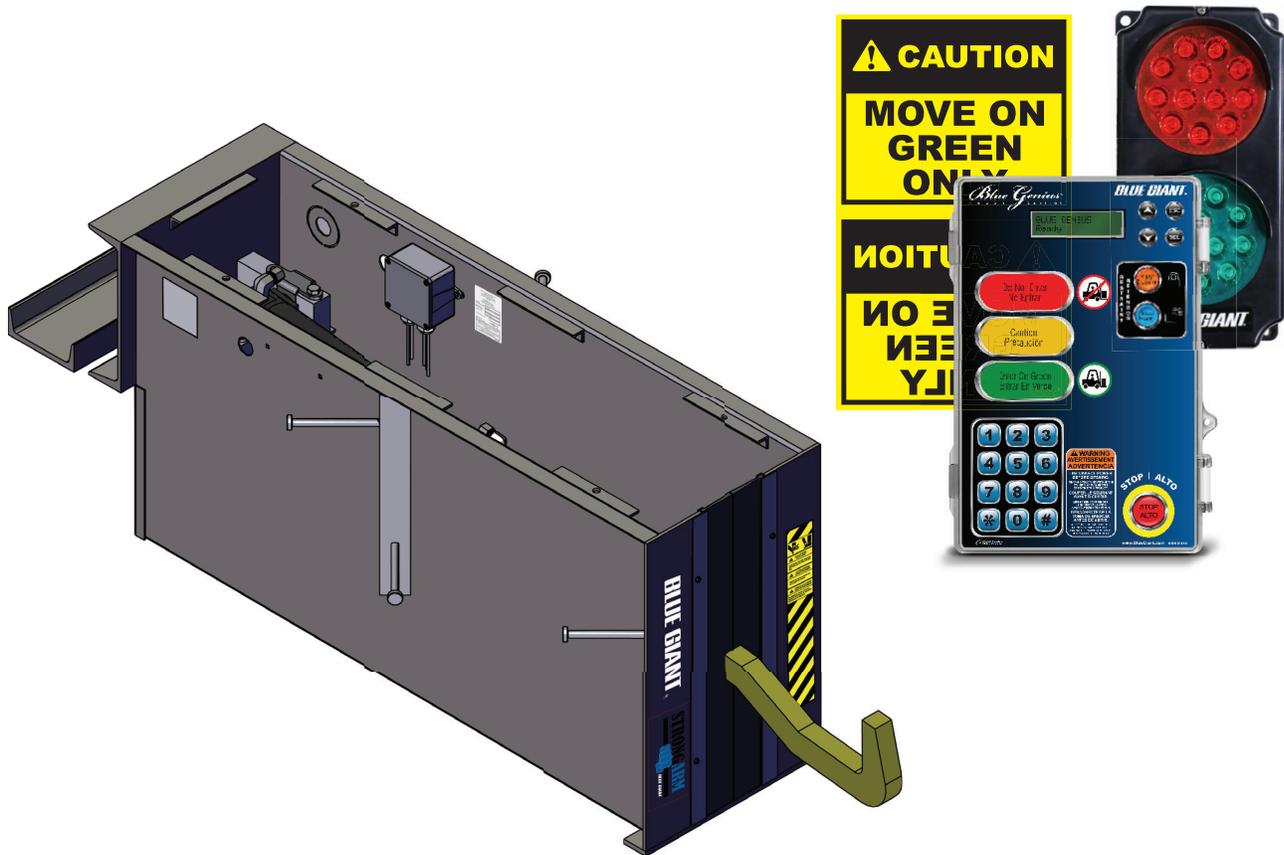


# INSTALLATION & TECHNICAL MANUAL

## STRONGARM™ RVR303 VEHICLE RESTRAINT WITH BLUE GENIUS™ TOUCH CONTROL



ACTUAL PRODUCT MAY NOT APPEAR EXACTLY AS SHOWN

### **WARNING**

Do not operate or service this product unless you have read and fully understand the entire contents of this manual. Failure to do so may result in property damage, bodily injury, or death.

**BLUE GIANT**®

STARTING FROM JULY 19, 2021 / SERIAL # 0.

ISSUE DATE: MARCH 28, 2028 REV. 1.1 (PART # 038-953E1)



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## 1.0 GENERAL SITE CHECKLIST FOR VEHICLE RESTRAINT

Use this chart to prepare the site for installation.

		Yes	No	Comments
1	Review site conditions. Have you completed and reviewed site survey report?	<input type="checkbox"/>	<input type="checkbox"/>	
2	Is there enough room to mount the RVR303 under the dock? <i>i.e. dock wall face.</i>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Is the electrical power present to hook up to? <i>i.e. on inside wall near control install location</i>	<input type="checkbox"/>	<input type="checkbox"/>	
4	Was the conduit(s) installed and properly positioned?	<input type="checkbox"/>	<input type="checkbox"/>	
5	Did you check to see if the proper voltage is supplied?	<input type="checkbox"/>	<input type="checkbox"/>	
6	When un-packing, were all the parts included? See "8.1 COMPONENTS AS SHIPPED CHECKLIST" on page 20.	<input type="checkbox"/>	<input type="checkbox"/>	
7	Do you have all the tools needed to complete the job? This includes ladder(s), safety equipment and personal safety devices. See "6.0 TOOLS REQUIRED FOR INSTALLATION" on page 16.	<input type="checkbox"/>	<input type="checkbox"/>	
8	Do you have all the anchors for the exterior driver traffic light, warning sign and control box? <b>Supplied by:</b> You, contractor, installer	<input type="checkbox"/>	<input type="checkbox"/>	
9	Have you read this installation manual and fully understood it?	<input type="checkbox"/>	<input type="checkbox"/>	
10	Do you have the Blue Giant technical support number? 1.800.872.2583. Before calling, make sure to have serial # of equipment.	<input type="checkbox"/>	<input type="checkbox"/>	
11	Do you know what ESD " <i>Electrostatic Sensitive Device</i> " is and how to handle? See "4.1 ELECTROSTATIC SENSITIVE DEVICE PROTECTION POLICY" on page 11.	<input type="checkbox"/>	<input type="checkbox"/>	

## 2.0 INTRODUCTION

The following is a quick reference to important procedures that must be followed while using the Vehicle Restraint Equipment. It is not intended to cover, or suggest that it does cover, all procedures necessary to ensure safe operation. All owners and operators should be aware of and abide by all workplace safety regulations applicable to the inspection and operation of the restraint. These laws and regulations include but are not limited to:

- The Occupational Safety and Health Act
- Canada Occupational Health and Safety Regulations
- Occupational Safety and Health Acts for Individual States (USA), Provinces, or Territories
- ANSI standard MH30.3-2015

For additional information on these regulations as well as industry standards that may apply to this product, please contact:

American National Standards Institute (ANSI)

1430 Broadway

New York, NY 10018

Telephone: 212.642.4900

[www.ansi.org](http://www.ansi.org)



Also a member of:

Loading Dock Equipment Manufacturers

A Product Section of Material Handling Industry of America

A Division of Material Handling Industry

8720 Red Oak Blvd, Suite 201

Charlotte, NC, 28217-3992

Telephone: 704.676.1190

[www.mhi.org/lodem](http://www.mhi.org/lodem)



## 2.1 WARRANTY INFORMATION

Thank you for purchasing Blue Giant products. We appreciate your business, and are confident that our product will serve you for many years to come. In the event that you experience a problem with our product, our Customer Support Team is here to support the Blue Giant Product(s) that you have purchased.

To validate warranty on recently purchased equipment, please complete and submit your information with our on-line Warranty Registration at [www.BlueGiant.com](http://www.BlueGiant.com).

For more information about Blue Giant Warranty Support, please contact your Blue Giant Dealer. You may also visit [www.BlueGiant.com](http://www.BlueGiant.com) or phone 1.800.872.2583.

**NOTE: All products must be registered to qualify for warranty.**

### DEALER INFORMATION

Name:

---

Contact:

---

Telephone:

---

## 2.2 EXCLUSION OF LIABILITY

To the maximum extent permitted by applicable law, the manufacturer assumes no liability for damage or injury to persons or property that occur as a result of use of the Vehicle Restraint Equipment. Furthermore, to the maximum extent permitted by applicable law, the manufacturer does not assume any liability for lost profits, operating downtimes, consequential, indirect, incidental, special, exemplary, punitive or enhanced damages, or similar losses, whether incurred by owner, authorized users and, other third parties. By use of the Vehicle Restraint Equipment, owner assumes all risk of liability for damage or injury to persons or property that occur as a result of use of the Vehicle Restraint Equipment, including, with respect to owner, authorized users and other third parties.

The manufacturer reserves the right to make changes at any time to the modules, components, and accessories, concurrent with its continuing product improvements and development program. Specifications, operating instructions, and illustrations included in this manual are subject to change without advance notice. As the Vehicle Restraint Equipment is a highly customizable product, please contact the manufacturer by telephone at 1.800.872.2583 for the latest information.

## 2.3 MANUFACTURER'S NOTE

The Vehicle Restraint System has been carefully inspected and tested at the manufacturer's plant prior to shipment, but **MUST be checked** upon receipt for transport damage. Any observed transport damage is to be listed on the signed copy of the freight document. **Notify the freight forwarder and the dealer of any damage WITHIN 24 HOURS.**

## 2.4 INSTALLER'S GUIDELINES

Please read all instructions carefully before installing this Blue Giant dock product. Proper installation of this product is required to ensure safe operation. Avoid accidents by recognizing dangerous procedures or situations before they occur.

It is the installer's responsibility to comply with the following:

- The installation of Blue Giant dock products must comply with all applicable local or national building codes and regulations, including any that may supersede this manual.
- Site surveys and other applicable install-related documentation must be properly and accurately completed prior to installation, and referred to by the installer.
- Failure to comply with this requirement may result in an improper install and possible voiding of the warranty.
- Follow any health and safety regulations as may apply to the work, not limited to:
  - PPE codes and regulations
  - Electric lockout/tagout procedures of any power source before performing any electrical work, in accordance with health and safety regulations (OSHA) and approved electrical codes
  - Hoisting or rigging codes and regulations
  - Welding and hot work codes and regulations
  - Power tool and hand tool safe operation
  - Concrete drilling codes and regulations

Only Blue Giant-supplied or approved parts must be used. Any unauthorized parts substitution may void the warranty.

### 3.0 SAFETY MESSAGE COLOR IDENTIFICATION

This manual includes color-coded safety messages that clarify instructions and specify areas where potential hazard exists. To prevent the possibility of equipment damage and serious injury or death, please observe strictly the instructions and warnings contained in the messages. If warning decals become damaged or missing, replace them immediately. Avoid accidents by recognizing dangerous procedures or situations before they occur.

 <b>DANGER</b>
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury

 <b>WARNING</b>
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

 <b>CAUTION</b>
Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

<b>NOTICE</b>
Procedures marked notice must be followed in order to prevent damage to machinery.

### 3.1 OPERATIONAL SAFETY WARNINGS

These are safety warnings that may be part of a procedure or hardware warning decal.

 <b>DANGER</b>
<ul style="list-style-type: none"> <li>• BEFORE BEGINNING ANY SERVICE PROCEDURES:             <ul style="list-style-type: none"> <li>– Disconnect the power and follow all lockout / tagout procedures.</li> </ul> </li> <li>• Installation must be performed only by trained and authorized personnel.</li> <li>• Prior to installation, place adequate barriers to prevent vehicle traffic from entering the work area.</li> <li>• Any electrical work must be performed by qualified personnel only.</li> <li>• Do not remove the wheel chocks until loading /unloading is finished and the truck is cleared for departure, or the vehicle restraint has been released and the lights have changed to RED inside and GREEN outside.</li> </ul>

 <b>WARNING</b>
<ul style="list-style-type: none"> <li>• Post safety warnings and barricade working area at dock level and at ground level to prevent unauthorized use of the restraint during maintenance/service.</li> <li>• Installation must be performed only by trained and authorized personnel.</li> <li>• Prior to installation, place adequate barriers to prevent vehicle traffic from entering the work area.</li> <li>• Any electrical work must be performed by qualified personnel only.</li> <li>• Never remove the wheel chocks until loading / unloading is finished and the truck driver has been given permission to depart.</li> </ul>

 CAUTION

- Always keep the work area clean and free of litter.
- Always maintain proper lighting in the work area.
- Only trained personnel should operate or service this equipment.
- Do not operate the restraint until the transport vehicle is parked against the dock bumpers.
- Conduct routine inspections and maintenance. Failure to do so could cause equipment damage and or personal injury.
- Call your authorized service representative or manufacturer immediately if a malfunction occurs.
- If a procedure is not clearly defined in this manual, contact your authorized Service Representative.
- Always return the restraint arm to the parked position after use.

## NOTICE

- During installation, anchors must be properly torqued to achieve the necessary anchoring strength.
- NOTE: DO NOT USE IMPACT DRIVERS.**
- Do not ground welding equipment to any electrical components.
  - Do not allow the drill to go too deeply when drilling holes in the control box. Damage to the control systems may occur.
  - Never use air to blow debris from control box. Use a vacuum to remove debris from control box.
  - Do not connect green ground lead into control box until all welding has been completed.
  - Check hydraulic fluid level.
  - Improper adjustments and / or lubrication may cause operational problems with equipment.
  - Always keep the work area clean and free of litter.
  - Always maintain proper lighting in the work area.
  - If an extension plate / box is required, securely mount it on the restraint with hardware provided before shimming and drilling.
  - Improper adjustments and / or lubrication may cause operational problems with equipment.
  - If a procedure is not clearly defined in this manual, contact your Blue Giant Dealer.

## 4.0 LOCKOUT / TAGOUT PROCEDURE AND RULES

In accordance with the rules and regulations of the Occupational Safety and Health Administration (OSHA) and/or local jurisdiction, all affected employees must be notified that the machine or equipment will be shut down and locked out to perform repair or maintenance work.

The work area must be checked to verify that all personnel have been removed or safely repositioned.

The machine or equipment power supply shall be locked in the **OFF** position or disconnected from the energy source.

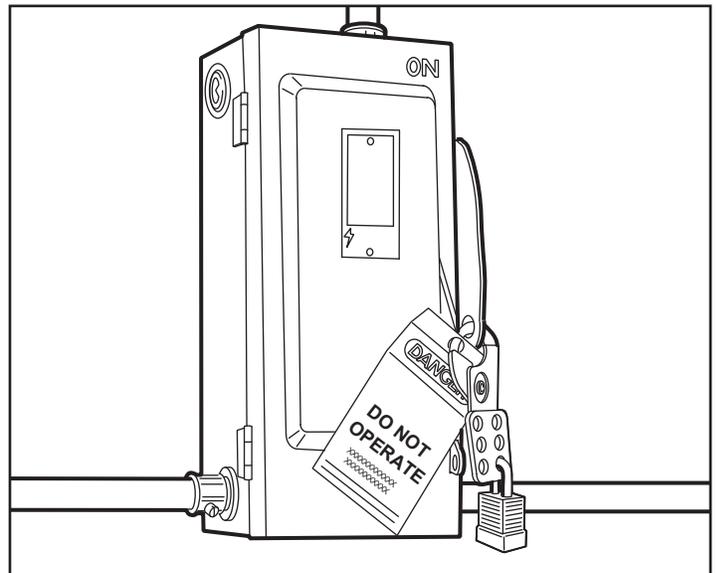
Blue Giant strongly recommends that only OSHA-approved and/or local jurisdiction lockout devices and procedures be utilized.

The energy isolating device must bear a prominent warning tag indicating that work is being done on the equipment and the name of the authorized employee responsible for the lockout.

It is mandatory that tagout notices shall **NOT** be susceptible to deterioration or illegibility due to weather conditions, exposure to chemicals and/or moisture.

### WARNING

Always lockout and tagout any power source before performing any work on any electrical devices or electrical controls according to OSHA regulations and approved local electrical codes.



An example of lockout / tagout. Verify and comply with local codes/ regulatory requirements.

## 4.1 ELECTROSTATIC SENSITIVE DEVICE PROTECTION POLICY

This policy applies to static sensitive electronic products primarily printed circuit boards (PCBs) and sensors. Switches, relay, lamps and wire are not sensitive and do not apply.

If welding near ESD components, correctly protect and ground all necessary equipment.



1. Prior to handling PCBs, wear a static grounding wrist strap and clip it to an electrical ground. The metal plate on the inside of the wristband must be in contact with the wearers skin.
2. PCBs should never be handed to other personnel or set down anywhere.
3. Place PCBs in black ESD shielding bags for return or storage. Only one PCB or sensor should be placed in a static bag. Attach paperwork and other items to the outside with adhesive pouches or elastic bands.
4. The control boxes protect the PCBs inside from static, and should not be used to store manuals or other accessories.

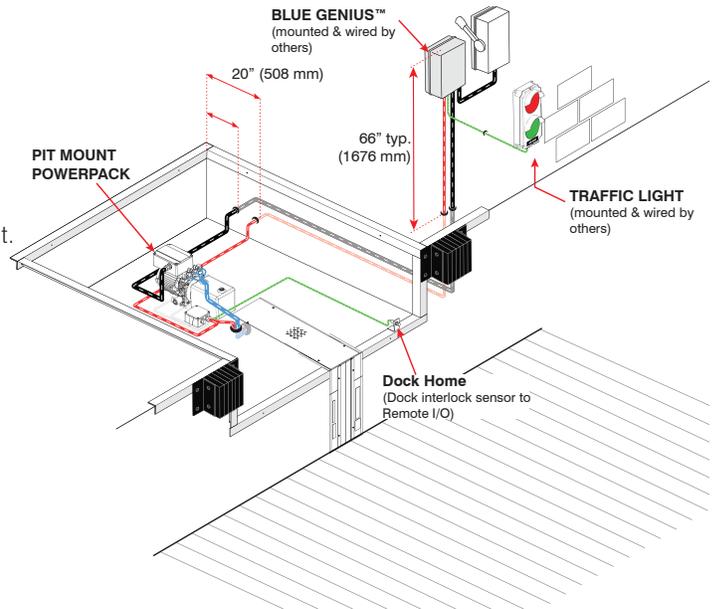
## 5.0 INSTALLATION LAYOUT

The facility environment will dictate the type of layout.

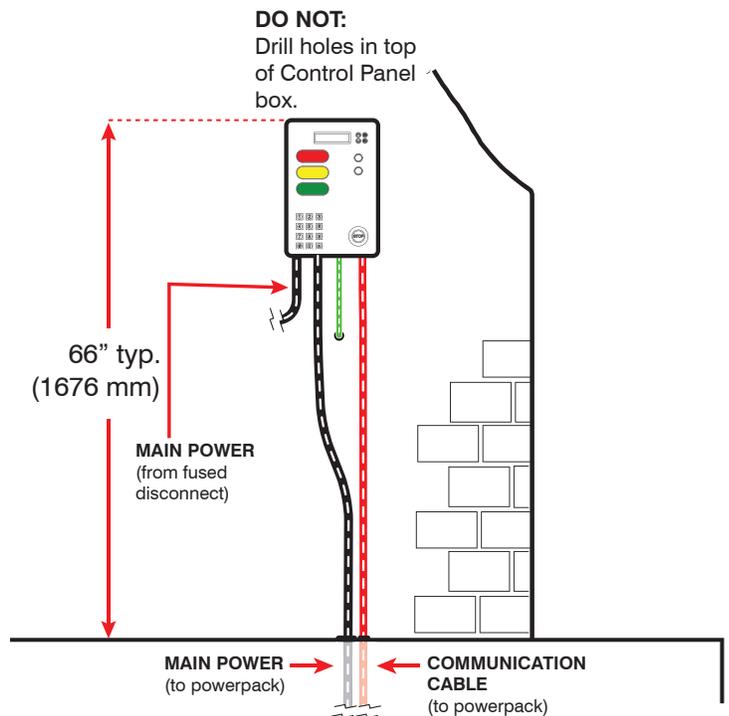
### NEW POWERPACK IN THE PIT CONSTRUCTION (CONDUIT POURED IN CONCRETE)

1. Drill one hole through the wall to the outside and wire the Exterior Traffic Light.
2. Run a 1 in. (32 mm) trade size conduit from the BLUE GENIUS™ (for the fused disconnect) to the hydraulic Powerpack in the pit.
3. Run a 1 in. (32 mm) trade size conduit from the BLUE GENIUS™ (for the communication cable) to the hydraulic Powerpack in the pit.
4. Run a 3 in. (76 mm) trade size conduit through the pit floor (for the Communication and Hydraulic lines) from the hydraulic Powerpack to the RVR303 conduit knockout.
5. Wire the lip sensor.  
See Section "11.2 WIRING DIAGRAMS" on page 38 for more information.

**MINIMUM CONCRETE STRENGTH**  
**3,000 P.S.I.**



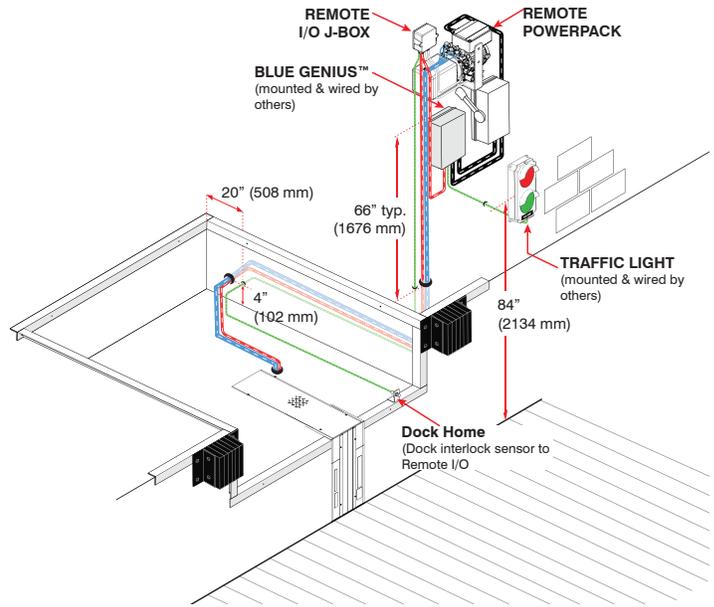
### INSIDE BUILDING VIEW



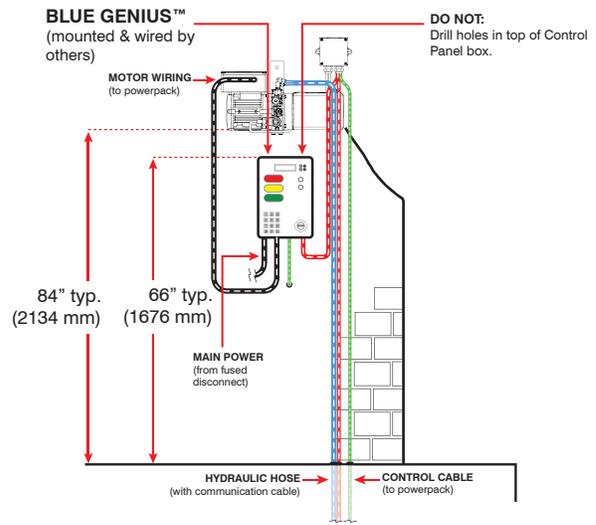
**NEW POWERPACK ON THE WALL CONSTRUCTION  
(CONDUIT POURED IN CONCRETE)**

1. Drill one hole through the wall to the outside and wire the Exterior Traffic Light.
2. Run a 3 in. (76 mm) trade size conduit from the BLUE GENIUS™ (for the Communication) and Powerpack (for Hydraulic lines) to the pit wall.
3. Run a 3 in. (76 mm) trade size conduit through the pit floor (for the Communication and Hydraulic lines) from the hydraulic Powerpack to the RVR303 conduit knockout.
4. Run a 1 in. (32 mm) trade size conduit from the BLUE GENIUS™ (for the lip sensor) to the pit wall.
5. Wire the lip sensor.  
See Section "11.2 WIRING DIAGRAMS" on page 38 for more information.

**MINIMUM CONCRETE STRENGTH  
3,000 P.S.I.**

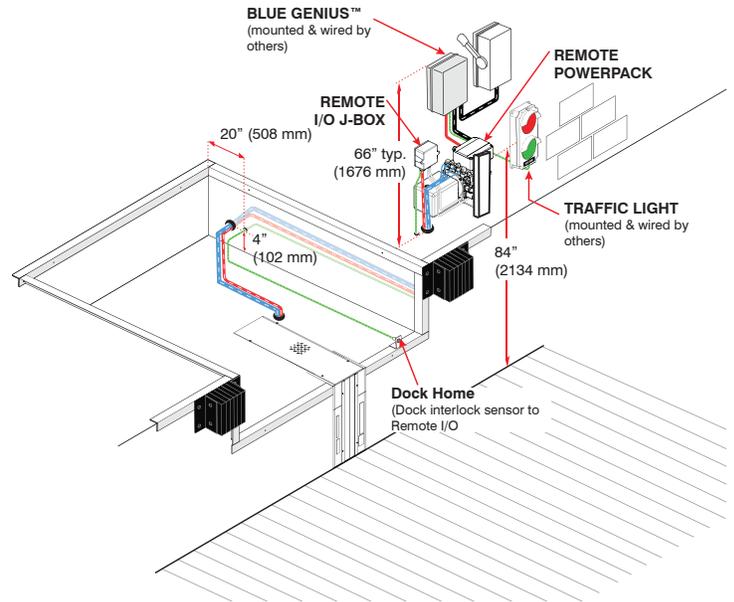


**INSIDE BUILDING VIEW**



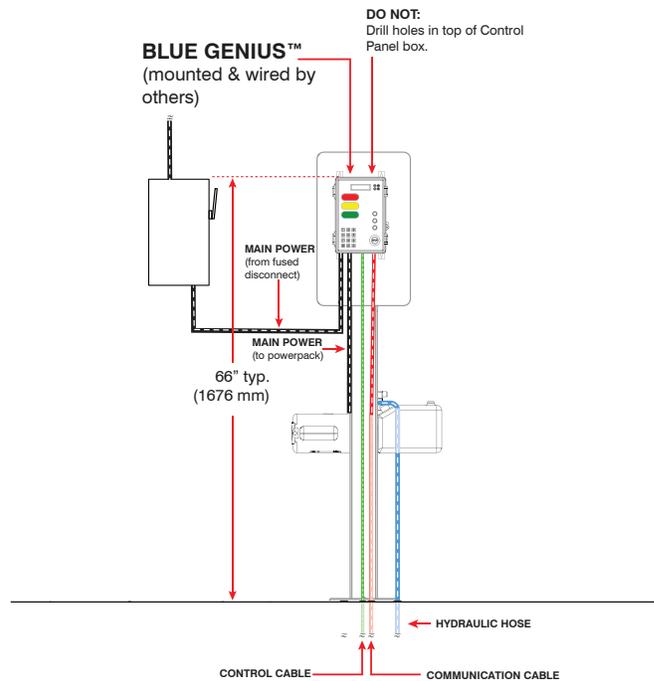
**NEW POWERPACK ON A POST CONSTRUCTION  
(CONDUIT POURED IN CONCRETE)**

1. Drill one hole through the wall to the outside and wire the Exterior Traffic Light.
2. Run a 3 in. (76 mm) trade size conduit from the BLUE GENIUS™ (for the Communication) and Powerpack (for Hydraulic lines) to the pit wall.
3. Run a 3 in. (76 mm) trade size conduit through the pit floor (for the Communication and Hydraulic lines) from the hydraulic Powerpack to the RVR303 conduit knockout.
4. Run a 1 in. (32 mm) trade size conduit from the BLUE GENIUS™ (for the lip sensor) to the pit wall.
5. Wire the lip sensor.  
See Section "11.2 WIRING DIAGRAMS" on page 38 for more information.



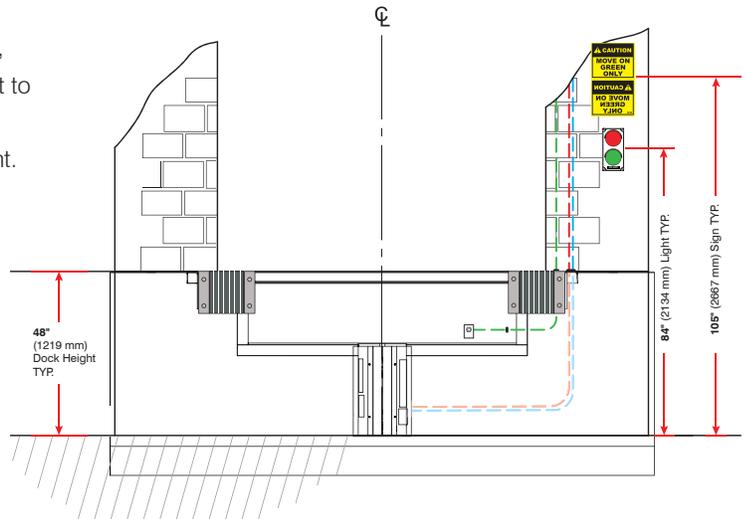
**MINIMUM CONCRETE STRENGTH  
3,000 P.S.I.**

**INSIDE BUILDING VIEW**



**FRONT ELEVATION VIEW**

If the optional advanced lights communication package is included, securely mount the exterior traffic lights on the exterior wall adjacent to the doorway (on the driver's side), at approximately 7' (2134mm) above ground level. In this case, mount sign 8" (203mm) above light.



See Section “10.8 INSTALLING THE EXTERIOR DRIVER TRAFFIC LIGHT” on page 32 and “10.9 INSTALLING THE EXTERIOR DRIVER WARNING SIGN” on page 33

**ELECTRICAL REQUIREMENTS**

1. Mount control station to wall.
2. Fused disconnect provided by others and wiring by others.
3. Install wiring from control station to hydraulic Powerpack.
4. Install wiring from Powerpack to power supply.

## 6.0 TOOLS REQUIRED FOR INSTALLATION

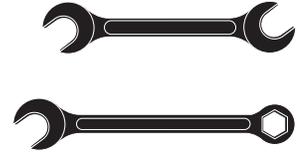
These tools are required for the complete and safe installation of the RVR303 restraint.



Hammer Drill



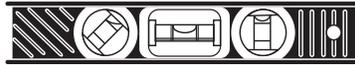
Tape Measure



Combination wrench set 3/8" to 1"



5/8" and 1/4" Concrete Bit Carbide



2' Level



Socket Set 3/8" to 1"



Blow-out Pump, Concrete Dust



Ball Peen Hammer



Small Flat Screwdriver  
(flat tip to be suitable for .150 slot)



Large 1/8" x 3/8" Screwdriver



Electrician's Tools



Welder



Sledge Hammer 10 lb



Welder



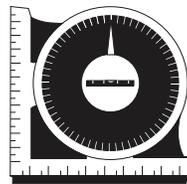
Torque Wrench



Grinder with Zip Blades As Well



Funnel



Angle Measurement Tool



Drill/Screwdriver



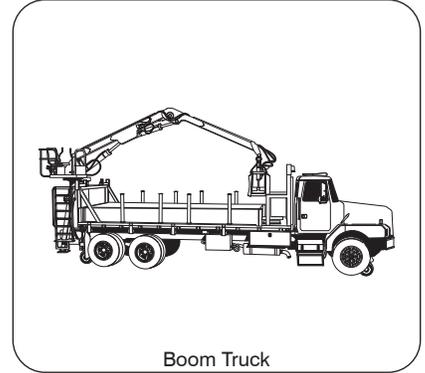
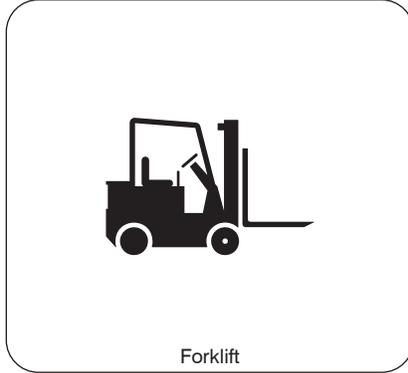
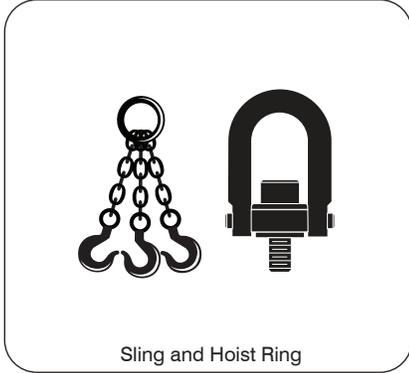
Nut Driver Drill Bit 5/16"



Conduit Bender

## 6.1 RECOMMENDED EQUIPMENT FOR RIGGING OR HOISTING

This equipment is recommended for the safe hoisting of the RVR303 restraint into a pit. All necessary regulatory rules must be followed for safe handling of the dock lift.

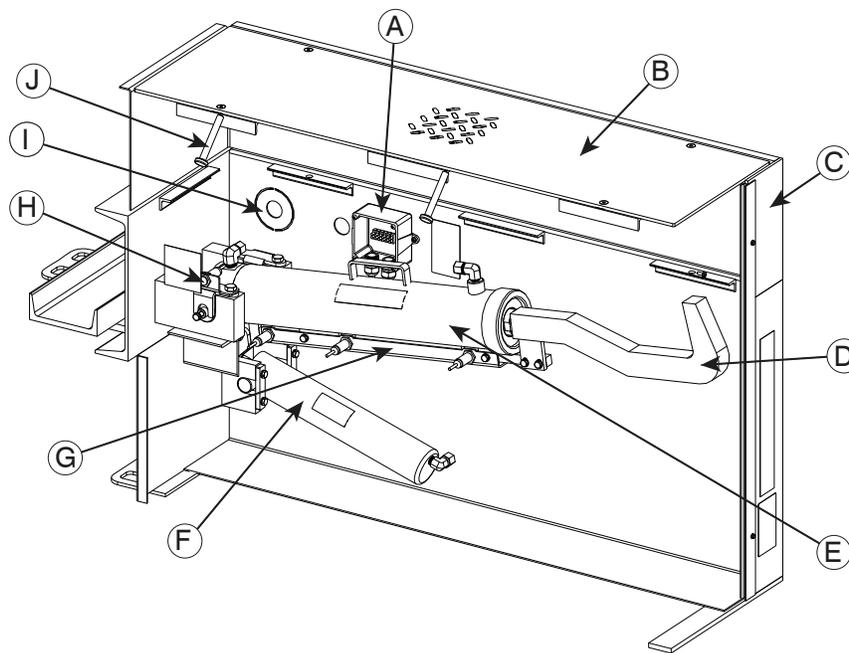


## 7.0 GENERAL DESCRIPTION

This sections describes the general parts of the restraint. See below for names of general Blue Giant dock components. These names will be used throughout the manual.

### **⚠ WARNING**

- Do not install, operate, or service this product unless you have read and followed the safety practices, warnings, and installation instructions contained in this manual and owner’s manual. Failure to do so could result in death or serious injury.
- Place barricades around the pit on the dock floor and driveway while installing, maintaining, or repairing dock lift.
- Improper installation of anchoring devices or installation into aged or unsound concrete could result in death or serious injury.
- Inadequate lifting equipment or practices can cause a load to fall unexpectedly.
- Make sure the lifting chain or other lifting devices are in good condition and have a rated capacity of as much as 5000 lb (2268 kg) for the lifting angle used.
- Failure to follow this warning can allow the dock equipment to fall, tip, or swing into people, causing death, or serious injury.



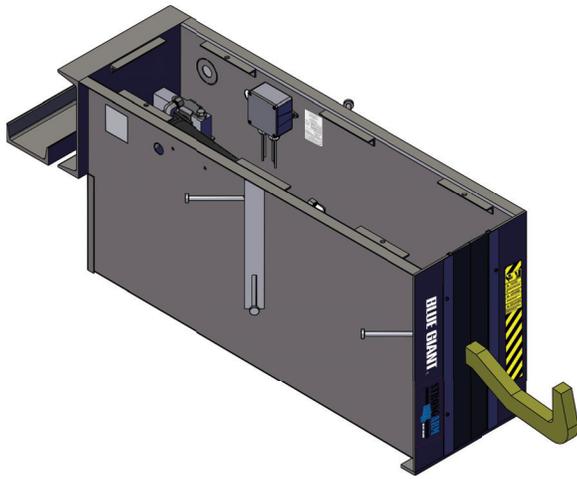
Callout	Description
A	Junction Box
B	Flat Cover Plate (Varies on model)
C	Retainer (side removed for illustration) (Varies on model)
D	Hook, Recessed Restraint
E	Hook Cylinder
F	Tilt Cylinder
G	Guidance Channel Assembly
H	Proximity Sensor
I	Conduit Opening / Knockout
J	Weldment Nelson Stud (side removed for illustration)

## 8.0 EQUIPMENT COMPONENT ILLUSTRATIONS

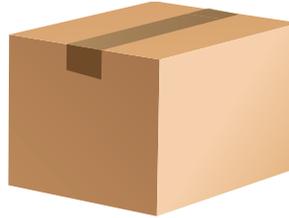
This section displays the various hardware components.

### 8.1 COMPONENTS AS SHIPPED CHECKLIST

This section displays the hardware components prepared for shipment.



A



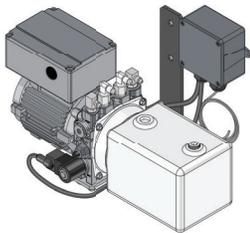
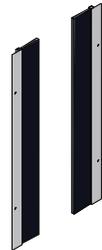
B



C



D



E

✓	ITEM	QTY.	PART NO.	DESCRIPTION	APPROX. WEIGHT	
	A	1	(varies on order)	RVR303 Assembly	350 lbs	158.8 kg

STRONGARM™ RVR303 VEHICLE RESTRAINT — INSTALLATION & TECHNICAL MANUAL

✓	ITEM	QTY.	PART NO.		DESCRIPTION	APPROX. WEIGHT	
	B	1	038-954E		Operation/Warning Placard	—	—
		1	038-953E		Owner's Manual	—	—
		1	038-953EI		Installation Manual	—	—
		1	038-953EPL		Parts List	—	—
		1	BGG0S_F		Complete Control Assembly English / French	6.2 lbs	2.81 kg
		1	BGG0S_S		Complete Control Assembly English / Spanish		
		1	032-806		Exterior Traffic Light	1.3 lbs	0.6 kg
		1	028-206		Lip Sensor	0.4 lbs	0.18 kg
		1	21-002154		Mounting Bracket		
	C	1	038-225	E	Exterior Driver Warning Sign (English / French/ Spanish)	0.7 lbs	0.32 kg
				F			
				S			
	D	2	1001730		Retainer Assembly	1.5 lbs	0.45 kg
	E	1	1002880		PowerPack (See section for Voltages)	90.9 lbs	41.2 kg
		1	038-538		Breather Cap with Dipstick	< .5 lbs	< .22 kg

## 9.0 INSTALLATION GUIDELINES



### WARNING

Use caution when lifting or moving the restraint. Do not attempt to lift without suitable hoisting equipment capable of lifting as much as 5000 lb (2268 kg). Do not work beneath a raised object. Follow all hoisting safety requirements.

This section describes environmental requirements before hardware installation can happen.

1. Prior to installation, clean the pit thoroughly and verify that all dimensions are in accordance with manufacturer specifications.
2. Must be level side-to-side and front-to-back.
3. Must be square at both rear corners.
4. Side curb angles must be parallel to each other.
5. Finished floor to be flush with top surface of curb angle.

The restraint must be embedded in cement independent of the dock leveller as indicated in the installation instructions.

## 9.1 RESTRAINT INSTALLATION

These procedures describe a typical pit installation of the restraint and the necessary controls to work in unison with a dock leveller.

## 9.2 HOIST RESTRAINT WELDMENT BODY

Follow these guidelines to safely hoist the restraint. If the body weldment is shipped separately, install the internal components after the concrete pour procedure is complete.



### DANGER

Follow local regulation requirements for hoisting.

Do not work, stand near, or put any part of your body under any hoisted object, restraint, or dock equipment.

Do not leave any load on the lift while performing these procedures or any service work.

It is recommended that two persons should perform these procedures.



### WARNING

Always lockout and tagout any power source before performing any work on any electrical devices or electrical controls according to OSHA regulations and approved local electrical codes.

1. Carefully sling the lift into position. Follow local regulation requirements for hoisting.
2. Lower restraint weldment body into position, as per drawings: centered or off-centered.
3. Measure the restraint to verify that it is level and the correct height from the pavement or surface where vehicle will be parked.

## 9.3 LEVELING AND SHIM PLACEMENT

This section describes the leveling of the pit floor and possible shim placement, required after grading, but before hoisting the restraint into position.

1. Clean the pit / pad and verify that all dimensions and conduit locations are in accordance with pit / pad drawings.
2. Verify that the restraint pit floor is level and the required depth for the restraint.
3. If the restraint pit floor is not a sufficient height for the restraint to have the necessary clearance, do either or both of the the following.
  - Add more or remove material to bottom of pit and level.
  - Place sufficient shims until the restraint will have the necessary three (3) inch clearance to operate.
4. Unpack the power pack and prepare hydraulic hose, vent line, and electrical wire for pulling through their respective buried conduit. Do not tie hydraulic hose and vent line together except at pulling end.

**NOTE:** Electrical wire(s) must NOT be in the same conduit as the hydraulic hose(s).

5. Pull hose, line, and wire through their respective conduits and into pit / pad area.
6. Prepare slings and hoisting equipment as required.

## 9.4 CONCRETE FORMS AND BRACING FOR THE RESTRAINT

Once the restraint is level, it is ready to be anchored in concrete.

1. Build the required concrete forms around the restraint and the pit.
2. Use wood planking to reinforce the inside of the restraint to prevent bending or warping due to the weight of the concrete. If the cylinder assemblies are present, brace around any internal components.
3. Pour and level the concrete surface (the pit floor) to the same height as the restraint, in preparation for the dock leveler installation.
4. Wait until the concrete is fully set before proceeding.
5. When the concrete is set, remove the wood planking from the inside of the restraint.
6. If the cylinder assemblies are present in the restraint, apply grease to the hook trunnion and the tilt trunnion. Otherwise, proceed to “9.5 HOIST CYLINDER ASSEMBLIES (OPTIONAL)” on page 23.

## 9.5 HOIST CYLINDER ASSEMBLIES (OPTIONAL)

If the weldment body was shipped and mounted without the cylinder assemblies inside then a hoist is required to correctly install the hydraulic cylinders.

### DANGER

Follow local regulation requirements for hoisting.

Do not work, stand near, or put any part of your body under any hoisted object, restraint, or dock equipment.

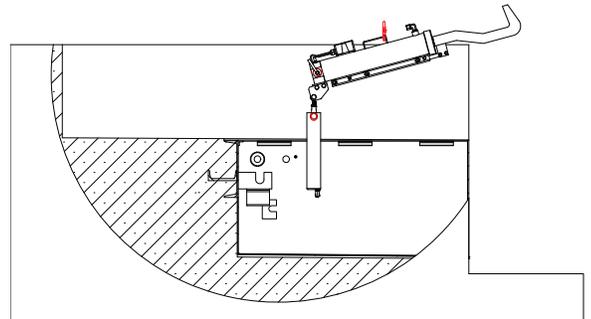
Do not leave any load on the lift while performing these procedures or any service work.

It is recommended that two persons should perform these procedures.

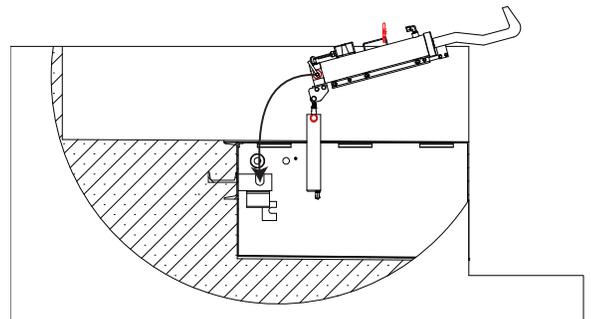
### WARNING

Use caution when lifting or moving the restraint. Do not attempt to lift without suitable hoisting equipment capable of lifting as much as 5000 lb (2268 kg). Do not work beneath a raised object. Follow all hoisting safety requirements.

1. Hoist the RVR303 cylinder assembly (122 lb.) using the lift handle on the hook cylinder and lower inside the assembly into the embedment box.

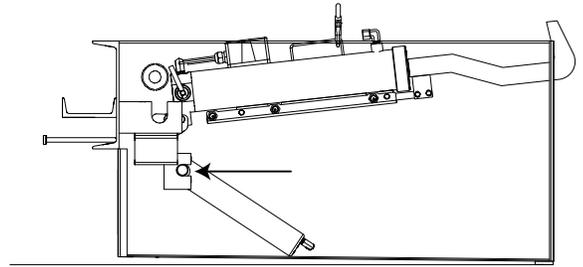


2. Line up the hook cylinder to its trunnion.

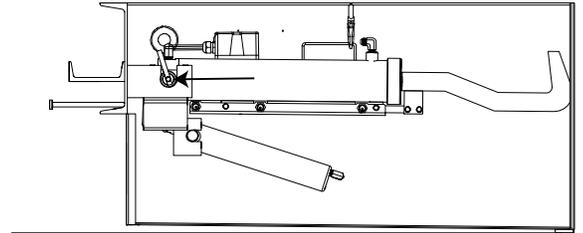


3. Verify that the hook and tilt trunnions have been properly greased.

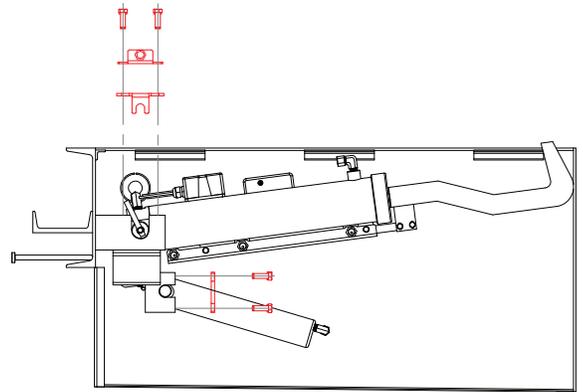
4. Push the tilt cylinder into its trunnion.  
The hook cylinder will not automatically fall into place at this time.



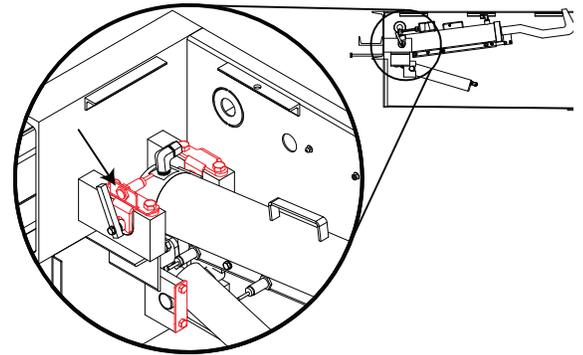
5. Push the hook cylinder assembly back and into its trunnion.  
The tilt cylinder will enter its trunnion shortly before the hook cylinder does.  
As the hook cylinder enters its trunnion, the tilt cylinder will move into its normal operating position.



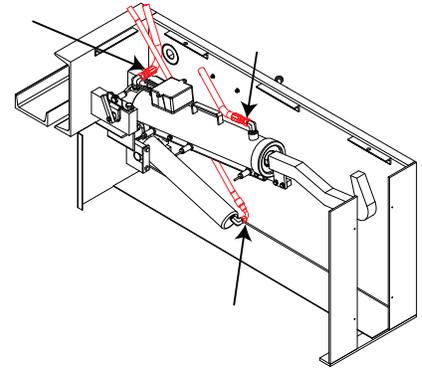
6. Apply Blue LOCTITE® 242 to the necessary bolts then bolt the hook cylinder and tilt cylinder into place on their trunnion carriages



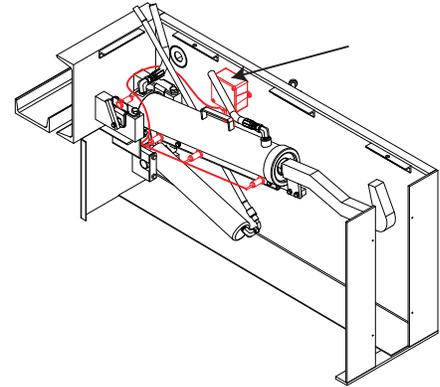
7. Place the sensor bracket on left side to face the wand.



8. Connect the hoses from the cylinders to the RVR303 Powerpack.

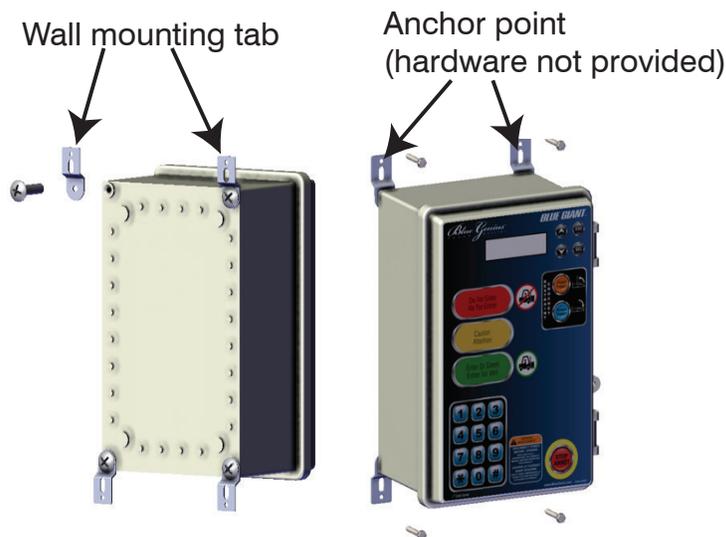


9. Install the J-box on the right-side wall with the pre-installed screws and rubber inserts are provided.



## 10.0 CONTROL STATION INSTALLATION

This section describes the control station installation and wiring procedures.



Verify that the control station power rating is compatible with that of the power supply. All wiring inside the control station must be neatly laid out; avoid crossovers and untidy, excessive wiring patterns. All wiring must be completed in accordance with national and local codes.

1. Run power from the fused disconnect to the control station.
2. Run power from the control station to the motor junction box.
3. Complete the electrical hook-up between components.

If site conditions call for a different wiring installation method, please consult factory before proceeding.

### 10.1 POWERPACK HARDWARE INSTALLATION

This section describes the physical mounting of the powerpack hardware.

1. Mount power pack in its permanent location.
2. Install breather line and hydraulic hose to powerpack.
3. Install oil dip stick in tank and verify oil level.
4. Remove temporary plugs from breather and vent line fittings, located side by side on top surface of reservoir. Breather fitting is 1/2" (12mm) NPT and vent line fitting is 1/4" (6mm) NPT.
5. Locate and remove plastic cap-plug from hydraulic hose connector fitting on the power pack.
6. Position and permanently attach hydraulic hose, reservoir breather, and vent line to power pack.
7. Install clips and ties as required to retain the hose, line, and wire in suitable positions.
8. If electrical wire connections were not made at lift end, trace and locate these wires in the power pack control box and remove them from the terminal block connections.
9. Mark each wire as removed to simplify later attachment.
10. Take the wires removed and attach them to :
11. Have a qualified electrician supply an electrical hook-up to the power control box and check for correct motor rotation.
12. Turn power supply **ON** then push the **UP** button to raise the deck.

**NOTICE**

Use ESD protocol when handling any controls.

Remove the Blue Genius™ control station from its box and install the wall-mounting tabs on the back of the control station. The mounting brackets must be installed to suit site / wall conditions. Do not drill through control station box itself.

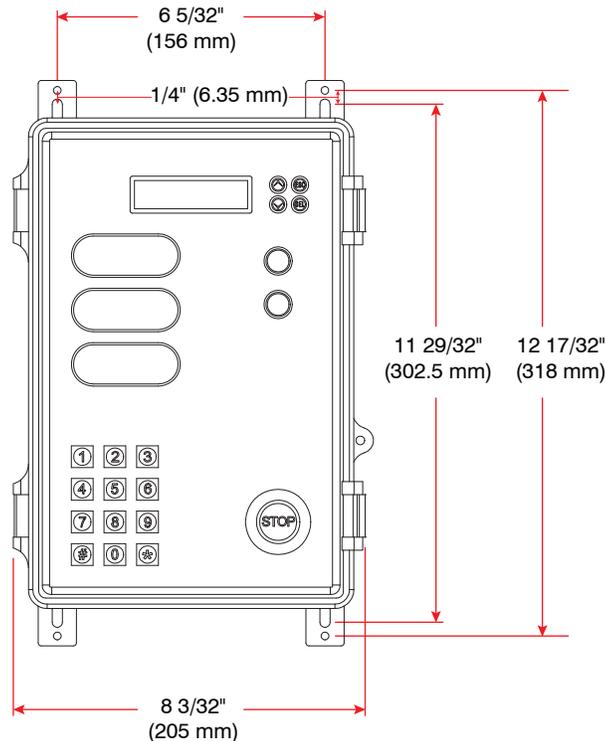
When determining where to position the control station, please ensure that the bottom of the box is accessible, as all conduit entry points must be drilled into the bottom. (Warning: do not drill on top of the box.) The control station must also be mounted at a height (66" (1676 mm) typical top of enclosure) that allows the operator to easily read the LCD display. Mount the control station on a flat surface. If the wall is uneven, shim to suit.

Verify that the control station power rating is compatible with that of the power supply. All wiring inside the control station must be neatly laid out; avoid crossovers and untidy, excessive wiring patterns. All wiring must be completed in accordance with national and local codes.

Use # 12 gauge stranded wired for motor and power leads only. A local disconnect means is required. Entry points at the bottom of the control station shall correspond to (left to right):

- Power
- Motor 1
- Motor 2 (if needed)
- Outside lights / door interlock
- Communication

If site conditions call for a different wiring installation method, please consult factory before proceeding.



## 10.2 ELECTRICAL CONDUIT INSTALLATION



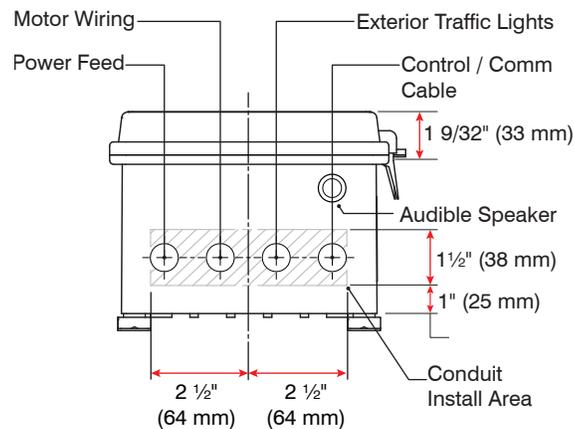
### WARNING

All electrical work must be performed by qualified personnel. Do not loop the communication cable or electrical noise interference may result and create intermittent communication problems. Trim cable(s) to appropriate length during installation.

DO NOT WIRE HIGH AND LOW VOLTAGES IN THE SAME CONDUIT. High voltage range is 115V and up. Lower voltages include the communication wiring and 24 VAC devices.

Prior to installation, place adequate barriers to prevent vehicle traffic from entering the work area, and follow proper lockout / tagout procedures.

1. Run ½" (13 mm)\* conduit from the control station to the traffic lights for the light's power cable.
2. Run ½" (13 mm)\* conduit from the control station to the vehicle restraint's remote motor.
3. Run ½" (13 mm)\* conduit from the control station to the vehicle restraint's remote motor I/O controller.
4. Run ½" (13 mm)\* conduit from the I/O box to the vehicle restraint's IPS sensor.
5. Verify that all fasteners have been tightened and secured.



**NOTE:** Install high power conduit from the bottom of the control panel.

Do not ty-wrap low voltage cable(s) to the outside of high voltage conduit(s). Maintain a minimal 1" (25mm) separation between the two.

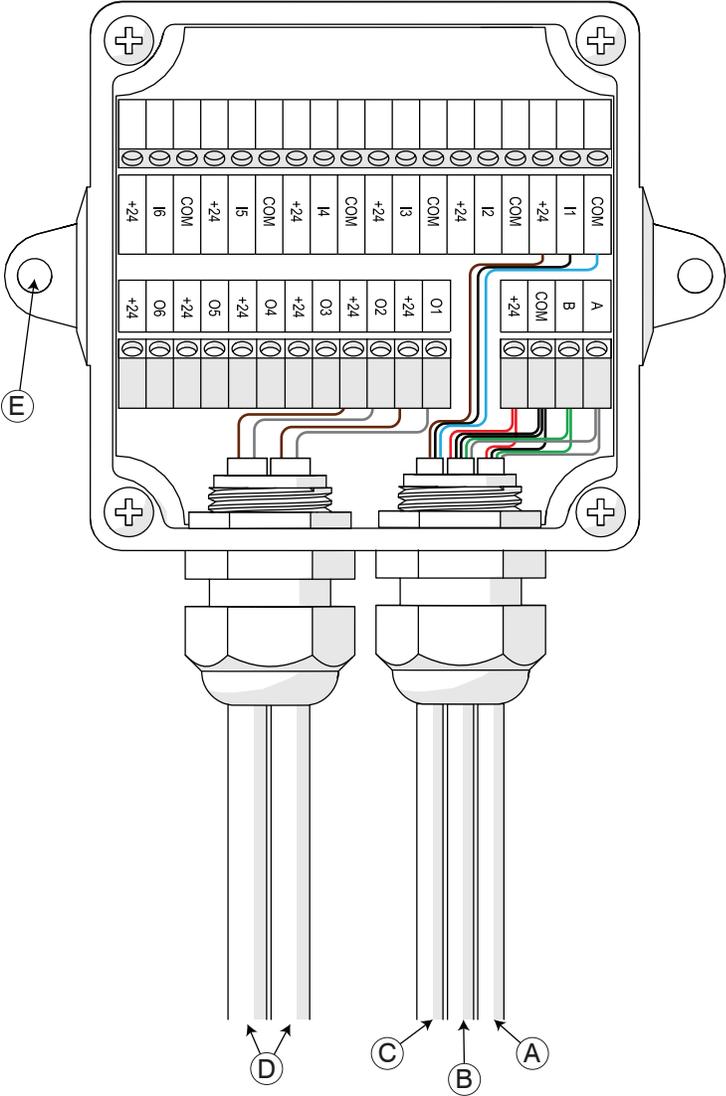
### 10.3 REMOTE I/O JUNCTION INSTALLATION

The remote I/O junction box will be pre-mounted on the powerpack bracket with the following connections already in place:

- Solenoids
- Communication cables (these will need to be run to the Blue Genius™ control station)

The IPS communication wire and the wire for the lip / home sensor will need to be connected.  
See Section “11.2 WIRING DIAGRAMS” on page 38 for proper connections.

Callouts	Description
A	Communication cable to control station
B	Communication cable to vehicle restraint IPS
C	Control cable to lip home sensor
D	to Hydraulic Solenoids
E	Anchor Point



NOTE: Cover removed for clarity.

## 10.4 POWERPACK ELECTRICAL INSTALLATION

This section describes the Powerpack installation. For correct operation, the powerpack motor rotation must be clockwise when viewed from the end opposite of the pump.

### Single phase power supply:

All single phase power supplies are factory-wired for correct rotation at time of installation. To change rotation, see instructions located inside the cover of the electrical junction box on the motor.

### Three phase power supply:

All three phase power supplies must be field-wired correctly at the time of installation and electrical power supply hook-up. To change rotation, interchange any two motor leads.

If the powerpack's location prevents a visual inspection of the motor to determine the direction of rotation,

1. Complete mechanical installation and electrical hook-up as required.
2. Turn power supply **ON**.
3. Observe unit and run power pack motor by operating "**UP**" push button for no more than 5 seconds.
4. If unit begins to raise, rotation is correct.
5. If there is no indication of movement, allow pump to cool for 1 minute minimum before running again.
6. Repeat the 5 seconds **ON** and 1 minute **OFF** cycle no more than 3 times.  
If no movement of unit is evident, change rotation of motor and repeat above steps.  
If there is no unit movement after completing of steps 1 to 6, consult your authorized OHD service representative.

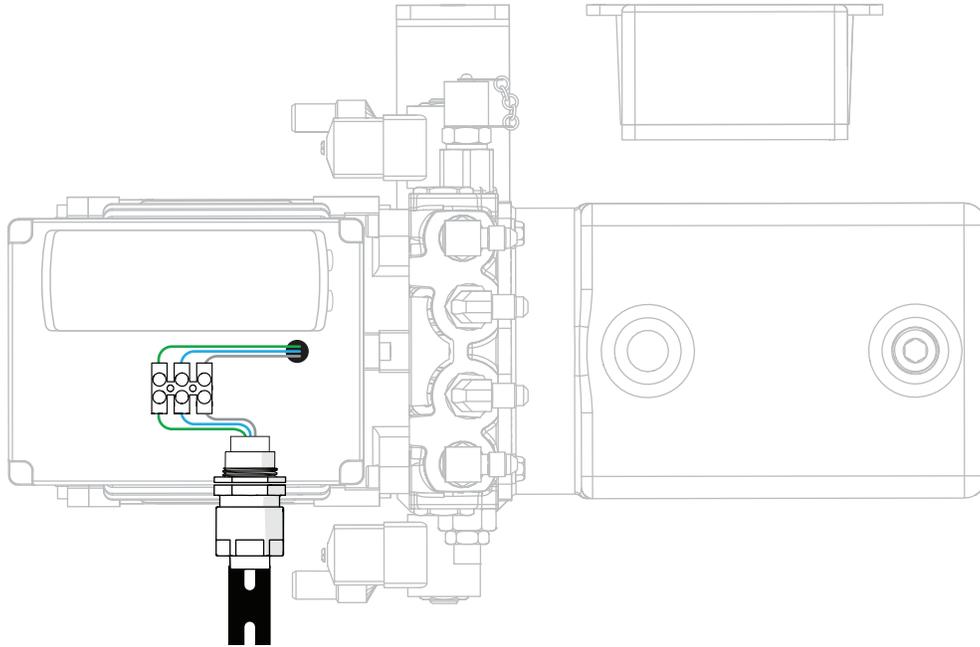
## 10.5 POWERPACK MOTOR WIRING

Both the powerpack wiring and ground connecting must be completed as per local and national codes.

Electrical wiring installation must be completed before running the motor wiring. Refer to Section 8.0 “Electrical Wiring Installation” and complete before proceeding to Step 2.

After connecting the motor, confirm proper rotation via the following steps:

1. Run the powerpack. The vehicle restraint arm should rise; if it fails to rise after five seconds, turn off the power to the motor and change its rotation.
  - To reverse a three phase motor, interchange any two motor leads.
  - To reverse a single phase motor, interchange leads 5 and 8 or 5 and 6 or black and red, depending on the motor manufacturer.



2. When the vehicle restraint arm rises, confirm that it begins to travel upward as soon as the ‘Engage’ button is touched. If there is a delay between the button being touched and the arm rising, air is present in the system and will need to be bled out.

## 10.6 HYDRAULIC AIR BLEEDING

The RVR303 is shipped with hydraulic oil in the pre-installed hoses. Remove the plugs from the hoses only when attaching them to the powerpack.

If appropriate care is exercised, bleeding should not be necessary. But should a situation arise that calls for bleeding the system, please contact Blue Giant Technical Support

## 10.7 OIL TYPES

Blue Giant has the following hydraulic oils available for pick-up purchases only:

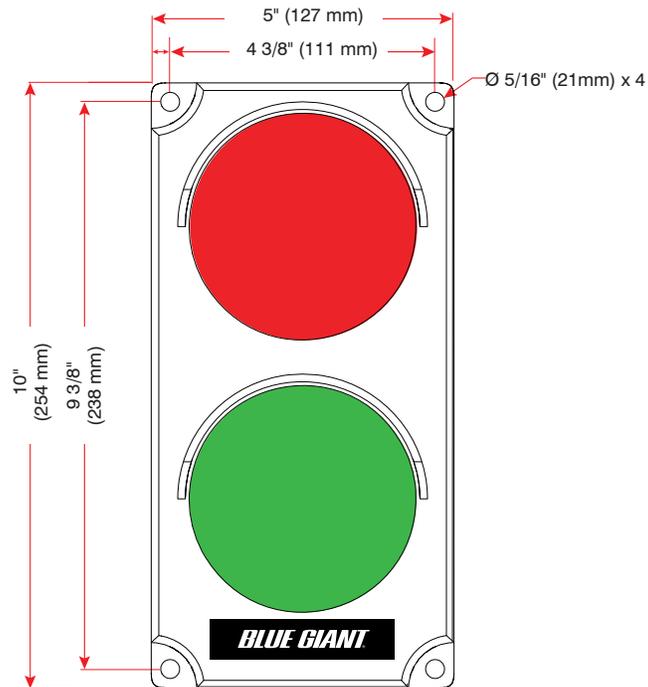
PART NO.	DESCRIPTION
091-031	Standard hydraulic oil
090-624	Hydraulic arctic oil
091-286	Hydraulic biodegradable oil

Transportation laws classify these oils as hazardous material, so they cannot be shipped to customers. If assistance is needed to locate a source of hydraulic oil for Blue Giant dock equipment, contact a local Blue Giant dealer or consult factory.

## 10.8 INSTALLING THE EXTERIOR DRIVER TRAFFIC LIGHT

Mount the exterior traffic light approximately 84" - 96" (2134 mm - 2438 mm) above the driveway surface. Position it to the right of the loading bay entrance, viewed from outside, so incoming truck drivers can easily view it in their rear view side mirror. Ensure that the traffic light is both square and level. Add shims to the back if needed. Do not over-tighten the fasteners.

When drilling the hole for the cable, ensure that the hole is thoroughly deburred (cleaned out) so that accidental damage does not occur when the cable is pulled through during and after installation.



Exterior driver traffic light, part # 032-806.

**NOTE:** Mount to a flat surface. DO NOT deform light housing with irregular wall surface.

### 10.9 INSTALLING THE EXTERIOR DRIVER WARNING SIGN

When installing the driver warning sign below the exterior traffic light, ensure that the sign can be easily viewed and read by incoming drivers.

Because the sign comes without mounting holes, drill a minimum of four holes no less than 3/8" (10 mm) (Detail A) from the sign's edge. Ensure that the holes exceed the size of the anchor device used for expansion reasons (i.e. for a 1/4" anchor use a 5/16 hole. When mounting the sign, do a visual inspection to confirm that it is level and centered beneath the traffic light.

When fastening the sign to the wall, make sure that the sign does not warp or twist as a result of tightening the anchors. (Use shim washer if needed.) Do not over-tighten fastenings, as damage to the sign may occur.



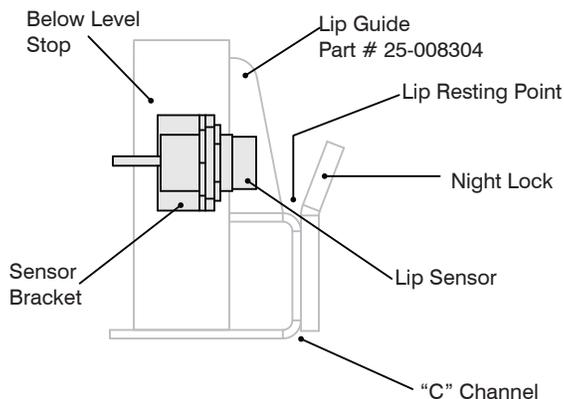
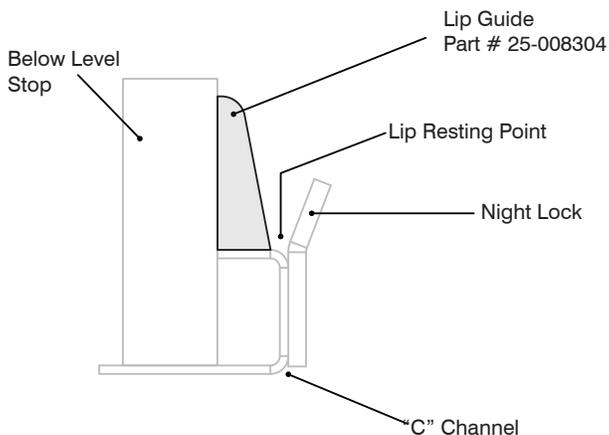
Exterior driver warning sign, part # 038-225 (French 038-225F / Spanish 038-225S).

## 10.10 LIP GUIDE FOR AFTERMARKET (LEGACY) DOCKS

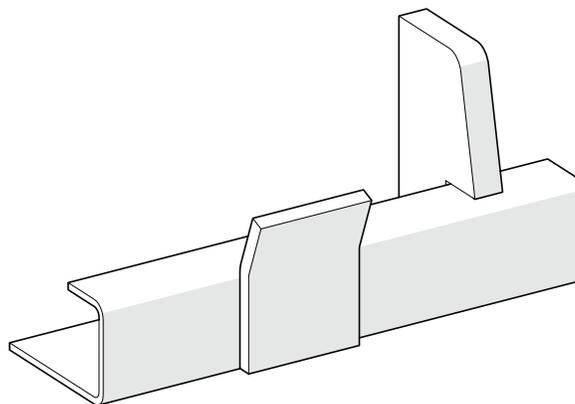
If the dock leveler lip plate does not park correctly, a lip guide gusset (Blue Giant part # 25-008304) must be installed to facilitate proper parking.

The purpose of the guide is to properly position the new lip sensor. This figure illustrates a typical guide placement, which applies to typ. dock models. The guide should be mounted near the new sensor bracket to ensure that the dock interlock sensor's range is not altered or otherwise affected.

To set up the guide, position the lip within the lip resting area so that it is tight against the night locks and resting on the "C" channel. Ensure that the guide is positioned close to the dock interlock sensor.



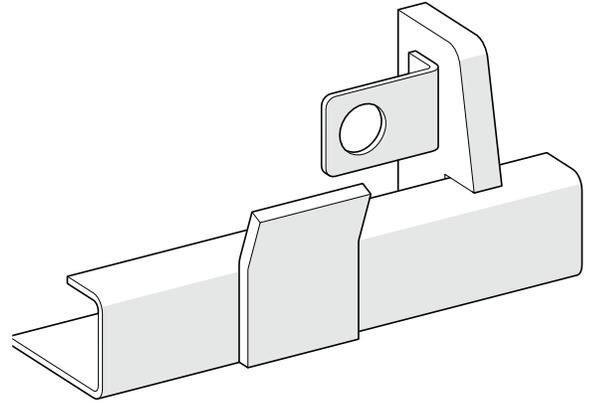
1. Mount the sensor bracket with a "C" clamp.



2. Positioning the bracket, the sensor should be inserted halfway inside the bracket hole. This will allow for easy adjustment of the sensor either closer or further to the back of the lip.
3. With the sensor in place, test the unit. Ensure that there is a minimum clearance of  $\frac{1}{4}$ " (6 mm) between the front face of the sensor and

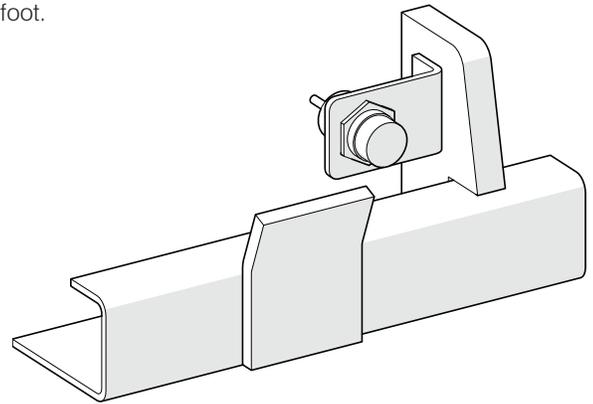
the back of the lip plate.

4. Remove the sensor then weld the sensor bracket to the support.



5. Remove the front holding nut from the proximity sensor and insert the sensor.

6. Verify that the proximity sensor is inserted front first from behind the mounting foot. The wire should be leading into the pit.



7. When the proximity sensor is in place, fasten the front holding nut to the sensor and torque both nuts to 40 ft-lb.
8. Adjust the lip stop to ensure that the lip does not come into contact with the sensor but also rests firmly in the lip keepers. Typically, a .25" (6mm) gap between lip and proximity sensor is required.
9. Clean up the entire work area and apply touch-up paint to all welds, scratches and burns.

## 10.11 SENSOR RANGE ADJUSTMENT

Sensor can be set between ¼" (6 mm) to ½" (13 mm), adjust with nuts.

## 11.0 ELECTRICAL WIRING INSTALLATION

### NOTICE

All wiring must comply with local and national electrical building codes.

Follow the Wiring Diagram provided with the control panel, please leave the original with the control panel. Standalone wiring diagram is provided in Section for reference without being at site with equipment. Use illustration for typical clean layout purposes only. Wire colors are for clarity only.

General notes to electrician / installer:

1. Run communication wire in separate raceways back to the Blue Genius™ control station, following the control station installation guidelines.
2. Communication lines not routed in the raceways must never be tie-wrapped to high-voltage conduits. A minimum separation of 1" (25 mm) is required (if this procedure is not followed, there can be intermittent communication related issues).
3. Mount the outside junction box at a high enough level to prevent flood water from entering the box. Ensure that the location protects the box from mechanical damage. Refer to Section 7.9 Restraint Motor J-Box Installation.
4. The communication wire between the remote I/O and the Blue Genius™ control station is not to be looped. Use enough cable to meet anticipated requirements and cut length as needed.
5. Ensure that the drain wire is connected to Terminal #3 inside the Blue Genius™ control station, in addition to the black wire from the remote I/O Terminal #3.

**NOTE:** The drain wire is connected in the Blue Genius™ control station and cut off inside the remote I/O box.

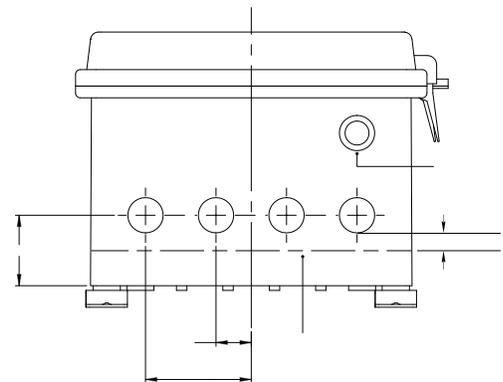
6. Ensure that all wires in screw-down terminal connections are inserted and tightened in place. If stranded wire is used, ensure that no loose strands remain.

**NOTE:** Note that MC for Motor 1 and MC for Motor 2 are internally connected.

7. Wiring should be neatly performed: excessive and untidy arrangements can cause noise interference.
8. The configuration (viewed from left to right on the bottom of the Blue Genius™ control station) must be:
  - Power Feed
  - Motor Wiring
  - Exterior Traffic Lights
  - Control/ Communication Cable

**DO NOT** deviate from this order.

9. When drilling holes in the bottom of the Blue Genius™ control station box,
10. Verify that the outside edge of each hole is at least 1/2" (13 mm) from the power board.



**NOTE:** Holes shown in Figure 5 are drilled at 7/8" for 1/2" trade size conduit. If larger conduit are needed, the minimal 1/2" clearance must be maintained between the hole's bottom to the control board inside the Blue Genius™ box.

11. Mount the remote I/O j-box below and to the right of the Blue Genius™ control station as to not interfere with conduits running from below. Refer to section 7.8 Remote I/O J-Box Installation.
12. Run the 3 motor leads from the j-box to the proper termination point inside the Blue Genius™ control station using care in routing wires within the box. Run the ground wire to its proper termination point, also making sure the wiring is neat and tidy.
13. Run the 7 wire cable from the same conduit as in Step 12 into the Blue Genius™ control station, then back out to the remote I/O j-box and terminated wires to the proper terminals.
14. Run the communication cable from the remote I/O j-box, terminal 1, 2, 3, and 4 to the terminals 1, 2, 3, and 4 of the Blue Genius™

control strip making sure only the drain wire is connected to terminal 3 of the Blue Genius™ strip and is not connected inside the remote I/O box (cut drain wire at cable sheath and tape close). Keep this cable to the right hand side of the Blue Genius™ control station and make sure there is no loops left inside the Blue Genius™ control station.

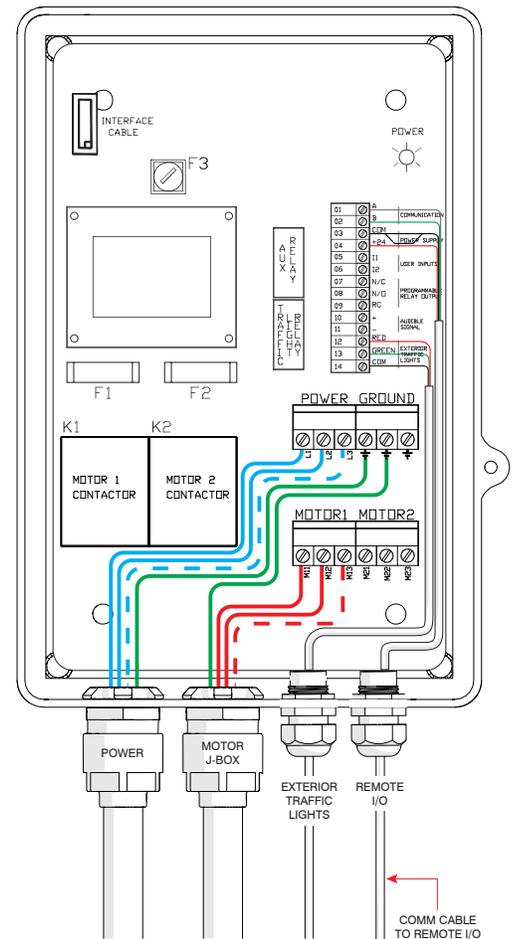
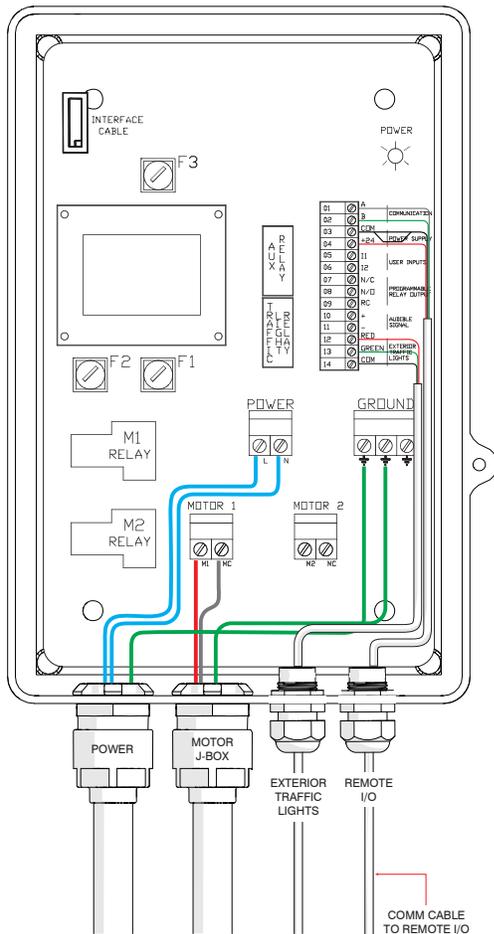
15. Run the cable for the exterior traffic lights to terminals 12, 13 and 14 making sure the black (COM) wire is connected to terminal 14, terminal 12 for the red light, and terminal 13 for the green light.
16. If any optional equipment is added (such as overhead door interlock), ensure that all 24VDC devices are entering the Blue Genius™ control station on the right-hand side. To prevent noise interference, keep low voltage away from high voltage within the Blue Genius™ control station.

## 11.1 BLUE GENIUS™ CONTROL STATION WIRING LAYOUT

### NOTICE

Follow the Wiring Diagram provided with the control panel, please leave the original with the control panel. Standalone wiring diagram is provided in Section for reference without being at site with equipment. Use illustration for typical clean layout purposes only.

**NOTE:** Audible not shown connected for clarity purposes.



Blue Genius™ control station wiring layout for 115V single phase only.

Blue Genius™ control station wiring layout for 208-600V single and three phase. (dotted line) Not used for 208-600V single phase.

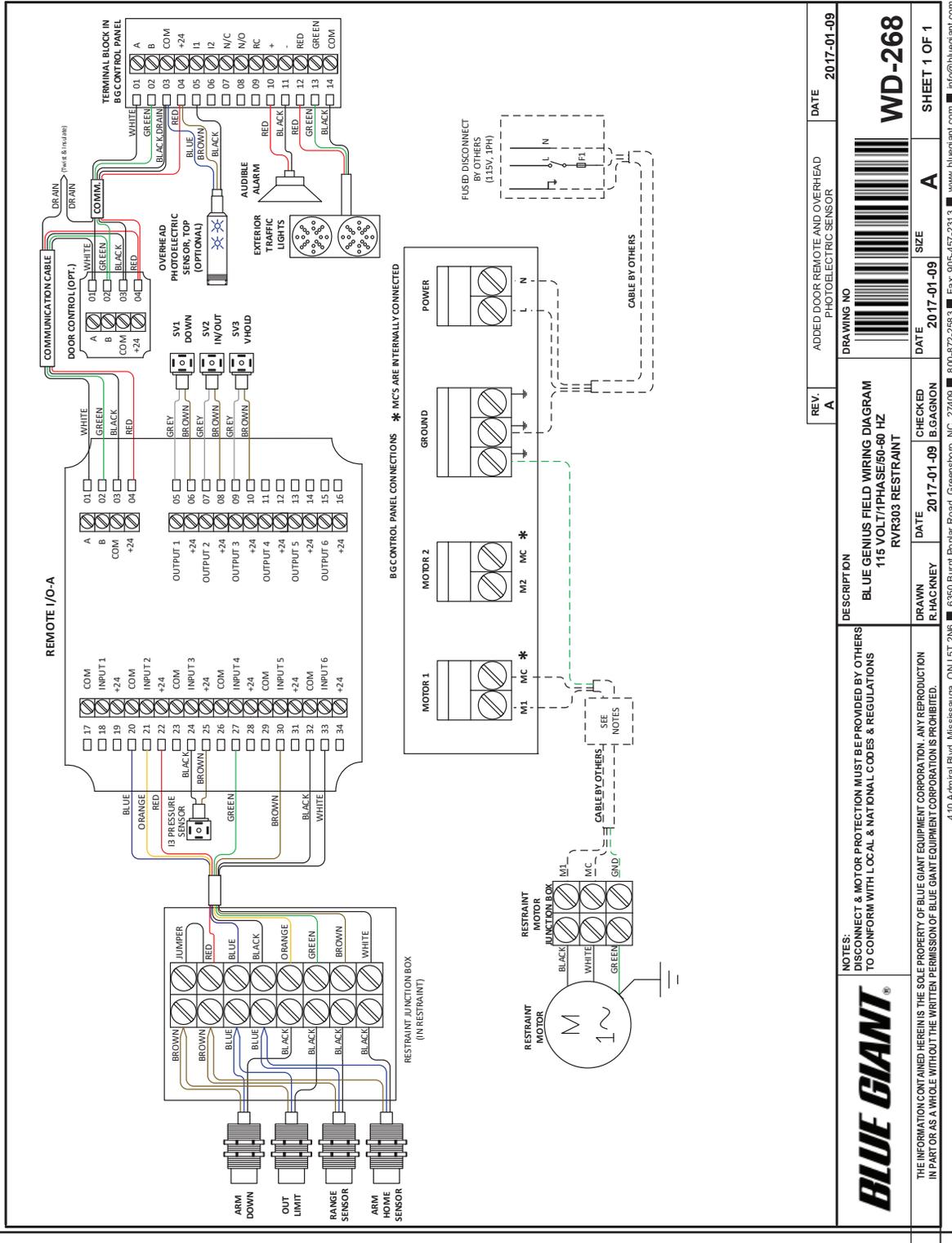
## 11.2 WIRING DIAGRAMS

### NOTICE

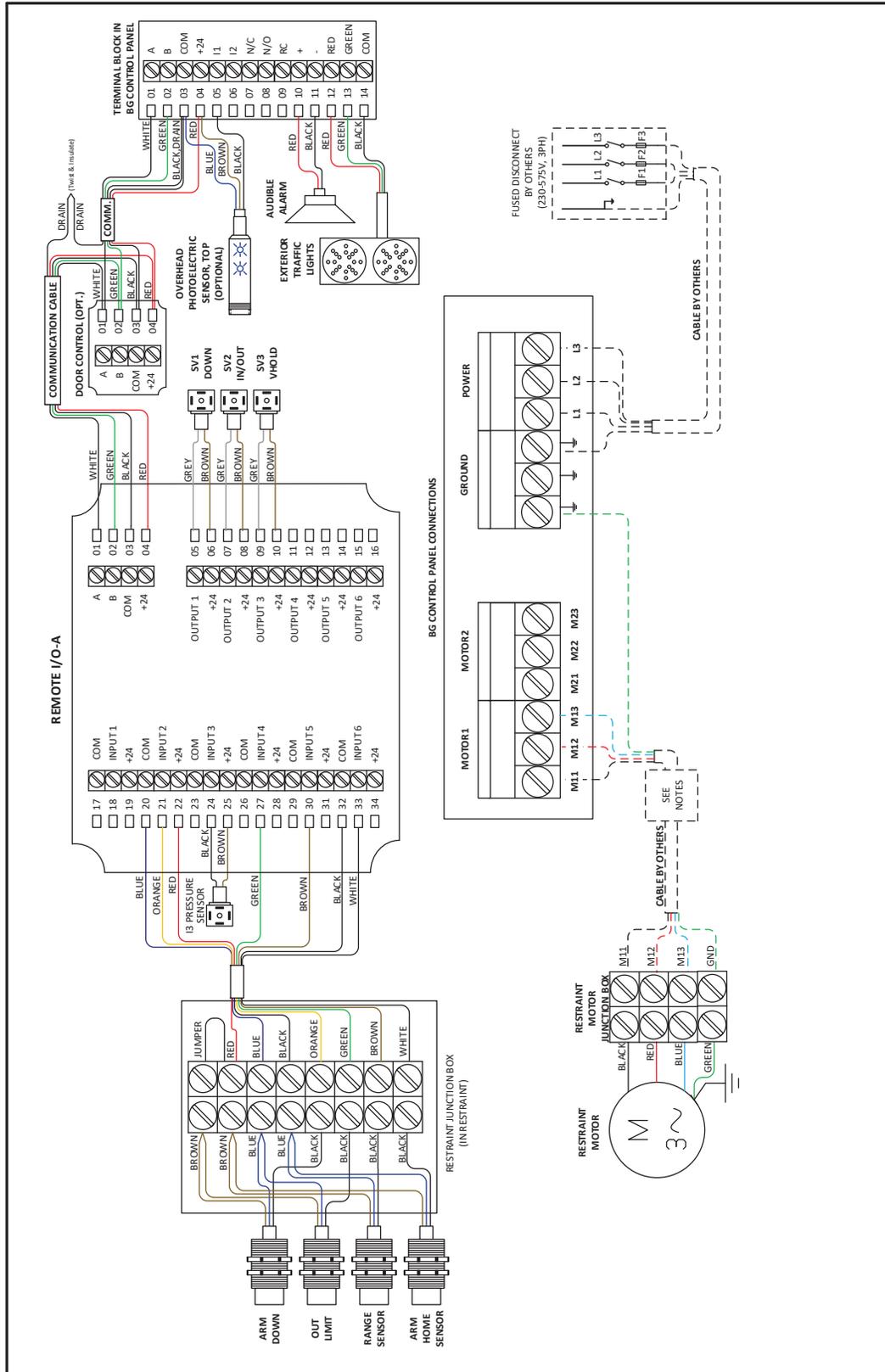
The following wiring diagrams are sample configurations only. Wiring diagrams specific to your needs will be provided inside the control panel and/or as part of your submittal package.

## 11.3 BLUE GENIUS CONTROL STATION WIRING LAYOUT

## 11.4 WIRING DIAGRAM—115V SINGLE PHASE



# 11.5 WIRING DIAGRAM—208-575V THREE PHASE



REV. A	ADDED DOOR REMOTE AND OVERHEAD PHOTOELECTRIC SENSOR	DATE 2017-01-09
DESCRIPTION BLUE GENIUS FIELD WIRING DIAGRAM 208-230/400/460/575 VOLT/3PHASE/50-60 HZ RVR303 RESTRAINT		
DRAWN R. HACKNEY	DATE 2017-01-09	CHECKED B. GAGNON
NOTES: DISCONNECT & MOTOR PROTECTION MUST BE PROVIDED BY OTHERS TO CONFORM WITH LOCAL & NATIONAL CODES & REGULATIONS THE INFORMATION CONTAINED HEREIN IS THE SOLE PROPERTY OF BLUE GIANT EQUIPMENT CORPORATION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BLUE GIANT EQUIPMENT CORPORATION IS PROHIBITED.		DRAWING NO WD-267
BLUE GIANT®		SHEET 1 OF 1

410 Admiral Blvd, Missisquoi, ON L5T 2N6 ■ 6350 Burnt Poplar Road, Greensboro, NC, 27409 ■ 800-872-2883 ■ Fax: 905-457-2313 ■ www.bluegiant.com ■ info@bluegiant.com

## 12.0 PRE-COMMISSIONING INSPECTION CHECKLIST

Before using the restraint, complete the pre-commissioning inspection checklist.

 **DANGER**

When repairing or conducting maintenance procedures on electrical components, perform lockout / tagout steps according to OSHA regulations and approved electrical codes.  
 Prior to installation, place adequate barriers to prevent unauthorized personnel and vehicle traffic from entering the work area.

 **WARNING**

All repairs and maintenance work are to be conducted by trained and authorized personnel ONLY.

**INSPECTED BY:** \_\_\_\_\_ **DATE:** \_\_\_\_\_  
**SERIAL #:** \_\_\_\_\_ **DOOR #:** \_\_\_\_\_

Forward this checklist to the person responsible for dock equipment maintenance.

INSTRUCTIONS FOR USE: Indicate "OK for USE" with a check mark ✓ in the appropriate box of each inspection point.

<b>BEFORE POWERING ON THE UNIT:</b>	<b>AFTER POWERING ON THE UNIT</b>
<input type="checkbox"/> Is the restraint sitting level in all four corners?	<input type="checkbox"/> Does the restraint hesitate during the operation?
<input type="checkbox"/> Are all welds cleaned and painted?	<input type="checkbox"/> Have all tools and debris been cleared from the pit?
<input type="checkbox"/> Was the junction box under the unit properly wired and closed?	<input type="checkbox"/> Is there any sign of an oil leak?
<input type="checkbox"/> Was the hydraulic hose connected and routed properly?	<input type="checkbox"/> Is the breather hose attached to the top of each cylinder?
<input type="checkbox"/> Is the powerpack electrically connected to the nameplate voltage?	<input type="checkbox"/> Is the breather hose from the powerpack present and installed correctly?
<input type="checkbox"/> Is the wiring diagram inside the control panel?	<input type="checkbox"/> Are the cylinders in their mounts properly?
<input type="checkbox"/> Is the control panel wiring positioned away from sources of physical damage?	<input type="checkbox"/> Are hydraulic hoses routed and tightened so no damage will occur when unit is raised and lowered?
<input type="checkbox"/> Are all safety decals in place?	<input type="checkbox"/> Are shims welded properly in place?
<input type="checkbox"/> Are the Owner's Manual and Operation Placard located near the control panel?	<input type="checkbox"/> Is there any weld spatter or debris preventing the roller from running smoothly? (Verify upper and lower roller locations)
	<input type="checkbox"/> Are the bolts securing the base frame in place tightened?
	<input type="checkbox"/> If equipped, are safety trip bars functional and installed correctly?
	<input type="checkbox"/> If equipped, are lip assist springs in good working order?

**Explain faults briefly in the space provided below:**

**PHOTOCOPY OR SCAN TO STORAGE THIS CHECKLIST AND FILL OUT REGULARLY FOR YOUR RECORDS.**

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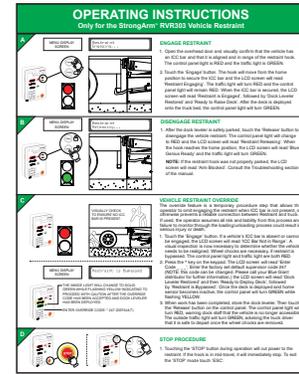
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## 12.1 COMMISSIONING AND START-UP PROCEDURES

This procedure describes the process to pre-check the hardware before operating for the first time.

**NOTE:** The following procedure assumes the powerpack motor is running the correct direction. If rotation needs to be reversed, either interchange any two motor leads (three phase power units only) or consult motor rotation tag (single phase power units).

1. Consult the Pre-Commissioning Inspection Checklist. See “12.0 PRE-COMMISSIONING INSPECTION CHECKLIST” on page 40 for inspection criteria.
2. Check that all electrical conduits, hoses, and wires are mechanically protected against damage and are adequately secured.
3. Return all wiring diagrams to the inside of the control box.
4. Mount RVR303 Operation/Warning Placard Operation Placard and any dock leveler/other components (part # dependent on model) next to the Controls, within the operator’s line of vision.



5. Clean up the entire work area and apply touch-up paint to all welds, scratches and burns.
6. Verify that no debris or personnel are in the operating path of the lift.
7. Verify that the restraint arm is completely lowered and no obstructions must be present, such as a parked trailer.
8. Check the restraint for proper and safe operation.
9. Test-operate the unit through several full cycles of operation. Refer to the Owner’s Manual (part # dependent on model). If problems are noted, see “13.0 TROUBLESHOOTING” on page 43.
10. Store this Installation Manual in a secure place for easy access. Verify that the Owner’s Manual is given to the appropriate person.

## 12.2 BLUE GENIUS™ V2 MENU ACCESS

This procedure outlines how to access Blue Genius™ V2 software programming menu.

1. Turn the Blue Genius™ on and wait for the self-testing sequence to finish.
2. When “Ready” appears on the LCD, tap and hold STOP until the LCD indicates “SYSTEM STOPPED ESC to Continue”.
3. Tap and hold the SEL button for 7-10 seconds then “ENTER SYSTEM Code\_\_\_\_\_” appears on the LCD.
4. Enter the installer code using the keypad. If the installer code is not known, contact Blue Giant Technical Support at 1.800.668.7078. The LCD will show a \* each time a number is tapped. If a wrong number is entered, re-enter the full SYSTEM Code from the beginning as there is no backspace key. If successful, the LCD indicates “System Menu 1 Diagnostics”.

## 12.3 BLUE GENIUS™ V2 LEARN PROCEDURE

When the RVR303 vehicle restraint is being installed for the first time or an Intelligent Positioning System (IPS) part is changed, the “Learn Procedure” must be performed.

1. Verify that the RVR303 is fully operational prior to the procedure without any fault or error messages appearing on the LCD.
2. Verify that there is no ICC bar or obstruction in the path of the arm.
3. Complete the previous procedure and at the “Diagnostics” screen tap the DOWN arrow button until the RVR Learn option appears.
4. Tap the SEL button then the LCD message displays “Press \* to Engage”
5. Tap or press the \* key. The restraint arm will travel upward until it touches the wall or if the cylinder is fully stroked (if no wall is present) then the arm will return briefly to the 90 degree position before traveling back to the wall. Then it will descend to the home position.
6. If the procedure has been successful, the LCD will briefly relay the maximum and lock positions then “RVR Learning... Done”. The settings will be automatically saved. The control returns to normal running mode then the vehicle restraint is ready for use.

## 12.4 BLUE GENIUS™ V2 TESTING

Follow this procedure to test the programming of the restraint.

1. Tap the ENGAGE button.  
The restraint arm will rise, as it searches for an ICC bar, then it will resume the home position.  
The LCD screen will alternate between displaying “No ICC Bar Not IN Range” and “Blue Genius Ready”
2. Place a bar or similar object in the restraint arm’s upward travel path to simulate an ICC bar.
3. Tap the ENGAGE button.  
The restraint arm will rise until coming in contact with the object then the PosiLock mechanical locking system engages the object.  
Afterwards, the arm will return to the 90 degree position then the LCD messages will follow this order: “Restraint is Engaged”, “Dock Leveler Restored”, and then “Ready to Raise Deck”.

If an error message appears, refer to sections “Vehicle Restraint Troubleshooting” and “Blue Genius™ LCD Messages”.

## 12.5 POWERPACK OIL TYPES

Blue Giant has the following hydraulic oils available:

PART NO.	DESCRIPTION
091-031	Standard hydraulic oil, MV22
090-624	Hydraulic arctic oil, MV15
091-286	Hydraulic biodegradable oil, BIO 40

### NOTICE

Use of other oil products may damage equipment

Transportation laws classify these oils as hazardous material, so they cannot be shipped to customers. Pick-up purchases only.

If assistance is needed to locate a source of hydraulic oil for Blue Giant dock equipment, contact a local Blue Giant dealer.

## 13.0 TROUBLESHOOTING

Use this section to help diagnose issues if the restraint is not operating as specified.



### WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the Installation process. Contact your local dealer or distributor for assistance.

Following description of operating principles is intended as a guide when trouble shooting and making adjustments or repairs. If no fault can be found and equipment fails to operate properly, Contact your local dealer or distributor for assistance.

## 13.1 VEHICLE RESTRAINT TROUBLESHOOTING

Isolate vehicle restraint issues based on these indicators.

PROBLEM	PROBLEM CAUSED
The restraint arm will not rise when the ENGAGE button is touched.	Faulty wiring, connection or broken wire. Refer to electrical wiring diagram. Power source problem. Check incoming voltage and compare to data nameplate voltage. Restraint apparatus is seized. Check for foreign objects such as broken wooden pallet splitters. The controls are in bypass mode. Press RELEASE button and then ENGAGE button. Restraint option not chosen in menu.
The restraint arm will not lower when the RELEASE button is touched.	Faulty wiring or connections. Refer to electrical wiring diagram. Arm was improperly engaged. Restraint apparatus is blocked from coming down. Check for foreign objects. Trailer load on arm causing pressure on lock release. Back up trailer. The dock leveler deck is not restored to the home position properly.
Restraint is engaged but the inside light is still red.	Dock leveler not deployed. Restraint interlock sensor still sees lip.
Restraint works but LED cover lights are not lit. LCD display is working.	Power source for lights is damaged. Replace control board.
Outside traffic lights are dim, displaying incorrectly (wrong color) or malfunctioning (only one light works).	Check wiring to lights. Ensure that the +24 red outside light is connected to terminal # 12 on the control terminal strip label 1 to 14 and that the +24 green light is connected to terminal #13 and the common of the lights are connected to terminal #14. Lights common wire is terminated in wrong terminal (other than #14).
The restraint is in the parked position and the inside light is green with yellow light flashing.	The restraint is in the bypass mode and the restraint interlock sensor is not active.
The restraint is powered on. LCD screen displays the message 'Restraint is Bypassed'. The control panel lights are green and flashing yellow while the outside traffic light is red.	The dock leveler is either not parked or the home sensor does not detect it as being in the parked position.

## 13.2 BLUE GENIUS™ LCD MESSAGES

Isolate BLUE GENIUS™ issues based on these indicators.

PROBLEM	PROBLEM CAUSED
'Fault 31' IPS sensor value too low	IPS shaft not secured by set screw, tighten set screw making sure the IPS green LED light is lit with the restraint arm in its lowered position. <b>NOTE:</b> the set screw does not tighten down on the flat of the IPS shaft. IPS not programmed. See set-up procedure.
During self test mode the following message appear: 'Remote I/O Bad' 'Positioner Bad'	Faulty wiring, communication cable not connected or damaged. Communication chip(s) faulty.
'Please restore Dock Leveler'	Restraint interlock sensor is in-active, out of range. Restraint interlock sensor not connected. Faulty wiring. Dock not in stored/home position.
'ICC Bar not in Range'	Restraint arm went up and did not find ICC bar in preset range. IPS not programmed.
'Fault #10' Communication error	Faulty wiring, check for loose or broken communication cable wire(s). Noise interference, check routing of communication from Blue Genius™ controls to remote devices.

PROBLEM	PROBLEM CAUSED
<p><b>'Restraint Arm Blocked'</b>                      Followed by:  <b>'Restore Restraint, press 'SEL' to continue, Blue Genius™ Warning'</b>                      (repeats)</p>	<p>Restraint arm failed to lower all the way down. Check for debris.                      Faulty IPS board.</p>
<p><b>'Restraint is Engaged'</b> followed by: <b>'Dock Leveler Restored'</b>, <b>'Ready to Deploy Deck'</b>. (repeats)</p>	<p>The Engaged button has been touched and vehicle restraint is in locked position.</p>
<p>During self test mode the following message appears: <b>'Remote I/O Bad'</b></p>	<p>Faulty wiring, check communication cable wires for loose connections.                      Remote I/O is faulty, replace.                      Blue Genius™ power board is faulty, replace.</p>
<p>During self test mode the following message appears: <b>'Positioner Bad'</b></p>	<p>Faulty wiring, check communication cable wires for loose connections.                      IPS board is faulty, replace.                      Blue Genius™ power board is faulty, replace.</p>







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