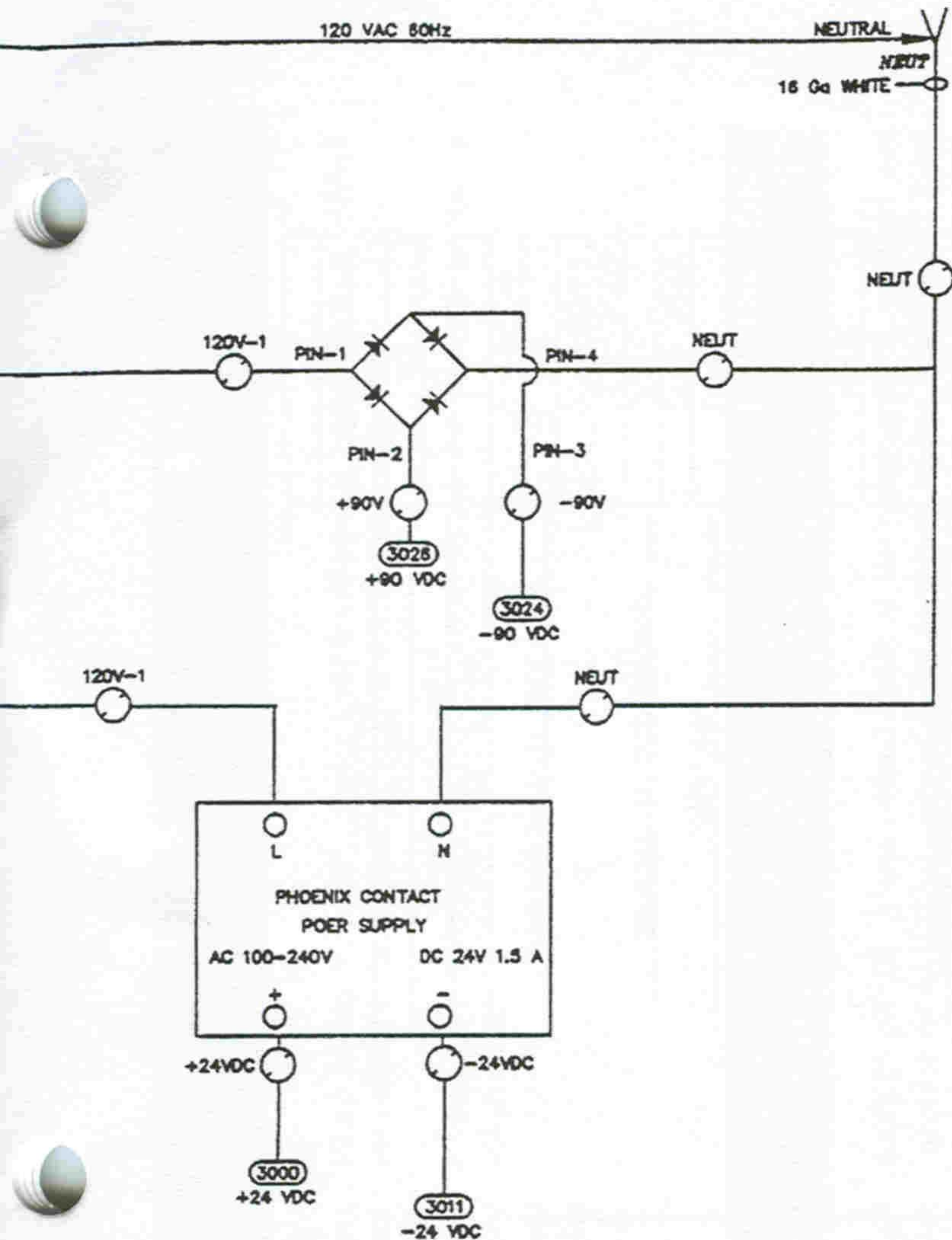
A color coded motor cable is provided with each unit and is wired to the terminal strip per Figure 1.

Contacts for Leveler Engaged Interlock Circuit (Optional)

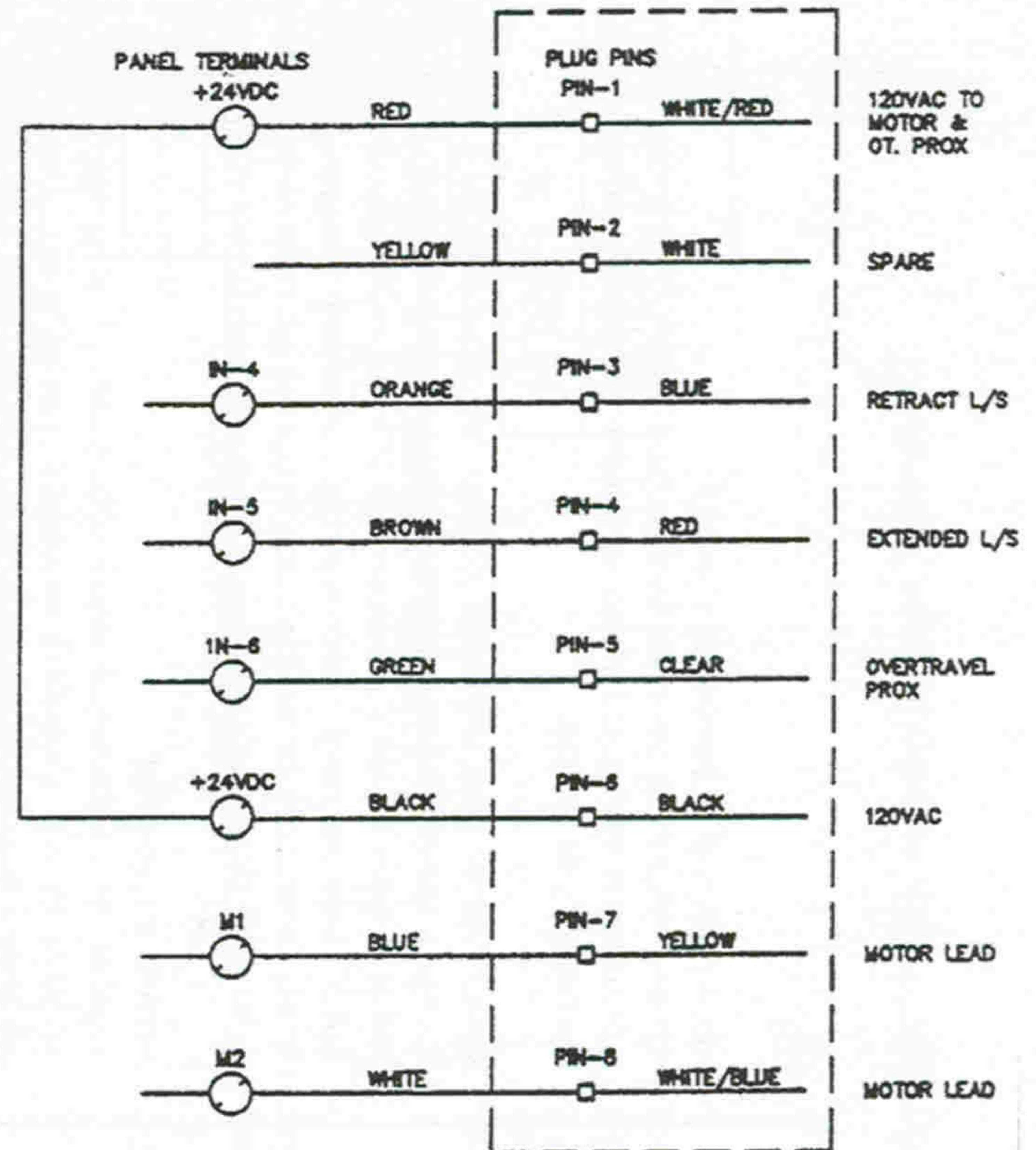
Terminals 1 and 2 in the control panel can be used to interface with other controls. When the truck is restrained, a relay is energized, closing a set of contacts, completing the circuit between the wires connected to terminals 1 and 2. The maximum current that can be carried through this circuit is 10 amps. Land the leads for the interfacing equipment in terminals 1 and 2, it does not matter where either lead is landed.



PIN-1
WHITE

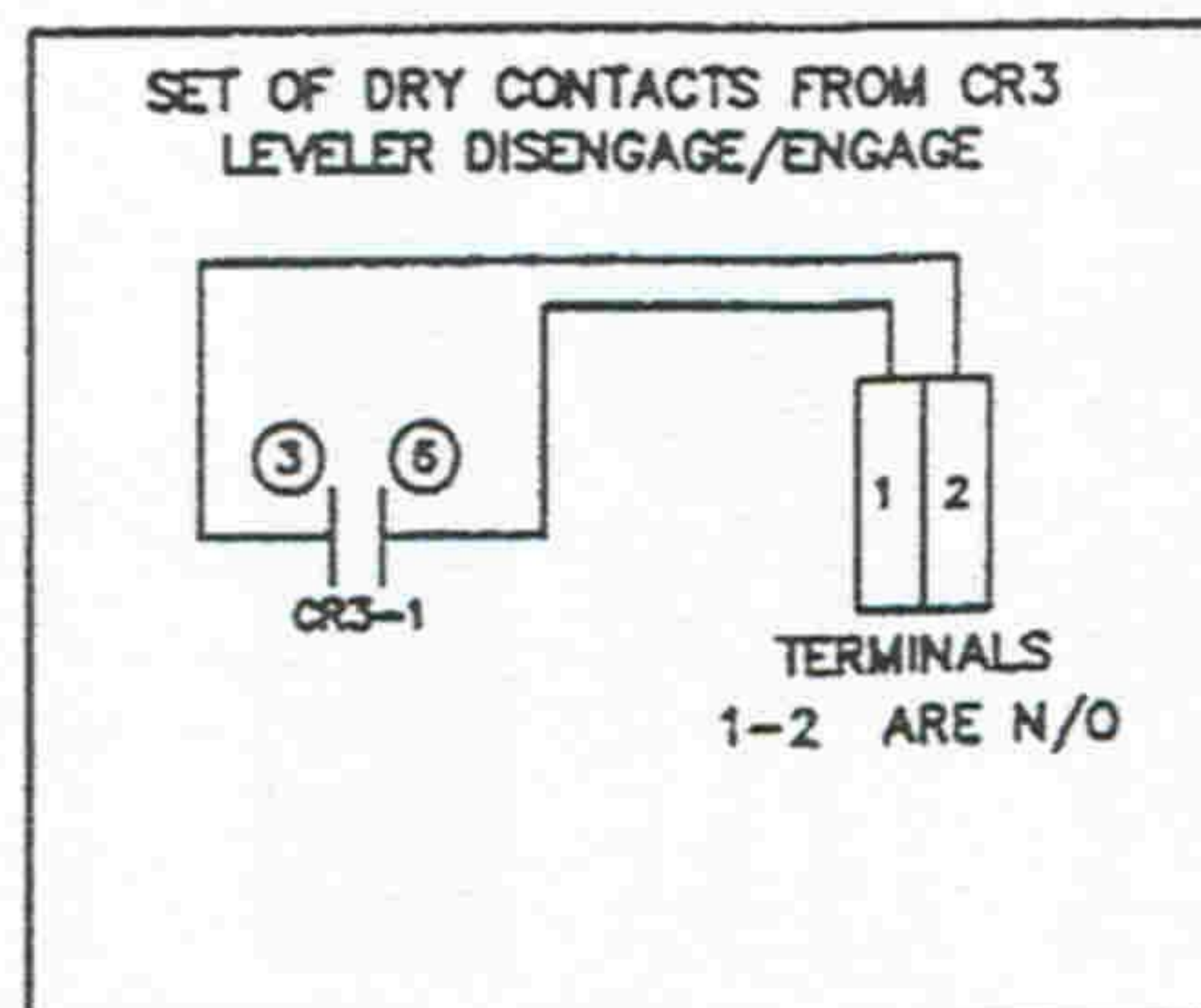
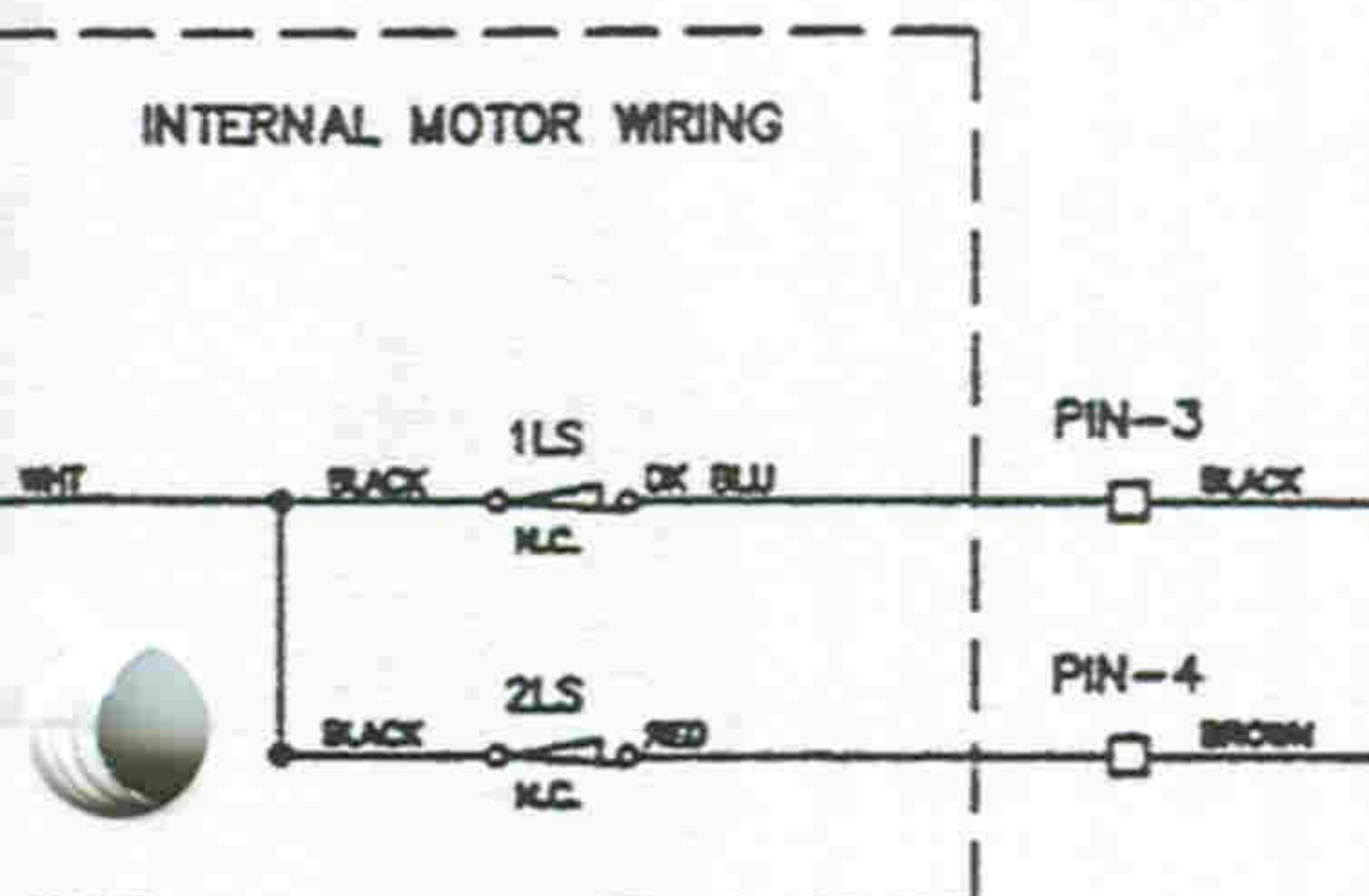


MOTOR CONNECTOR WIRING



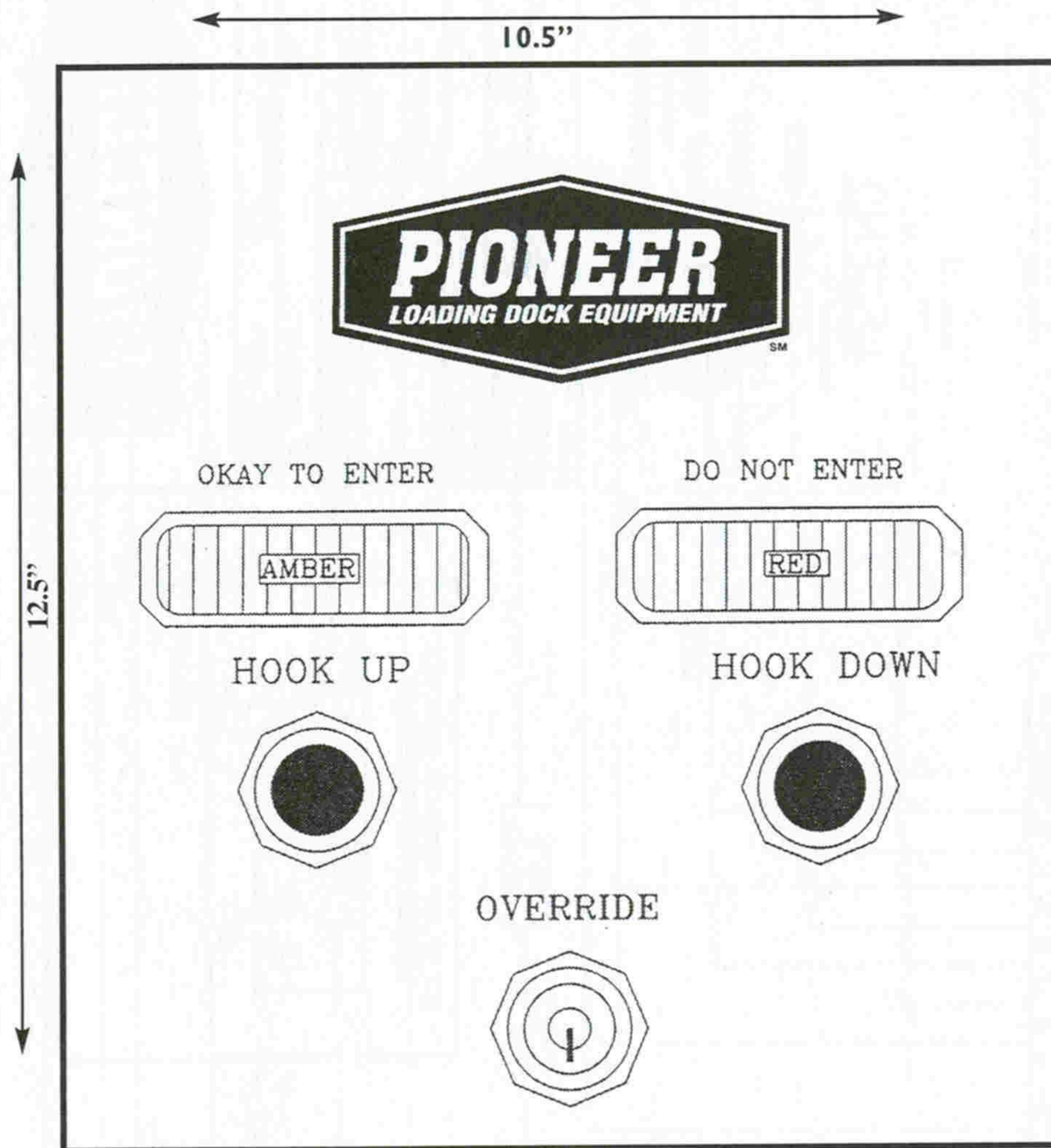
LEGEND

- FIELD WIRES
- PANEL WIRES
- ENCLOSURE TERMINALS
- MOTOR CONNECTOR PIN #



PIONEER_LOADING_SYSTEMS	
ELECTRICAL	
CONTROL_POWER_LAYOUT	
DESIGNED BY	DATE
DS	8/18/02
APPROVED BY	DATE
TK	8/18/02
REVISION NUMBER	2 OF 2
REV_3	
ADD_RESISTORS	
PIONEER_3001	





Panel Layout Drawing EVR-600
Truck Restraint Panel

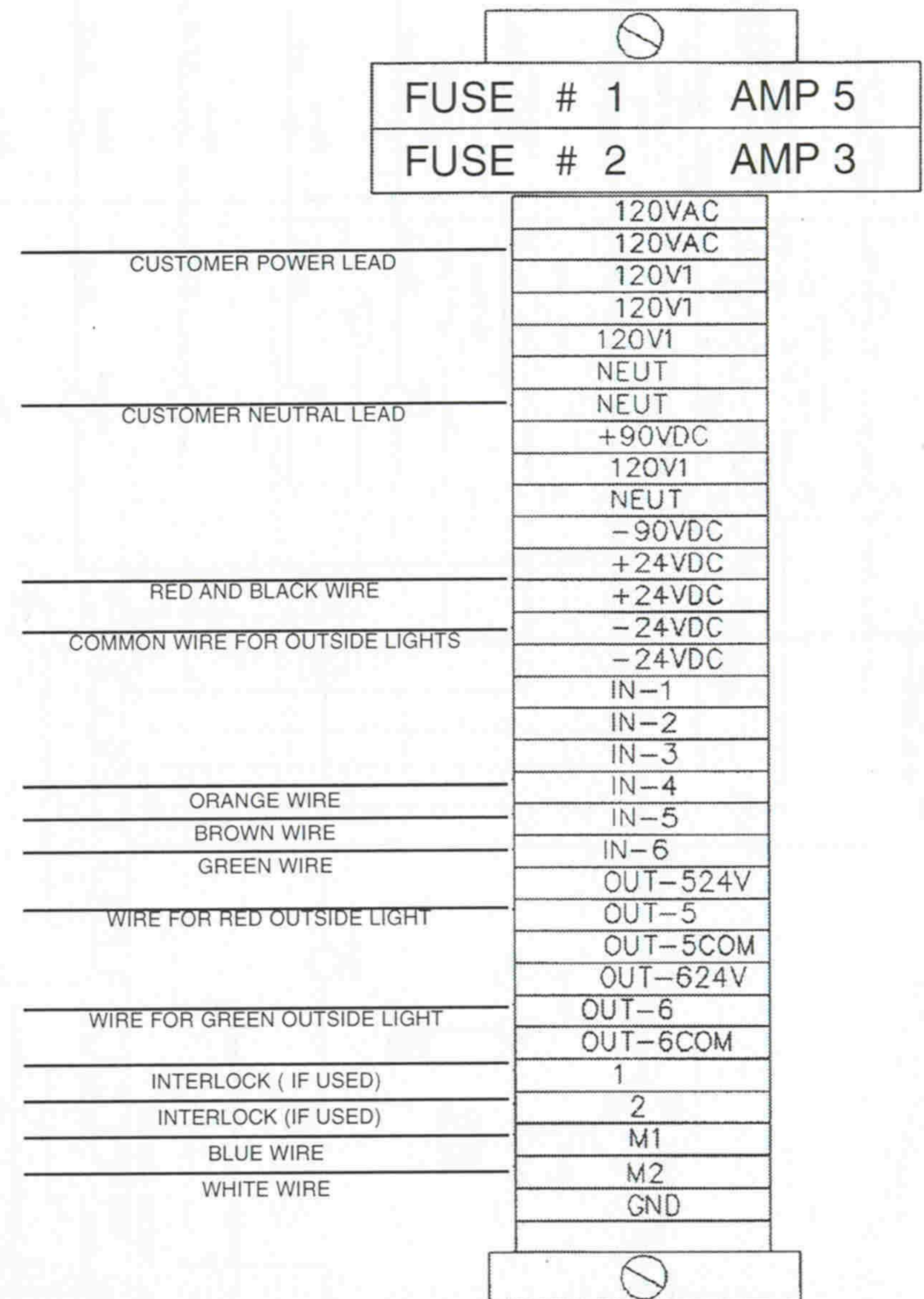


Figure 1.



SECTION 3

ADJUSTMENTS

Properly installed and serviced this Vehicle Restraint will greatly enhance safety during truck loading/unloading operations and should offer many years of service without a regular maintenance schedule. This product is designed for use in the outdoor environment. Regional and seasonal climate variables offer a wide range of maintenance possibilities for equipment exposed to the elements. The factory adjustment of this product offered proper operation prior to shipment. Although the factory attempts to offer equipment which will display normal operation for most installations, local conditions may require attention at installation to cope with specific site needs.

Please contact the factory to review any installation or equipment issue which is not covered by this manual or which is not fully understood.

Contact your authorized PIONEER representative for required service or adjustments.

SECTION 4

OPERATION

The PIONEER Vehicle Restraint uses state-of-the-art circuitry to engage and disengage the locking hook of this unit. This system eliminates the need for regular maintenance (other than minor lubrication) although an adjustment as previously noted may be in order.

Preparing to Run

In order for the system to operate normally, the truck restraint must be fully retracted. If the restraint hook is not fully down, turn the override key switch to override and then press and hold the hook down button until the hook travels all the way down. Once the truck restraint hook is fully retracted, turn the override key switch back to normal and the system is ready to run.

Engaging or Disengaging the Truck Restraint

With the truck docked firmly **against the bumper face**, the dock attendant simply presses, the "hook up" push button momentarily, which will raise the truck restraint hook and engage the truck. Once the truck restraint is fully extended, the "OK to Enter" light flashes on the EVR-600 control panel indicating a good loading condition. At the same time the Red outside light will begin to flash, indicating that the truck is restrained and warning the driver not to attempt a departure.

SAFETY NOTE: A brief, **visual check of the engagement** is necessary and should show the ICC bar captured by the restraining hook of the EVR-600. If the truck is noted to have a weak or missing ICC frame the attendant should notify the truck supervisor of the problem and see that other measures are taken to secure the truck prior to loading or unloading. The EVR-600 should remain engaged in order to offer a secondary safety opportunity by controlling truck traffic with its exterior traffic light.

When the "hook down" push button is momentarily pressed the restraint hook will power retract into the stored position next to the console housing and release the truck. Once the truck restraint is fully retracted, the "Do Not Enter" light will begin to flash on the EVR-600 control panel advising caution around the dock area because the restraint is deactivated and the truck may leave at any time. The Green outside light will begin to flash, indicating that the truck is free to move.

Override Key Switch

The override key switch is used to silence alarms and manually control the motor. Turning the key to the right puts the unit in override. Turning the key to the left allows the system to operate normally.

ALARMS

There are three (3) different conditions in which the alarm will be triggered. When any of the three alarm conditions exist, a buzzer sounds and the lights on the EVR-600 control panel blink in an alternating pattern. All alarms can be silenced by switching the override key to override. The conditions that cause alarms are given below.

1) The actuator does not complete its cycle up or down.

It takes approximately 25 seconds for the hook to complete an up cycle and a down cycle. If it takes longer than 25 seconds then the motor stops and the alarm engages. To get out of this condition, switch the OVERRIDE key on the control box to the on position (turn key clockwise), this turns off the alarm and enables the user to complete the cycle up by continuously pushing the HOOK UP push button until the hook reaches its up position. The user can also complete the cycle down by continuously pushing the HOOK DOWN push button until the hook reaches its down position. After the hook has reached the up or down limit, switch the OVERRIDE key off (turn counterclockwise).

2) The cable from the motor is disconnected.

Check to make sure that the motor cable is connected to the actuator and that the pins are making contact with each other. Once the connection is good the alarm will disengage.

3) The motor over travel limit is reached.

If the hook travels too far up, the alarm will engage meaning the hook has over traveled in the up position. To get out of this alarm condition, engage the OVERRIDE key switch (turn clockwise), then continuously push the HOOK DOWN push button until the hook reaches the down position. This will disengage the alarm. If the over travel alarm keeps engaging when the hook is in the up position, then user might have to adjust the extend limit switch on the actuator.

SECTION 5

MAJOR COMPONENTS

Restraint Console: A heavy steel housing, to enclose the operating components of the EVR-600, serves as the mounting framework for the unit installation. The console is offered for grade level mounting against the dock wall face. Alternate mounting options are available to satisfy unique local conditions.

Restraint Hook: Operates to engage the ICC frame section of the truck or trailer chassis. When engaged the Restraint hook offers resistance to truck movement. When disengaged the Restraint hook is stored beside the console housing to allow free passage of docking or departing vehicles.

Extension Spring / Motor Unit: EVR-600 hook is activated by extension spring. Drive motor maintains hook in retracted (stored) position. Lock circuit allows hook to engage truck via motor operation to release hook from stored position and attach to truck at ICC frame. Unlock circuit causes motor drive to reverse direction and retract hook for alongside console housing.

Operating Station: A fully-gasketed steel enclosure which mounts the operating push-buttons, the interior visual indicators and contains the electrical service which operates the motor and the interior/exterior visual traffic signals.

Exterior Traffic Lights: Impact resistant enclosure for housing red and green visual traffic control indicators to display docking or no-go conditions for trucker. To open light housing, screw clamps must be loosened to service lights or wiring.

SECTION 6

SPECIFICATIONS

Electrical: 120V AC, 15A. (Amp Draw = 1.5 Amps)

Motor Unit: Linear Actuator.

Wiring: Operator station prewired. Refer to field arrangement drawing (Page 1) for conduit and wire needs.

Limit Switches: Industrial quality momentary contact type. Used to control traffic signals and stop cycle in motor control circuit.

Push Buttons: Momentary contact type industrial quality switch.

Interior Lights and Exterior Lights: (Red and Green) L.E.D. 12V

SECTION 7

MAINTENANCE

Maintenance Procedure: Shut off electrical power before servicing electrical system or during lamp replacement.

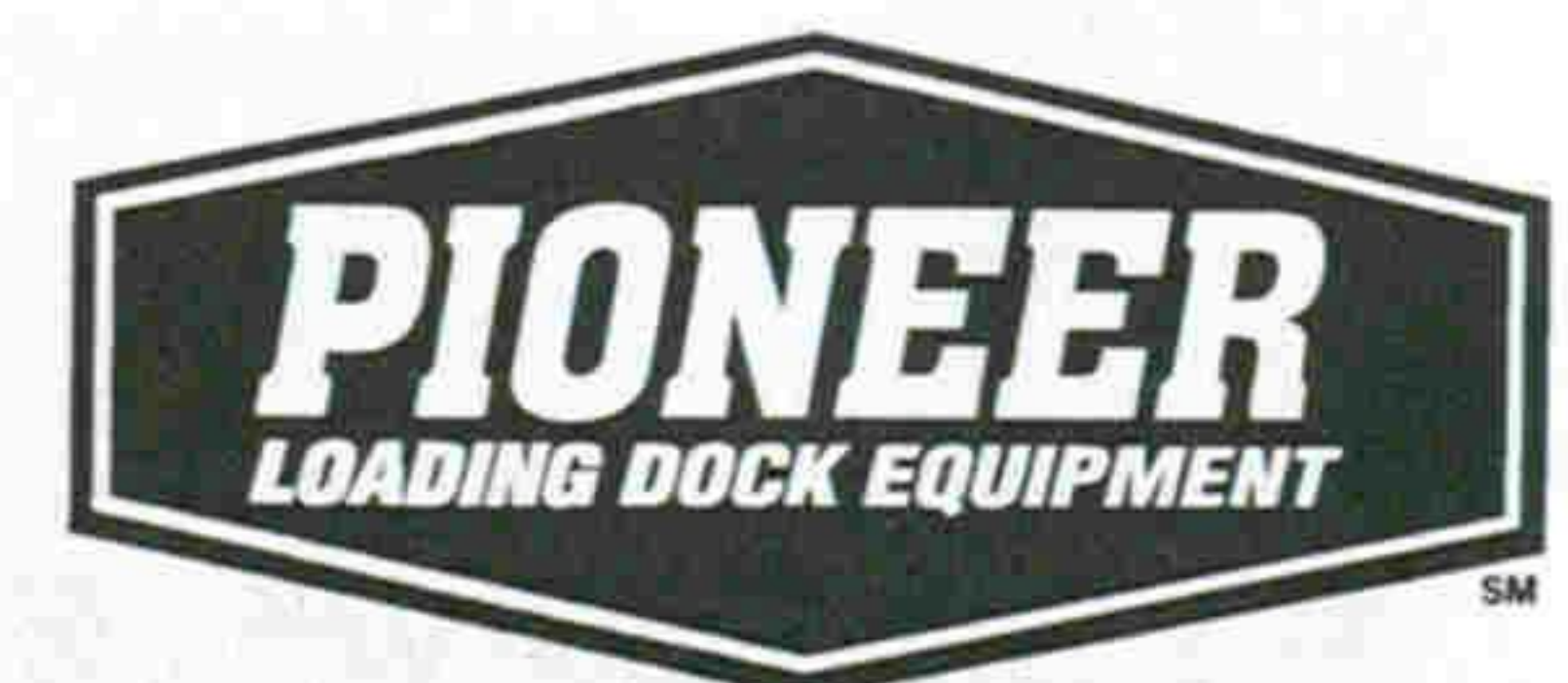
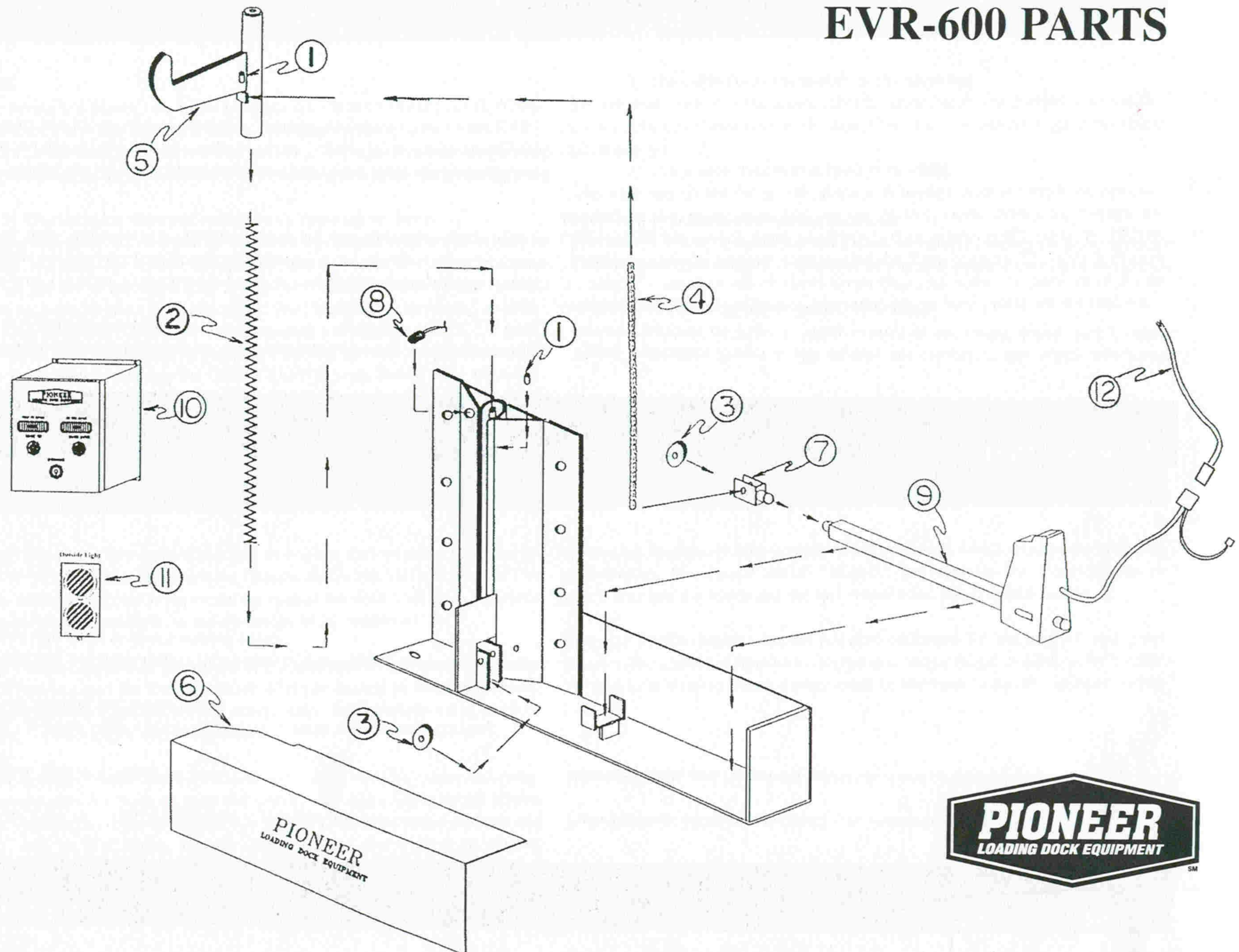
Remove four (4) bolts from console cover to open. Remove any debris. Inspect components for indications of potential problems (wear, damage). Cycle to review operation. Make adjustment or repairs as necessary. See Operation Instructions on Page 9.

Quick Check: Are all lamps on when required in cycle? Does the Restraint hook fully extend and motor stop to complete "Lock" cycle? Does the Restraint hook fully retract and motor stop to complete "Unlock" cycle?

Visual Indicator: Proper traffic signals are critical to this safety equipment. Review functions on Page 9. Verify correct lamps on/off during lock / unlock cycles. Shut power off before lamp replacement.

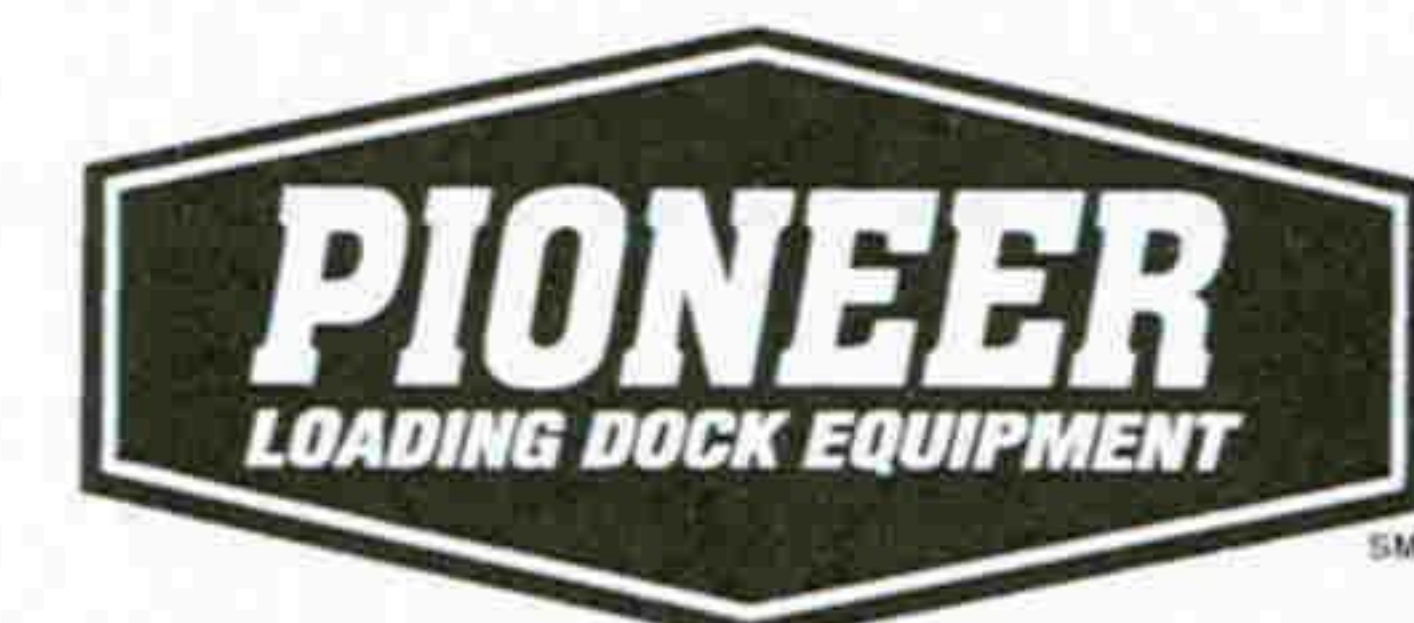
Lubrication: This product is designed to function without excessive lubrication. However, a squirt of white lithium grease or similar product on hook slide and chain will help promote a smooth operation.

EVR-600 PARTS



EVR-600 Parts List

Illus. #	Part Description
1	Hook Stop
2	Spring
3	2" Idle Pulley
4	Chain (28 1/2" long)
5	Master chain link # 35
6	Hook Assembly
7	Motor Housing Cover Plate
8	Idle Pulley Mount
9	Proximity Sensor (EVR only)
10	Motor and Actuator Arm
11	Control Box (CONSULT FACTORY)
12	Red / Green LED Outside Light
	Package
	Cable w/ pig tail



WARRANTY

PIONEER MANUFACTURING, INC. guarantees its EVR-600 Series Truck Restraint to be free from defects in materials and workmanship for a period of one (1) full year from date of shipment.

A claim for breach of warranty will be honored if the product has been properly installed, maintained and operated and not damaged by abuse.

PIONEER will exchange or repair any structural component found to be defective in nature.

PIONEER MANUFACTURING, INC. SHALL NOT BE LIABLE FOR LOSS OF USE OF ANY EQUIPMENT OR INCIDENTAL DAMAGES.

CAUTION

Contact your PIONEER representative or the factory if a malfunction occurs which is not understood. DO NOT attempt to correct the situation without proper information and understanding, as this may damage components and void the warranty.

SERVICE AND MAINTENANCE

PIONEER recommends periodic inspection and servicing of the EVR-600 Truck Restraint to assure proper operation and maximum life span of the unit. Units should be inspected a minimum of every six months, and if needed, can be adjusted and lubricated. Contact your local PIONEER dealer to secure a complete maintenance plan.