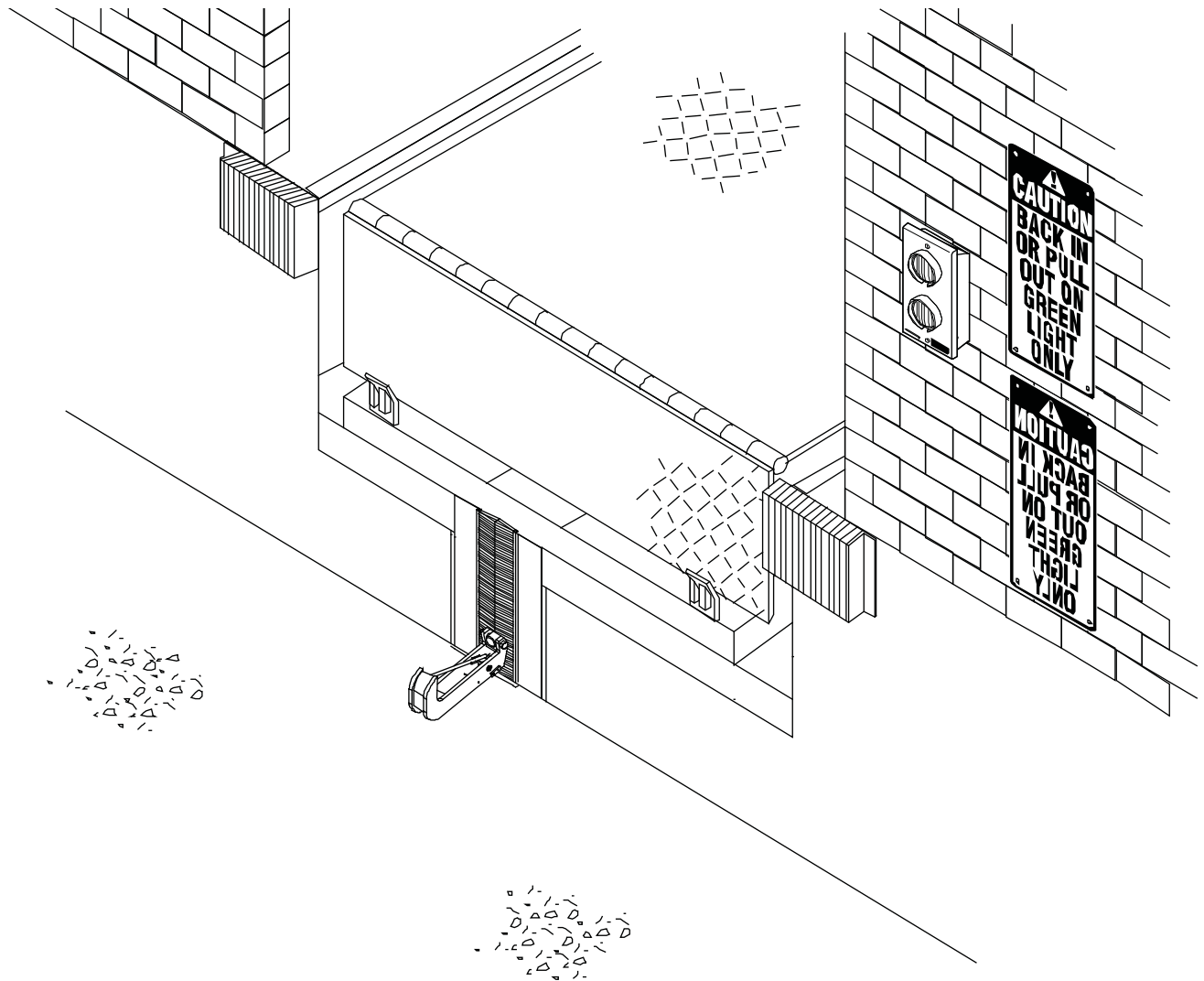


# VBR-500 Dok-Lok®

## Vehicle Restraint Owners Manual



**RITE-HITE®**  
ALWAYS LOOKING AHEAD



**This Manual Covers Restraints Built After Serial Numbers:**  
VB5001000 and up



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## PRODUCT SPECIFIC WARRANTY

RITE-HITE® warrants the VBR-500 DOK-LOK vehicle restraint for two-years parts and labor from date of shipment in accordance with Rite-Hite's Standard Warranty Policy.

## INTRODUCTION

Read and understand this manual before attempting to install or operate any DOK-LOK vehicle restraint. For best results, have this product serviced by your authorized RITE-HITE® representative. The VBR-500 DOK-LOK vehicle restraint by RITE-HITE® is intended to provide a safer workplace for workers in shipping and receiving dock areas. The VBR-500 DOK-LOK vehicle restraint is a hydraulic restraint device that, when properly installed and operated, retains a secure connection between the truck and dock. Signal lights and signs provide instructions to the truck driver and DOK-LOK vehicle restraint operator that a safe condition exists. The DOK-LOK vehicle restraint is operated by pressing push buttons on an inside control panel.

## NOTICE TO USER

Your local Rite-Hite® representative provides a Planned Maintenance Program (P.M.P.) which can be fitted to your specific operation. Call your local representative or Rite-Hite® at 414-355-2600.

The Rite-Hite products in this manual are covered by one or more of the following U.S. patents: 5,546,623; 5,553,987; 5,582,498; 5,664,930; 5,702,223; 5,762,459 (RE: 37,570); 5,882,167; 6,065,172; 6,070,283; 6,085,375; 6,089,544; 6,092,970; 6,106,212; 6,116,839; 6,190,109; 6,276,016; 6,311,352; 6,318,947; 6,322,310; 6,360,394; 6,368,043; 6,431,819; 6,488,464; 6,499,169; 6,505,713; 6,520,472; 6,524,053; 6,634,049; 6,726,432; 6,773,221; 6,832,403; 6,880,301; 7,032,267; 7,062,814; 7,134,159; 7,213,285; 7,216,391; 7,363,670; 7,380,305; 7,503,089; 7,533,431; 7,546,655; 7,584,517; 7,681,271; 7,823,239; 7,841,823; 7,877,831; 7,914,042; 8,006,811; 8,065,770; 8,141,189; 8,191,194; 8,286,757; 8,287,223; 8,303,235; 8,307,956; 8,443,474; 8,464,384; 8,464,846; 8,465,245 and pending U.S and foreign patent applications. RITE-HITE®, THINMAN™, SAFE-T-LIP®, HYDRACHEK®, WHEEL-LOK™, DOK-LOK®, DUAL-DOK®, SAFE-T-STRUT™, DOK-COMMANDER®, JUMBO™, HYDRA-RITE™, SAFE-T-GATE®, RITE-VU™ LIGHT COMMUNICATION SYSTEM and SMOOTH TRANSITION DOK SYSTEM™, are trademarks of Rite-Hite®.

## SAFETY WARNINGS

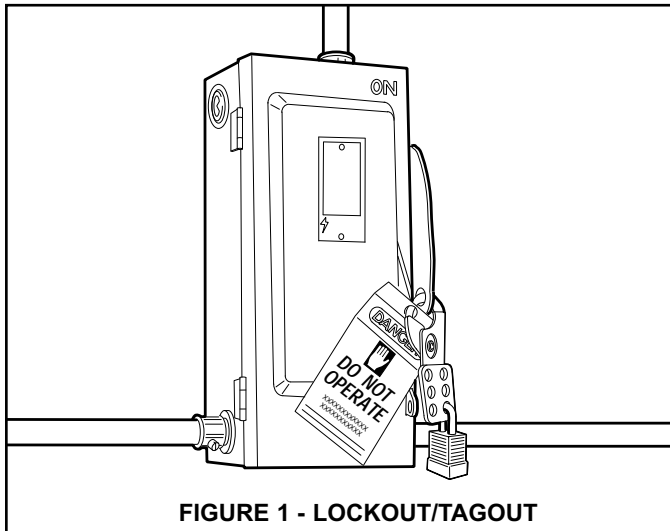


FIGURE 1 - LOCKOUT/TAGOUT

### WARNING

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

### LOCKOUT/TAGOUT PROCEDURES

The Occupational Safety and Health Administration requires that, in addition to posting safety warnings and barricading the work area, the power supply has been locked in the OFF position or disconnected. It is mandatory that an approved lockout device is utilized. An example of a lockout device is illustrated. The proper lockout procedure requires that the person responsible for the repairs is the only person who has the ability to remove the lockout device.

In addition to the lockout device, it is also a requirement to tag the power control in a manner that will clearly note that repairs are under way and state who is responsible for the lockout condition. Tagout devices have to be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or become unreadable.

RITE-HITE® Corporation does not recommend any particular lockout device, but recommends the utilization of an OSHA approved device (refer to OSHA regulation 1910.147). RITE-HITE® Corporation also recommends the review and implementation of an entire safety program for the Control of Hazardous Energy (Lockout/Tagout). These regulations are available through OSHA publication 3120.

### DANGER

This is the highest level statement. Failure to follow the listed instructions will most likely result in severe injury or death.

### CAUTION

The statements used with this level of warning deal with a safe operating procedure. If the procedure is ignored, the possibility of personal injury may exist.

### WARNING

This is a statement of serious hazard. Failure to follow the listed instructions could place the individual at risk of serious injury or death.

### IMPORTANT

IMPORTANT is used to draw attention to a procedure that needs to be followed to prevent machine or property damage.

## OWNER RESPONSIBILITY

1. The owner should recognize the inherent danger of the interface between dock and transport vehicle. The owner should, therefore, train and instruct operators in the safe use of dock equipment in accordance with the information provided below. The manufacturer shall publish, provide to the initial purchaser, and make the following information readily available to owners:
  - Installation instructions
  - Recommended initial and periodic inspections procedures
  - Maintenance procedures
  - Operating instructions
  - Descriptions or specifications for replaceable or repairable parts
  - Tables identifying the grade (slope) for all variations of length or configuration of the dock equipment, and
  - Information identifying the maximum uncontrolled drop encountered upon sudden removal of support while within the working range of the equipment.

It shall be the responsibility of the owner to verify that the material listed in this section has been received and that it is made available for the instruction and training of personnel entrusted with the use or maintenance of the dock equipment.
2. When a transport vehicle is parked at a loading dock, it is important that the vehicle is relatively perpendicular to the dock face and in close contact with at least one of the dock bumpers.
3. Nameplates, cautions, instructions, and posted warnings shall not be obscured from the view of operating or maintenance personnel for whom such warnings are intended.
4. Manufacturer's recommended periodic maintenance and inspection procedures in effect at date of shipment shall be followed, and written records of the performance of these procedures should be kept.
5. As with any piece of machinery, dock equipment requires routine maintenance, lubrication, and adjustments. Your local RITE-HITE® representative offers owners the option of a Planned Maintenance Program (P.M.P.). As part of this service, your local RITE-HITE® representative will do all routine maintenance, lubrication, and adjustments.
6. Dock equipment that is structurally damaged shall be removed from service, inspected by a manufacturer's authorized representative, and repaired as needed before being placed back in service.
7. The manufacturer shall make available replacement nameplates, caution/instruction labels, and operating/maintenance manuals upon request of the owner. The owner shall see that all nameplates, caution/instruction markings or labels are in place and legible, and that the appropriate operating/maintenance manuals are provided to users.
8. Modifications or alterations of dock equipment shall be made only with written permission of the original manufacturer. These changes shall also satisfy all safety recommendations of the original equipment manufacturer for the particular application of the dock equipment.
9. In order to be entitled to the benefits of the standard product warranty, the dock equipment must have been properly installed, maintained and operated within its rated capacities and/or specific design parameters, and not otherwise abused.
10. It is recommended that trailers equipped with air ride suspensions should remove the air from the suspension to minimize trailer bed drop, prior to loading or unloading.
11. When industrial trucks are driven on and off transport vehicles during the loading and unloading operation, the brakes on the transport vehicle shall be applied and wheel chocks or a positive restraining device shall be engaged.
12. In selecting dock equipment, it is important to consider not only present requirements but also future plans or adverse environments.

## DEFINITION AND FUNCTION

The VBR-500 DOK-LOK vehicle restraint is a hydraulic, pit stored restraint device used to secure trucks and semi-trailers with an intact Rear Impact Guard (R.I.G.) to the face of a loading dock. This is achieved by securing the R.I.G. with a steel barrier. This prevents forward movement of the truck/trailer that may create an unsafe void between the face of the dock and the rear end of the truck/trailer as a forklift travels from the loading dock onto the trailer; or to create an obstruction noticeable to the truck driver, should the driver accidentally try to pull the truck/trailer away while it is being serviced.

The proper or improper activation of the barrier is monitored by:

- **VISUAL CONTROL**

- One set of flashing green or red lights located at the inside of the building for the forklift operator, and one set located outside of the building for the truck driver. In addition to the lights, there are three instruction signs.

- **AUDIO CONTROL**

- A horn will sound at the inside of the building, warning the forklift operator if there is not R.I.G. present, or if the engagement is improper. In this case, the trailer must be secured by other means (wheel chokes, etc.) prior to servicing trailer.

Prerequisite for proper barrier engagement is that the trailer is parked firmly against a 4" (trade standard) thick dock bumper. The activation/deactivation is solely controlled from inside of the building by momentarily depressing either the Lock (raise) button or the Unlock (lower) button.

The normal mode of the barrier is in the lower STORED position, showing a flashing red light (trailer not secured) at the inside of the building and a flashing green light (trailer free to move to or away from the loading dock) at the outside of the building.

Once the trailer is parked, the dock attendant will depress the Lock button. This will raise the barrier to engage the R.I.G. As soon as the R.I.G. is properly locked, there will be a simultaneous light change - the inside will change from red to green flashing (trailer secured) and the outside will change from green to red flashing (do not move trailer). After the service is complete, the dock attendant will have to depress the Unlock button which then will return the barrier to its STORED position.

A proper barrier engagement is achieved when the barrier raises unobstructed to secure the horizontal cross member of the R.I.G. Assembly. An improper barrier engagement is if the horizontal cross member of the R.I.G. is missing, obstructed or it is bent or located so far toward the rear axle of the trailer that it will prevent the free passage of the barrier. At this point, the trailer must be secured by other means (example: wheel chocks) in order to become serviceable.

## FEATURES

Refer to Figure 2, page 8 for the locations of the following features:

### **R.I.G.**

Acronym used for the Federally mandated rear impact guard located on the rear of over the road trailers to prevent accidental underride by automobiles.

### **POSITIONING CYLINDER/LIFTING SPRING**

Positioning Cylinder extends to lower main cylinder/barrier assembly to stored state. Lifting Spring, raises locking cylinder/barrier assembly to capture R.I.G. and keep in constant contact.

### **MAIN CYLINDER/RETURN SPRINGS**

Main Cylinder extends to position barrier outside of pit. Return springs retract the main cylinder, keeping the vertical barrier face in contact with the R.I.G.

### **R.I.G. SENSOR**

Detects when the barrier is secured to the R.I.G.

### **BARRIER ASSEMBLY**

Secures R.I.G. to prevent trailer from separating from the dock.

### **HYDRAULIC VALVE BLOCK**

Allows restraint to operate using the leveler power unit.

### **PIT COVER/BRUSH SEAL**

Protects the barrier assembly, float mechanism, hydraulic hoses and cylinders from debris.

### **SENSING SWITCHES, CONTROL BOX, OUTSIDE LIGHT BOX AND SIGNAGE**

Combination of these components is used to control the VBR-500 DOK-LOK vehicle restraint and provide audio/visual communications to the dock attendant and trailer driver.

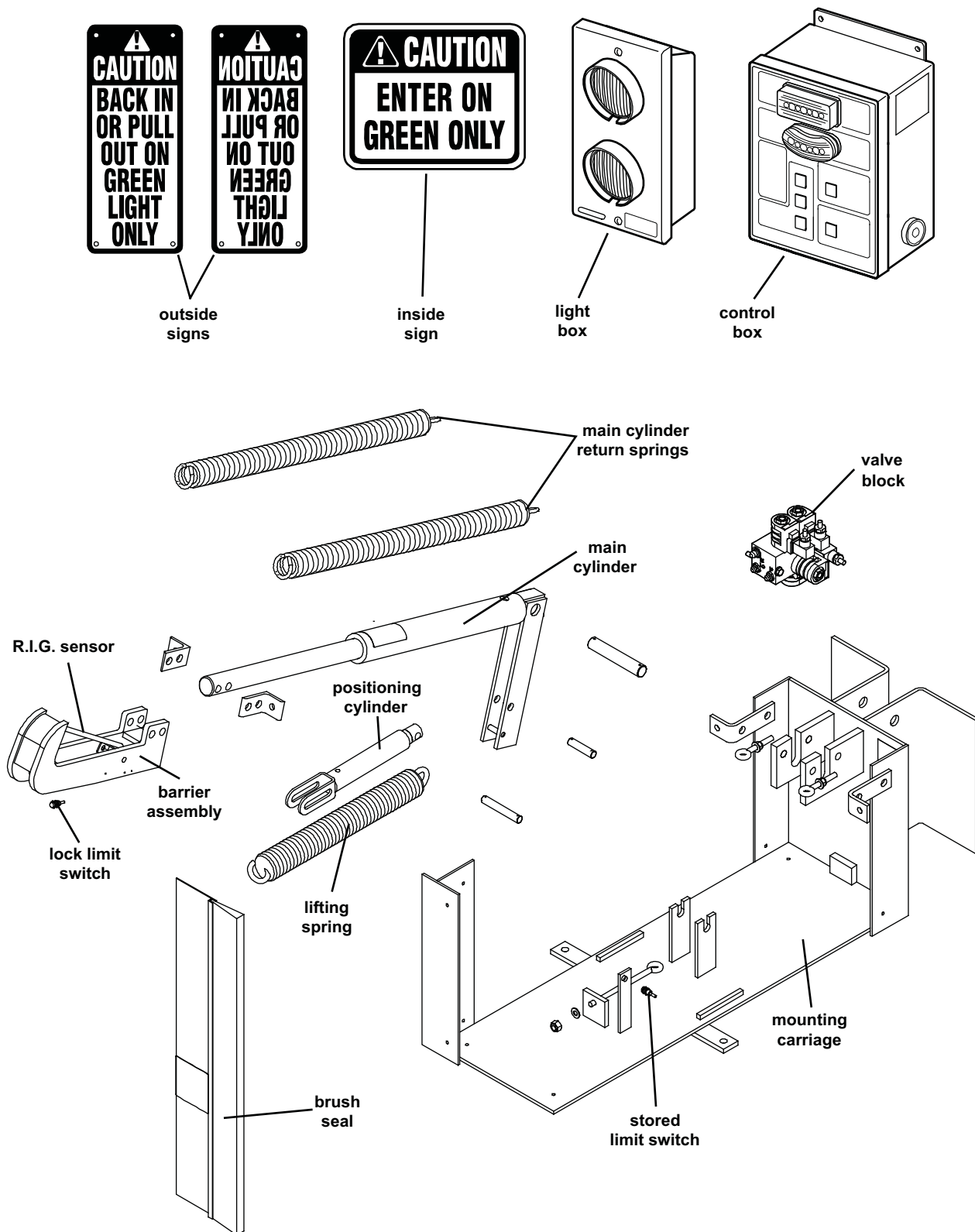


FIGURE 2 - VBR-500 DOK-LOK VEHICLE RESTRAINT FEATURES



# OPERATING PROCEDURE

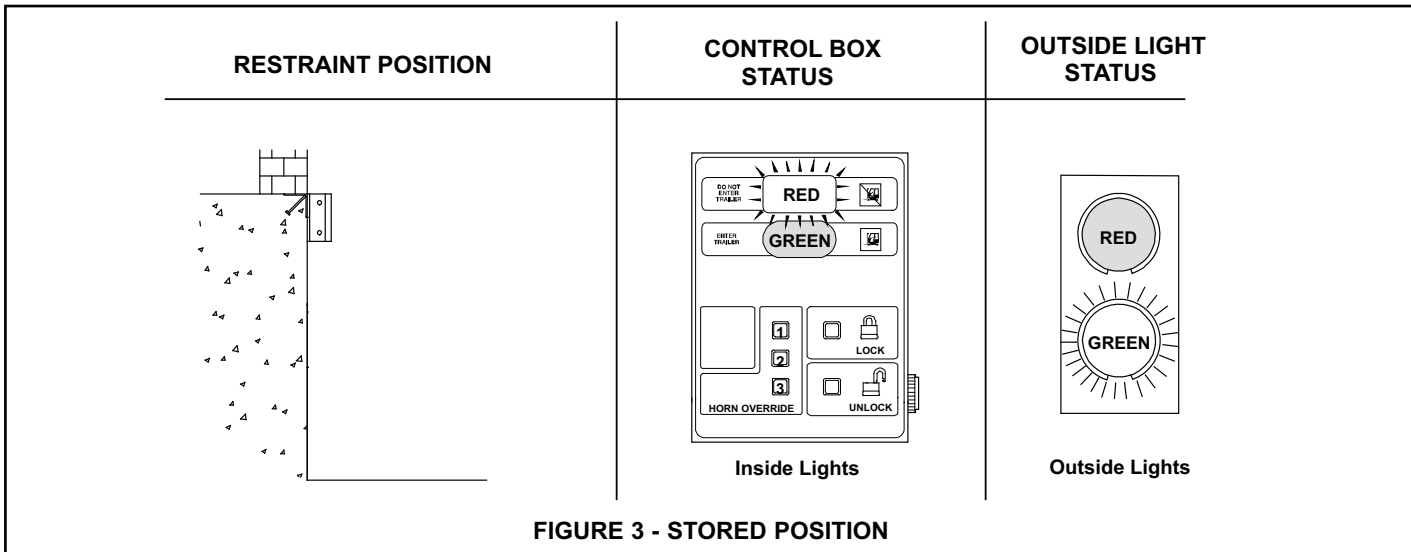
## WARNING

- Before loading or unloading a vehicle at your loading dock while using a DOK-LOK vehicle restraint, always visually inspect to be sure that the barrier blocks the R.I.G. assembly. If a condition occurs that cannot be remedied by backing the trailer firmly against the dock bumpers, secure the trailer by other means.
- Be sure that the area around the R.I.G. assembly is free of plates or other obstructions.
- Always operate the DOK-LOK vehicle restraint from the top of the dock.
- Inspect all restraint lights daily to make certain they work properly.
- Perform maintenance on restraints in accordance with Maintenance on page 19 of this manual.
- DOK-LOK vehicle restraints should be operated only by authorized personnel who have read and understand the Owner's Manual.
- Call your local representative or RITE-HITE at (800) 456-0600 with any questions.

**FAILURE TO FOLLOW THESE PROCEDURES  
COULD ALLOW UNEXPECTED TRAILER /  
LOADING DOCK SEPERATION RESULTING IN  
DEATH OR SERIOUS INJURY!**

### Stored Position / Restraint UNLOCKED

Barrier is in the STORED position. Inside light is flashing red alerting forklift operator unsafe condition exists. Outside light is flashing green alerting truck driver it is safe to back in.



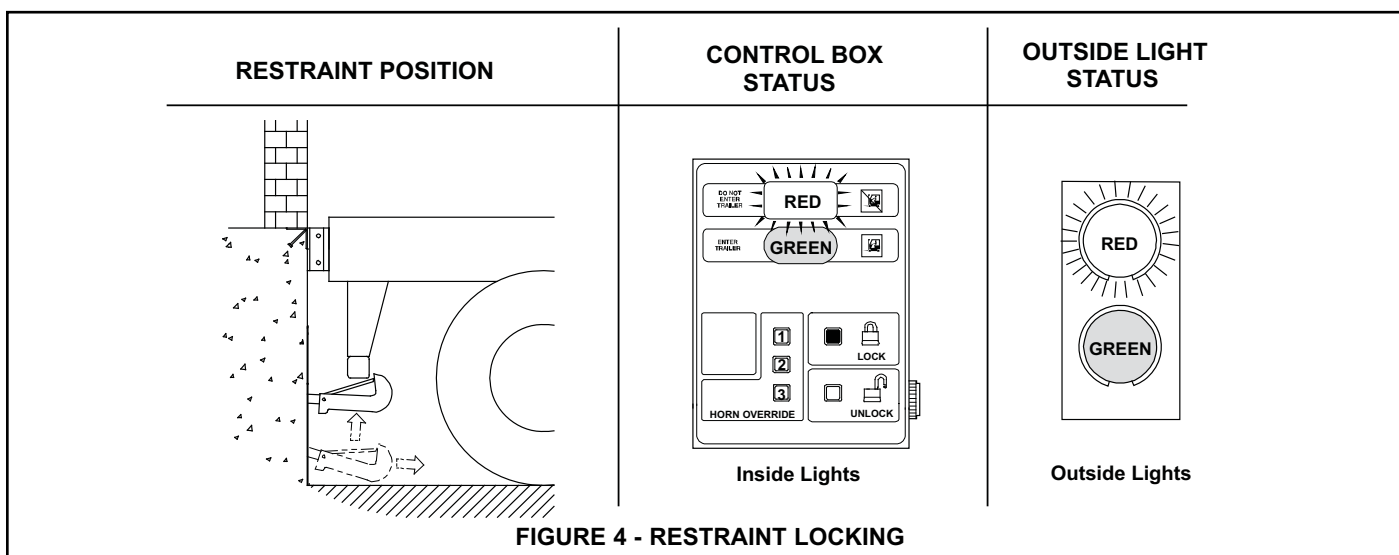
## Restraint Locking, LOCK Button Pressed

Trailer has backed into loading dock and is parked firmly against dock bumpers. Barrier extends out of the pit from stored position and moves up to obstruct R.I.G. Inside light is steady red alerting the operator that an unsafe condition exists and barrier is in transit. Outside light is flashing red alerting truck driver not to move.

If horn sounds, go to FAULT state, otherwise go to Restraint LOCKED.

## CAUTION

If trailer can not be restrained due to a lift gate or other obstruction that could become damaged, go to OVERRIDE state.

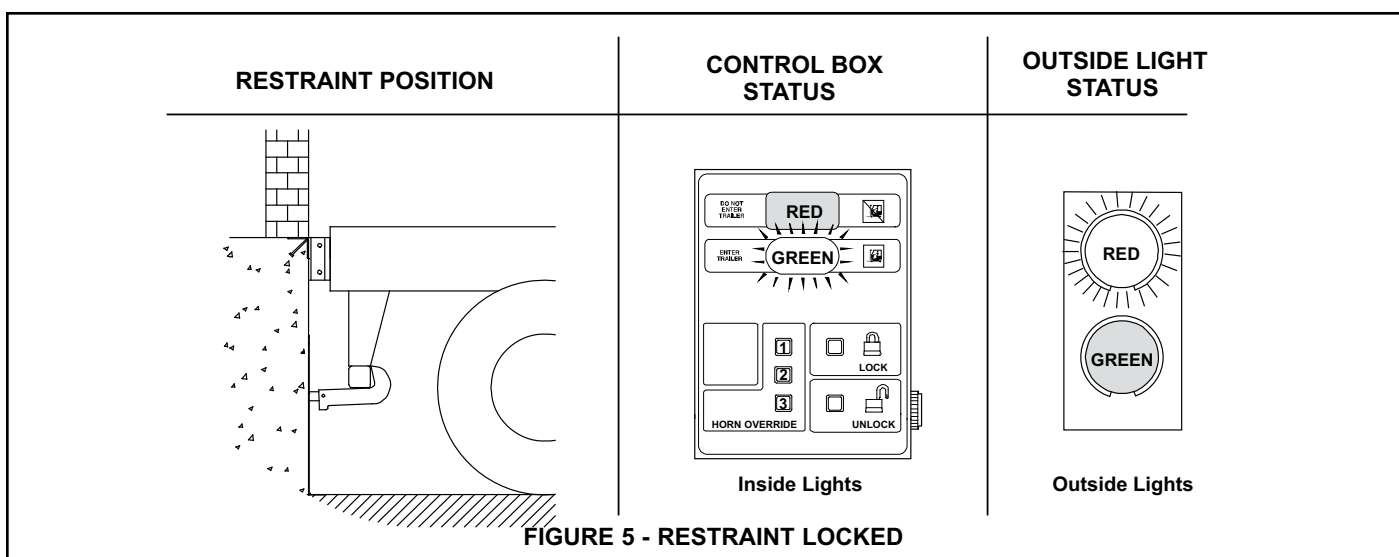


## Restraint LOCKED

Once the R.I.G. is obstructed by the barrier, a LOCKED condition exists. Inside light is flashing green alerting the forklift operator a safe condition exists. Outside light is flashing red alerting truck driver not to move.

## WARNING

Visually inspect to ensure that the DOK-LOK barrier obstructs the R.I.G. of the trailer being serviced before operating the dock leveler.

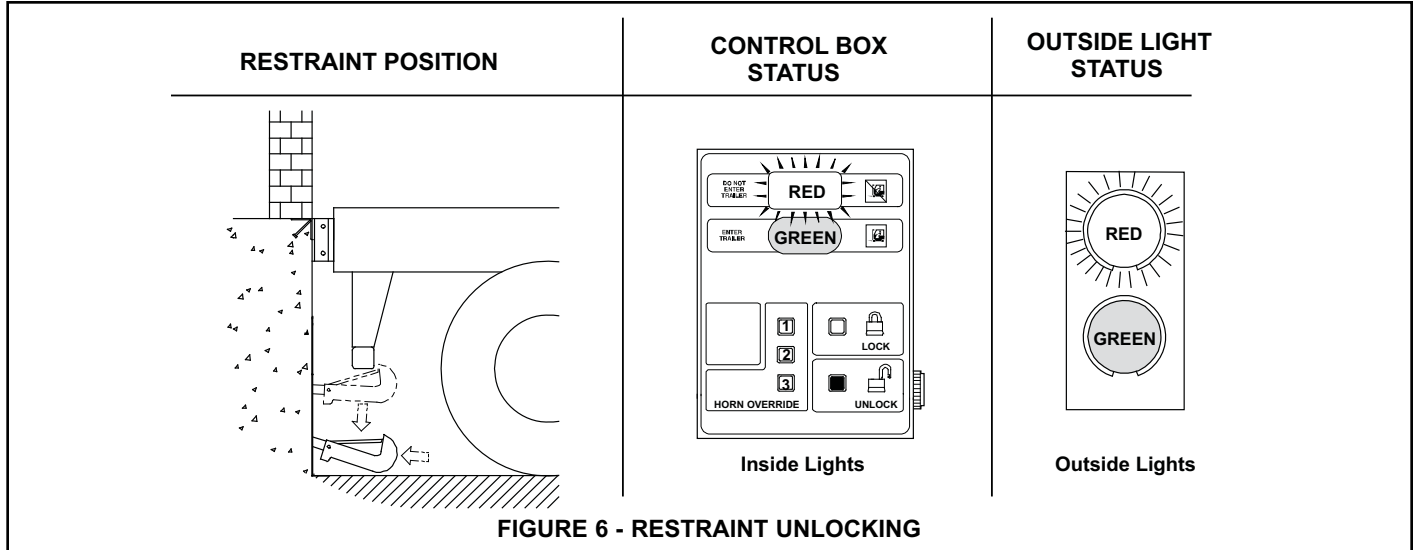


## Restraint UNLOCKING, UNLOCK Button Pressed

Barrier extends and moves down from the LOCKED position. Once down the barrier retracts to the STORED position under the leveler. Inside light is steady red alerting the operator that an unsafe condition exists and

barrier is in transit. Outside light is flashing red alerting truck driver not to move.

If horn sounds go to FAULT state, otherwise go to STORED.



## FAULT State From LOCKING State

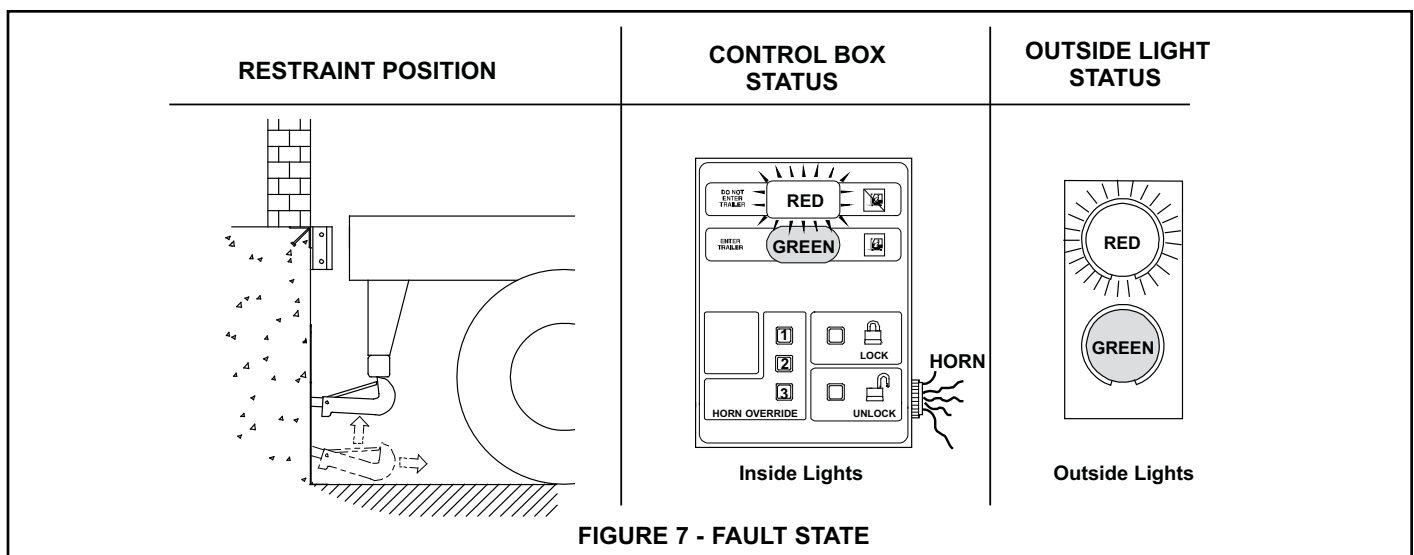
Barrier cannot obstruct the R.I.G. Barrier will auto-retract to its stored position. This could be due to a R.I.G. that is located too far toward the rear axle, bent, obstructed or missing. Inside light is flashing red and horn is pulsing, alerting the forklift operator that the trailer is not locked. Outside light is flashing red alerting the truck driver not to move.

If the trailer is parked firmly against the dock bumpers go to OVERRIDE state. If not, press UNLOCK to clear the fault, have trailer back up and repeat Restraint LOCKING.

## FAULT State From UNLOCKING State

Barrier cannot retract to the STORED position. The barrier could be caught on the R.I.G. or another part of the trailer. Inside light is flashing red and horn is pulsing, alerting the forklift operator that the trailer is not locked. Outside light is flashing red alerting the truck driver not to move.

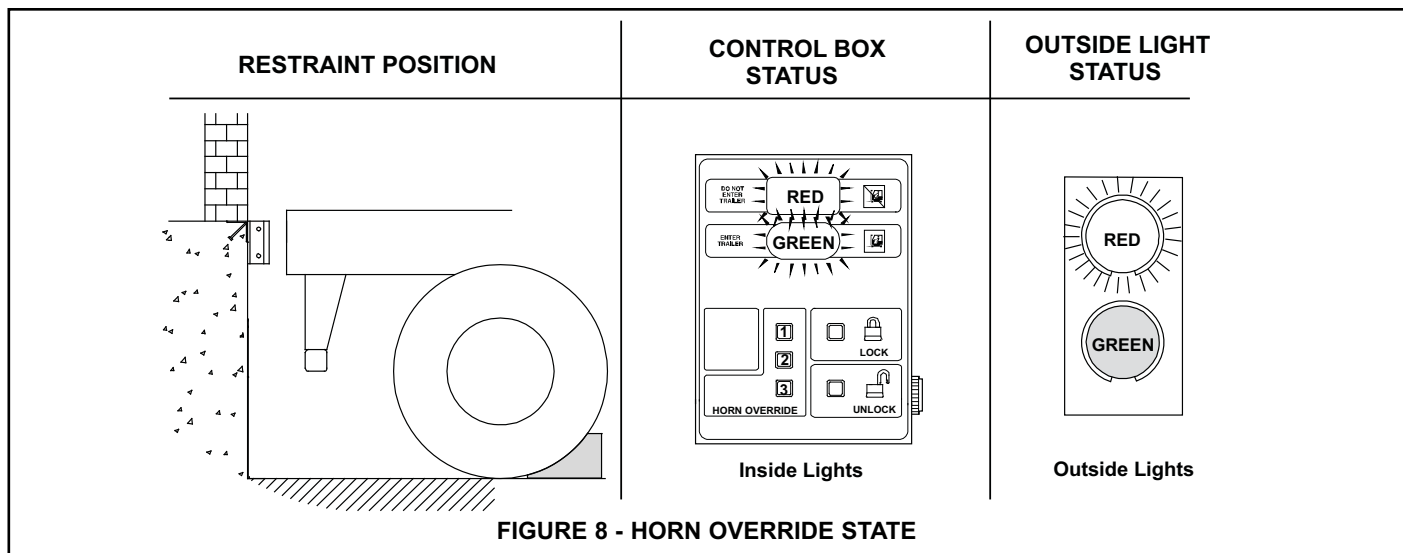
Make sure trailer is parked firmly against the dock bumpers. If not, press LOCK to entrap R.I.G., have trailer back up and repeat Restraint UNLOCKING.



## **OVERRIDE State, OVERRIDE Code Entered after Securing Trailer by Alternate Means**

An alternate means of securing the truck must be used if the barrier can not capture the rear impact guard. (i.e. wheel chocks). Inside lights are flashing red and green alerting the forklift operator the trailer is secured by other means. Outside light is flashing red alerting the truck driver not to move.

To return to STORED, press the HORN OVERRIDE button followed by the UNLOCK button.



## MAINTENANCE

### DANGER

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

### DANGER

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

### WARNING

A safe work place requires all lights and the horn to be working properly. DO NOT use DOK-LOK vehicle restraint if parts are broken or missing.

### IMPORTANT

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

**NOTE:** If a leveler is installed at the VBR-500 DOK-LOK vehicle restraint location, it may be necessary to raise the leveler before performing maintenance. Raise the leveler, insert and secure the SAFE-T-STRUT, and LOCKOUT/ TAGOUT the power source.

**NOTE:** Your local RITE-HITE® representative provides a Planned Maintenance Program (P.M.P.) which can be fitted to your specific operation. Call your local representative.

### DAILY

1. Remove debris around the VBR-500 DOK-LOK vehicle restraint pit and from loading dock face.
2. Verify inside and outside lights are working.
3. Replace damaged or missing light bulbs and lenses.
4. Repair, remount, or replace outside and inside signs as required.
5. Inspect dock bumpers. Missing bumpers must be replaced.

### 180 DAYS

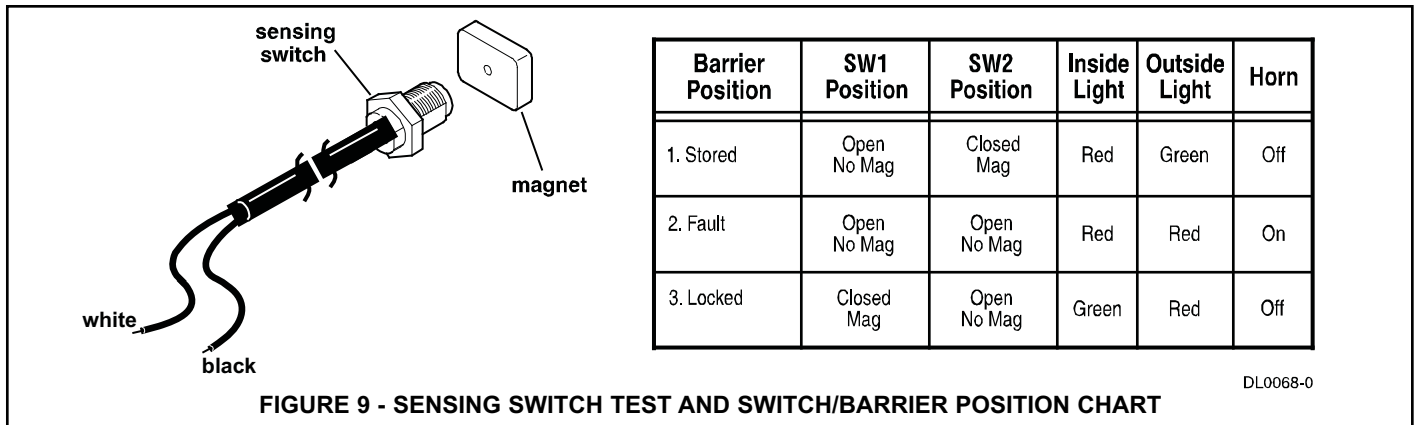
1. Perform all Daily maintenance.
2. Inspect hydraulic hoses and power unit.
3. Check oil fluid level.
4. Inspect pit junction and light box. They should be rigidly mounted. If loose or damaged, inspect all wires and wire connections.
5. Inspect switch wires from VBR-500 DOK-LOK vehicle restraint to junction box. Look for kinks, crushed areas, etc.
6. Perform operational test after all maintenance repairs and adjustments are complete.
7. Inspect dock bumpers. Four inches (4") of protection is required. Worn, torn, loose or missing bumpers must be replaced.

# TROUBLESHOOTING

## GENERAL DIAGNOSTIC INFORMATION

Problem	Probable Cause	Solution
1 DOK-LOK barrier does not raise and lights do not flash.	Power source malfunction.	Check power source including building circuit breaker, 1A fuse and 5A fuse on power module.
2 DOK-LOK lights are flashing, but barrier does not raise/lower, to full extent.	Blown fuse. Low incoming voltage. Power module failure. No push button inputs. Hydraulic power unit	Check 5A fuse on power module. Replace as required. Verify incoming voltage at L1 and L2 is a minimum of 110V. Verify the appropriate LED is lit when the LOCK button or UNLOCK button is pressed. Check for failed push button board or disconnect ribbon cable. Check hydraulic power unit. Repair or replace as required.
3 DOK-LOK barrier is operational but all lights are out.	Bulbs burnt out, loose or missing. Damaged CPU module.  Incorrect or damaged field wiring.	Check all bulbs and replace as required. If the ISG and OSR LEDs are not flashing while in the LOCKED position or the ISR and OSG LEDs are not flashing while in the UNLOCKED position, replace the CPU module as required. Verify wiring per Electrical Schematic.
4 DOK-LOK horn does not sound, but lights and barrier are operational.	Horn failure.  Damaged CPU module.  Incorrect or damaged field wiring.	Power horn using 12V DC power. If horn does not sound, replace as required.  LED labeled HORN should be flashing while in FAULT state. If not, replace CPU module as required.  Verify wiring per Electrical Schematic.

## SWITCH TESTING



### Sensing Switch Test Procedure

1. Set multimeter to "RX1" scale for "Continuity Test".
2. Attach multimeter leads to white and black wires of mag. reed switch connector. You should have:
  - no magnet present — no meter reading.
  - magnet present — a "Full Scale" meter reading.

## LED STATUS CHART

LED Inputs						LED Outputs											
	SW1	SW2	LOCK PB	UNLOCK PB	PB1, 2 & 3		ISR	ISG	OSR	OSG	HORN	M1	SOL1	SOL2	CR1	CR2	CR3
Stored (Unlocked)	F	T	-	-	-		P	F	F	P	F	F	F	F	F	*	T
Locking	F	F	M	-	-		T	F	P	F	F	T	F	T	F	*	T
Locked	T	F	-	-	-		F	P	P	F	F	F	F	T	T	*	T
Storing (Unlocking)	F	F	-	M	-		T	F	P	F	F	T	T	F	F	*	T
Fault	F	F	-	-	-		P	F	P	F	P	F	F	F	F	*	F
Horn Silence	?	?	-	-	M		P	P	P	F	F	F	F	F	T	*	T

**SW1** = MAG RES 1 (LOCK)  
**SW2** = MAG RES 2 (UNLOCK)  
**LOCK PB** = Lock Push Button  
**UNLOCK PB** = Unlock Push Button  
**PB1, 2, & 3** = Horn Silence Code Push Buttons  
**FAULT** = SW1/SW2 did not sense a safe LOCK/UNLOCK

**ISR** = Inside Red Light  
**ISG** = Inside Green Light  
**OSR** = Outside Red Light  
**OSG** = Outside Green Light  
**HORN** = Alarm Horn  
**SOL1** = Solenoid Extends Lower Cylinder  
**SOL2** = Solenoid Allows Lower Cylinder to Retract  
**CR1** = Green Light Interlock Output  
**CR2** = Unidox Output  
**CR3** = Security System Output  
**M1** = Power Unit Run

T = Steady ON  
 D = Double Pulse  
 F = OFF  
 P = Pulsing/Flashing  
 \* = TRUE when Unidox is enabled  
 ? = Varies depending on operation  
 M = Lights when button is pressed

FIGURE 10 - LED STATUS CHART



## ELECTRICAL SCHEMATIC - Standalone Power Unit

[illegible]

# ELECTRICAL SCHEMATIC - Combination Power Unit Pit Style Leveler

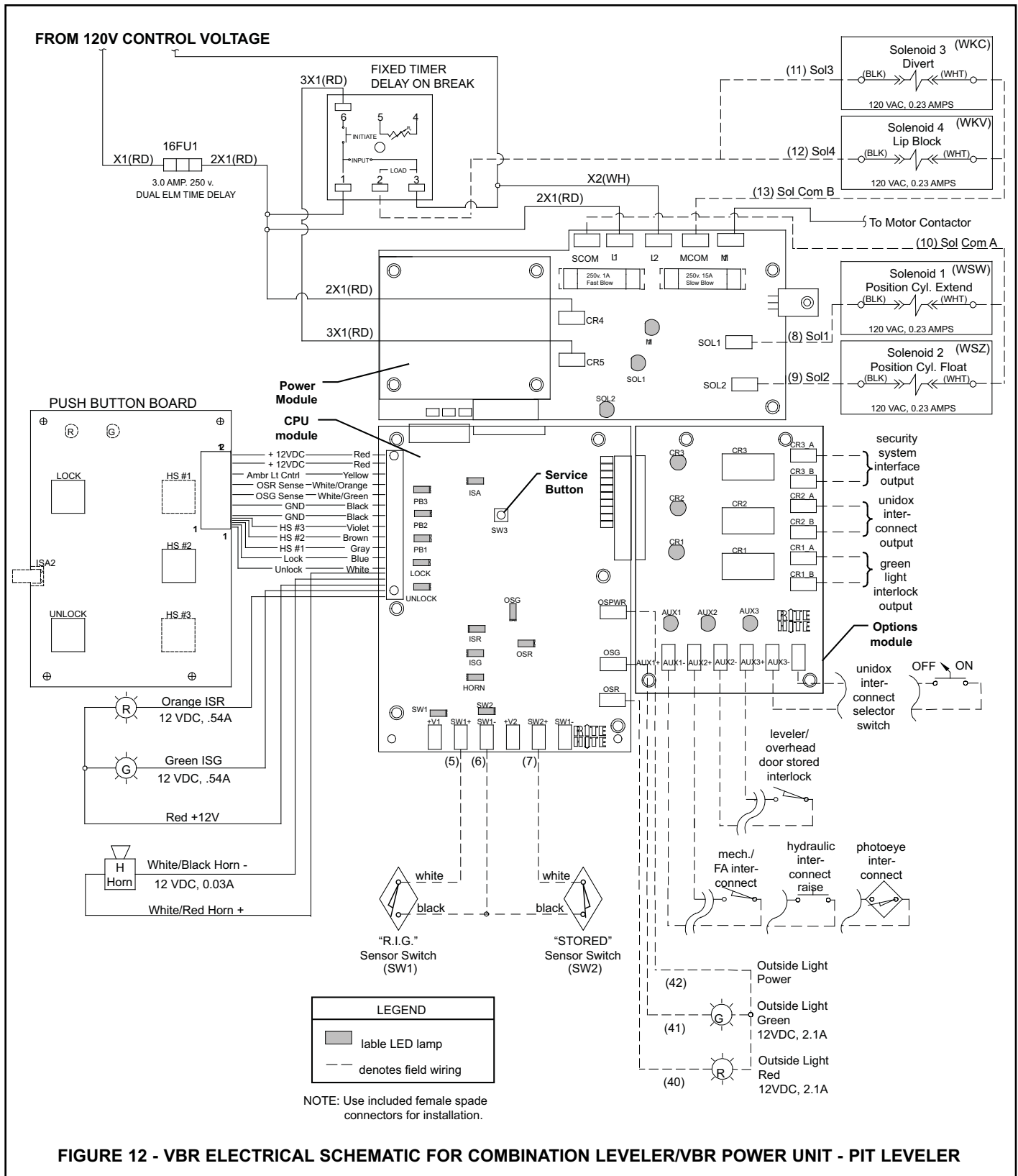
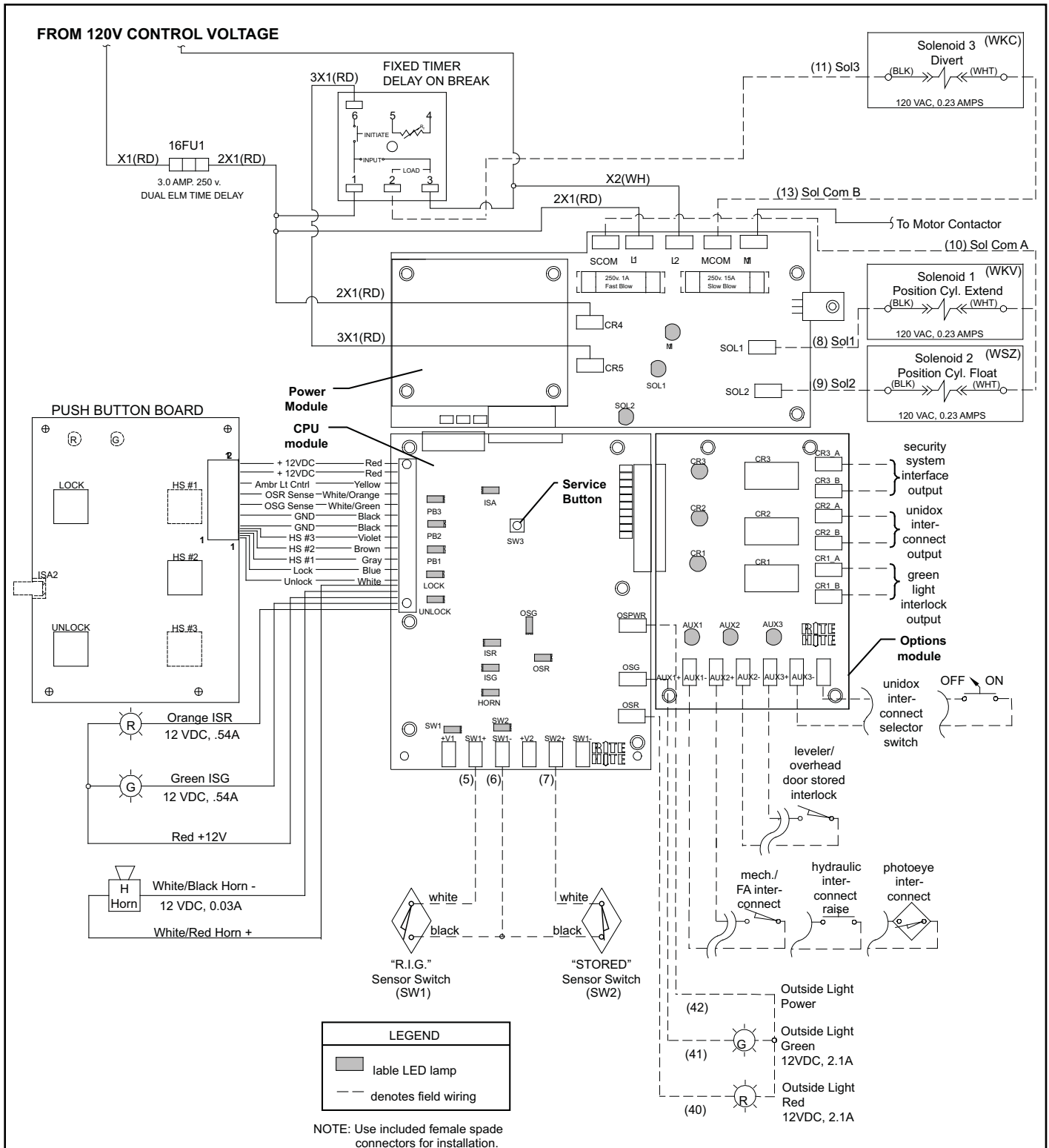


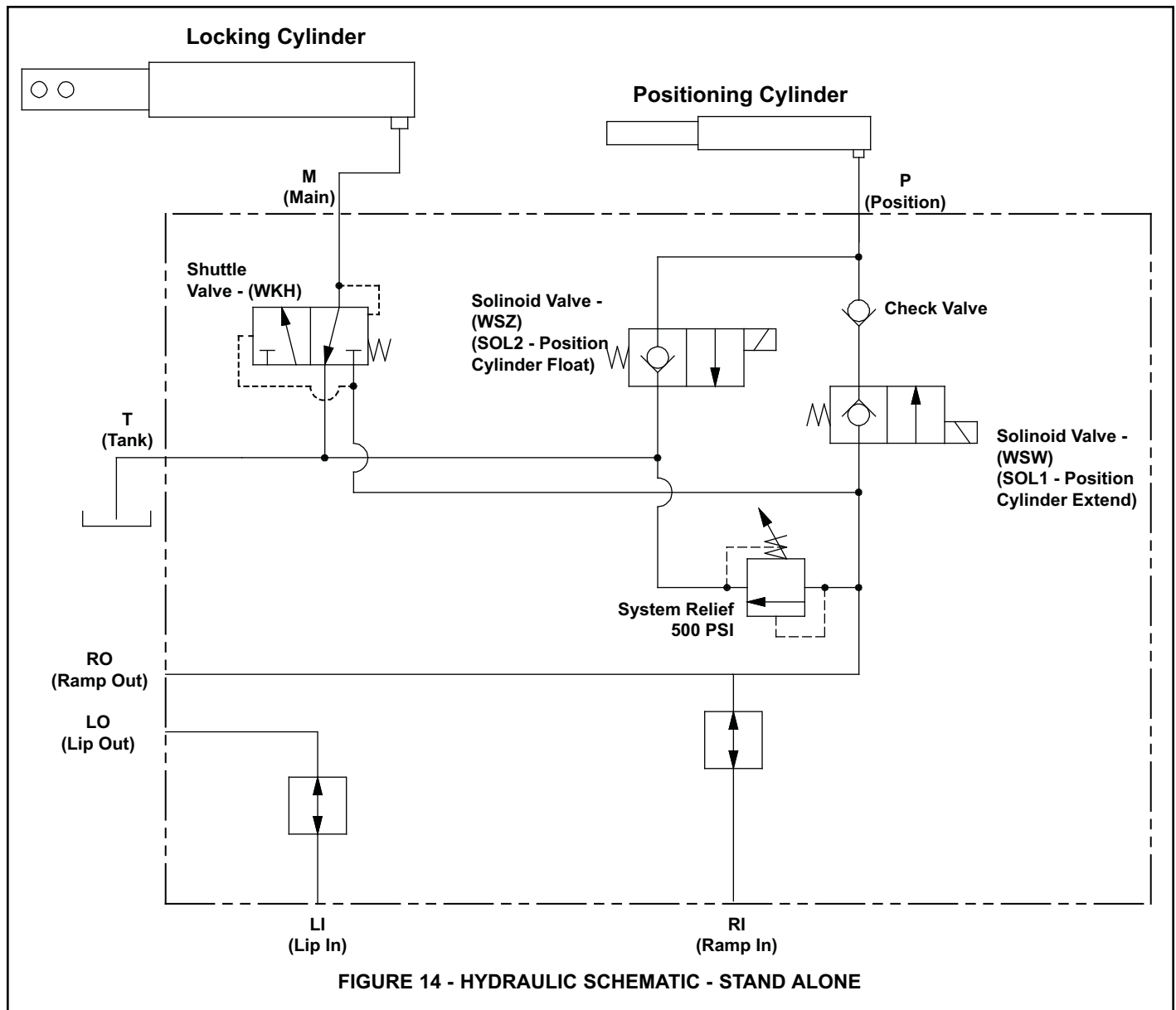
FIGURE 12 - VBR ELECTRICAL SCHEMATIC FOR COMBINATION LEVELER/VBR POWER UNIT - PIT LEVELER

# ELECTRICAL SCHEMATIC - Combination Power Unit Vertical Leveler



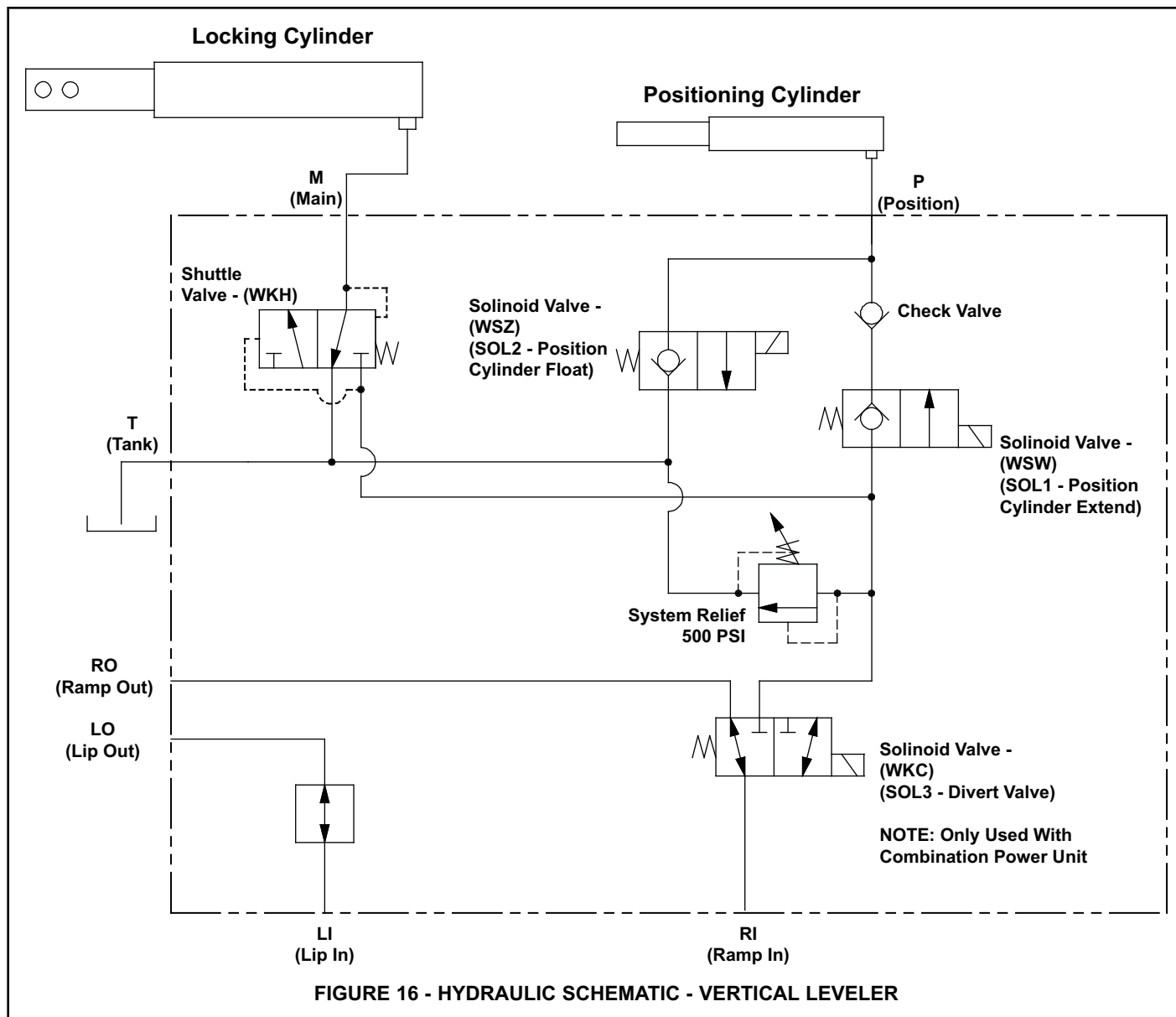
**FIGURE 13 - VBR ELECTRICAL SCHEMATIC FOR COMBINATION LEVELER/VBR POWER UNIT - VERTICAL LEVELER**

## HYDRAULIC SCHEMATIC - Standalone Power Unit





# HYDRAULIC SCHEMATIC - Combination Power Unit Vertical Leveler



## OUTSIDE LIGHT BOX WIRING

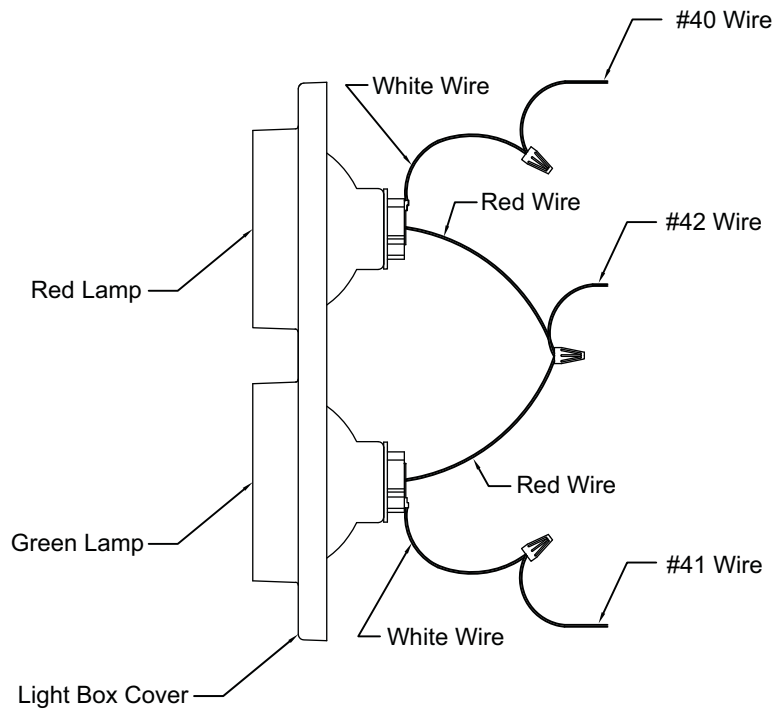
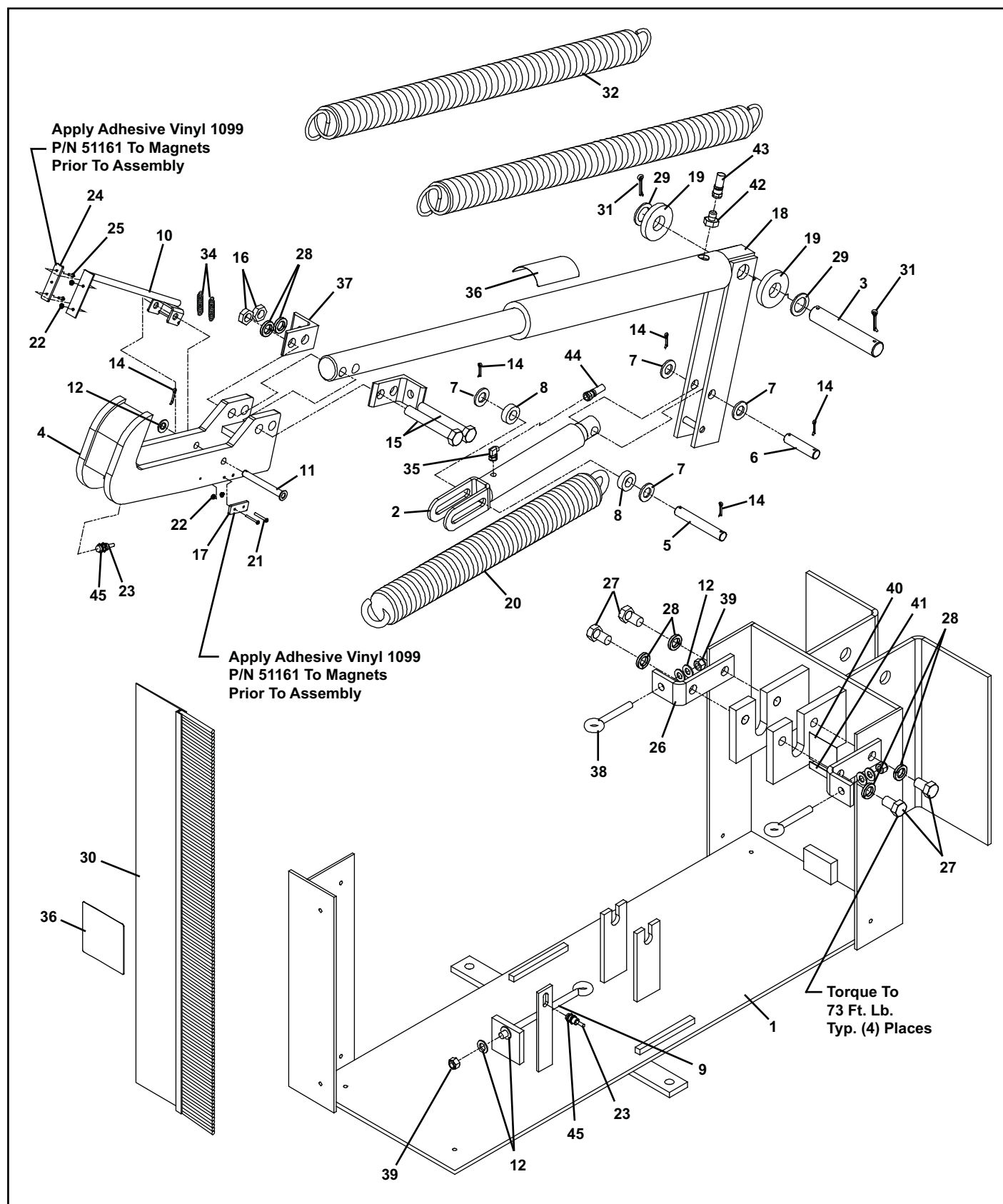


FIGURE 17 - OUTSIDE LIGHT BOX WIRING

# REPLACEMENT PARTS

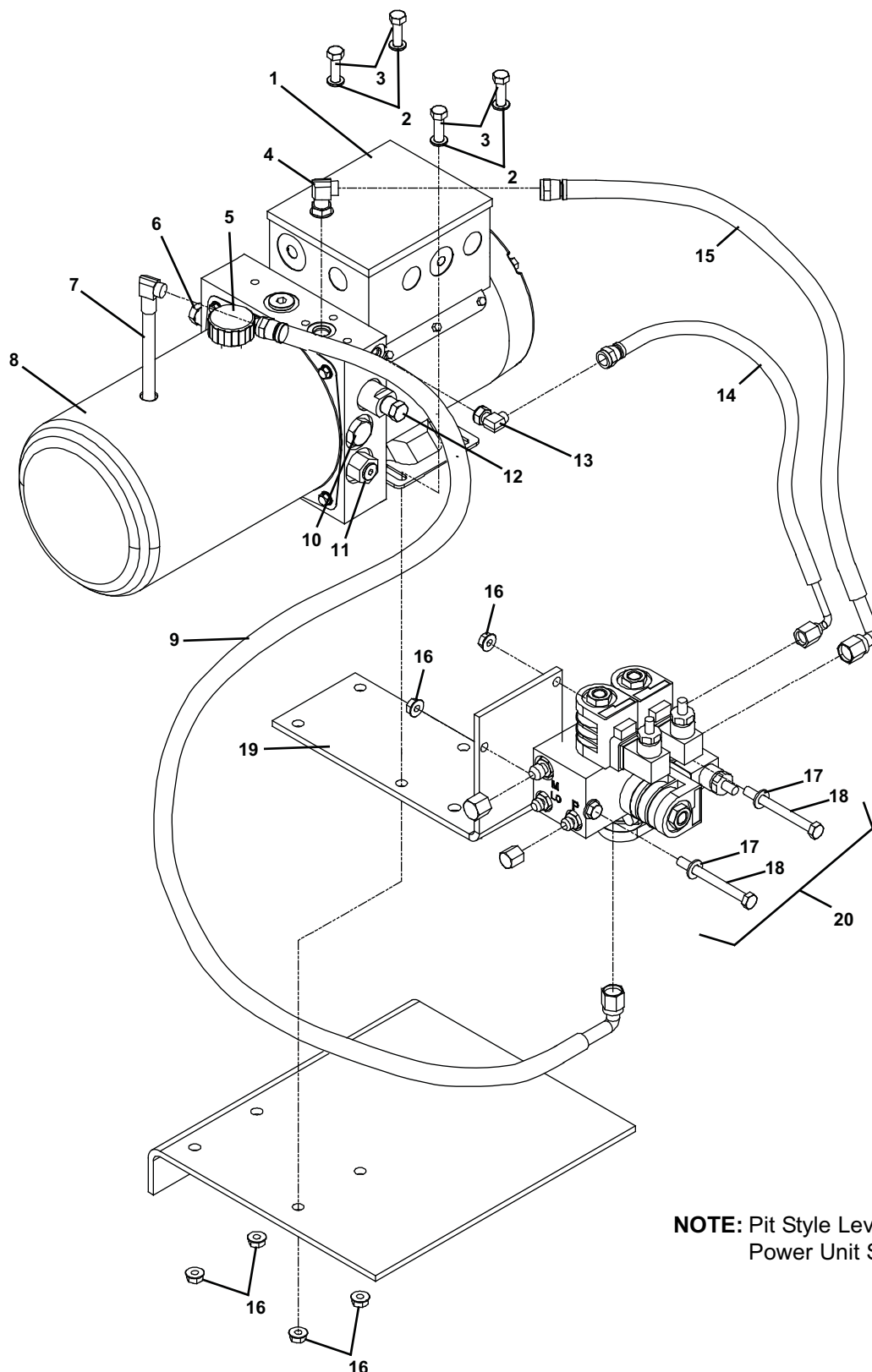




## REPLACEMENT PARTS LIST

Item	Qty	Description	Part Number
1	1	Base Weldment	116706
2	1	Positioning Cylinder	117482
3	1	Clevis Pin, Main Cylinder Mounting, 1.25Dia. x 7L	116727
4	1	Barrier Weldment	116714
5	1	Clevis Pin, Position Cylinder Mount, .75Dia. x 5L	116728
6	1	Clevis Pin, Position Cylinder Mount, .75Dia. x 3.25L	116729
7	4	SAE Flat Washer, .75	51716
8	2	Spacer Tube, UHMW	117906
9	1	Lift Spring Adjustment Eye Bolt, .5-13 x 6L	51106
10	1	RIG Sensor Weldment	116723
11	1	Clevis Pin, RIG Sensor Mount, .5Dia x 4.25L	116731
12	7	SAE Flat Washer, .5	51706
14	5	Cotter Pin, .125Dia x 1	51901
15	2	Hex Head Cap Screw, .75-10 x 4.5L GR5	116733
16	2	Nut, .75-10UNC, Flat Jam	117895
17	1	Magnet, Barrier	117680
18	1	Main Cylinder	116734
19	2	Round Tube, 3 x .875W x .5L, UHMW	116736
20	1	Lifting Spring	137309
21	2	Pan Head Screw, #6-32 x 1.25L	116738
22	4	Nylock Nut, #6-32	58814
23	2	Mag. Reed Switch	134627
24	1	Magnet, RIG Sensor	107121
25	2	Pan Head Screw, #6-32 x .5L	109552
26	2	Formed Angle, .375 x 2W x 5.5L	117161
27	4	Hex Head Cap Screw, .750-10 x 1.250	117186
28	6	Lock Washer, .75	51814
29	2	Machine Washer, 10Ga. x 1.25ID x 1.88OD	51745
30	2	Brush Seal Assembly, 38L	117207
31	2	Cotter Pin, .188Dia. x 1.5L	51907
32	2	Main Cylinder Return Spring	117204
33	1	Base Cover (Not Shown)	117368
34	2	Extension Spring, .375OD x .055 Wire x 2L	107120
35	1	Hyd. Fitting Elbow, 90Deg. #4 SAE(M) #4 JIC(M)	16920
36	2	Warning Decal, Pinch Point	117534
37	2	Mounting Angle, 3.5 x 2.5 x .38 x 2L	117849
38	2	Eye Bolt, .5-13 x 6L	117900
39	3	Serrated Flange Nut, .5-13	51569
40	1	Patent Decal	18391
41	1	Serial Number Decal	117631
42	1	Hyd. Fitting Straight, #8 SAE(M) #6 JIC(M)	117516
43	1	Main Cylinder Hose	117583
44	1	Position Cylinder Hose	117921
45	2	Internal Tooth Lock Washer, .5	51808

## HYDRAULIC REPLACEMENT PARTS (Haldex - Before 11/21/13)

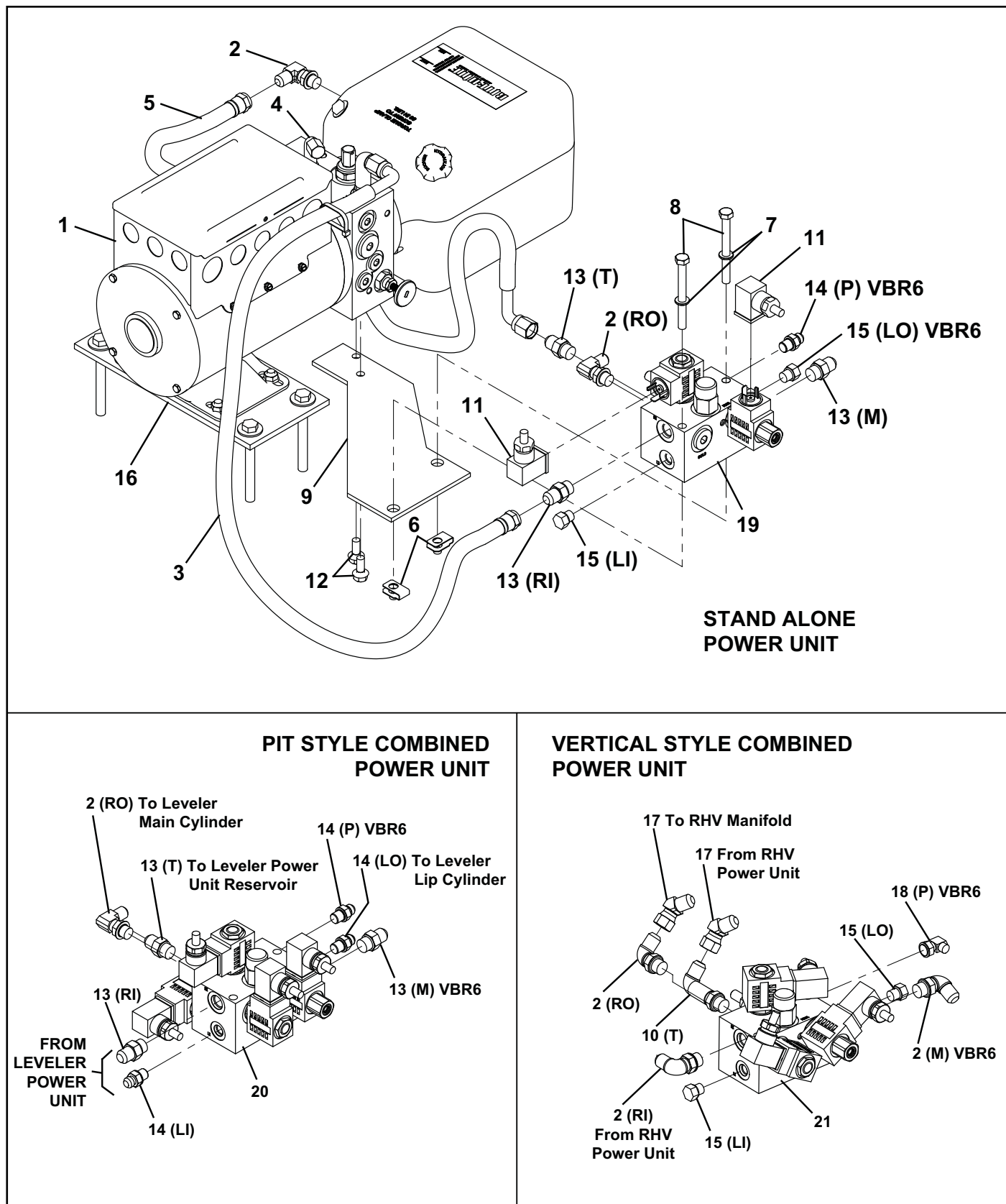


**NOTE:** Pit Style Leveler  
Power Unit Shown

## HYDRAULIC REPLACEMENT PARTS LIST (Haldex - Before 11/21/13)

Item	Qty	Description	Part Number
1	1	Power Unit - Standalone Dok-Lok, 120V 1PH (Ref. To Leveler Parts Manual For Combo Dock Leveler/Dok-Lok Power Unit)	116679
2	4	Split Lock Washer, .31	51769
3	4	Hex Head Bolt, .313-18 x 1, GR5	51627
4	2	90Deg. Hydraulic Fitting, #4 SAE(M) #6 JIC(M)	55267
5	1	Hydraulic Tank Cap	*
6	1	Shuttle Valve	*
7	1	90Deg. Hydraulic Fitting W/Internal Nyl. Tube	117517
8	1	Hydraulic Tank	*
9	1	Hose Assembly, .38ID 18L	117527
10	1	Check Valve	*
11	1	System Relief Valve	*
12	1	Sequence Valve	*
13	1	90Deg. Hydraulic Fitting, #4 SAE(M) #4 JIC(M)	16920
14	1	Hose Assembly, .25ID 10L	117523
15	1	Hose Assembly, .38ID 14L	117524
16	6	Nut, .313-18	51535
17	2	Flat Washer, .312	51728
18	2	Hex Head Bolt, .313-18 x 3.25L	117518
19	1	Mounting Angle, 10 x 5.38 x .25	117493
20	1	Dok-Lok Manifold Complete, Standalone Unit (Incl. valves & solenoids)	117573
	1	Dok-Lok Manifold Complete, Combo Unit - Pit Leveler (Incl. valves & sol.)	117519
	1	Dok-Lok Manifold Complete, Combo Unit - Vert. Leveler (Incl. valves & sol.)	119168

# HYDRAULIC REPLACEMENT PARTS (Bucher - After 11/21/13)

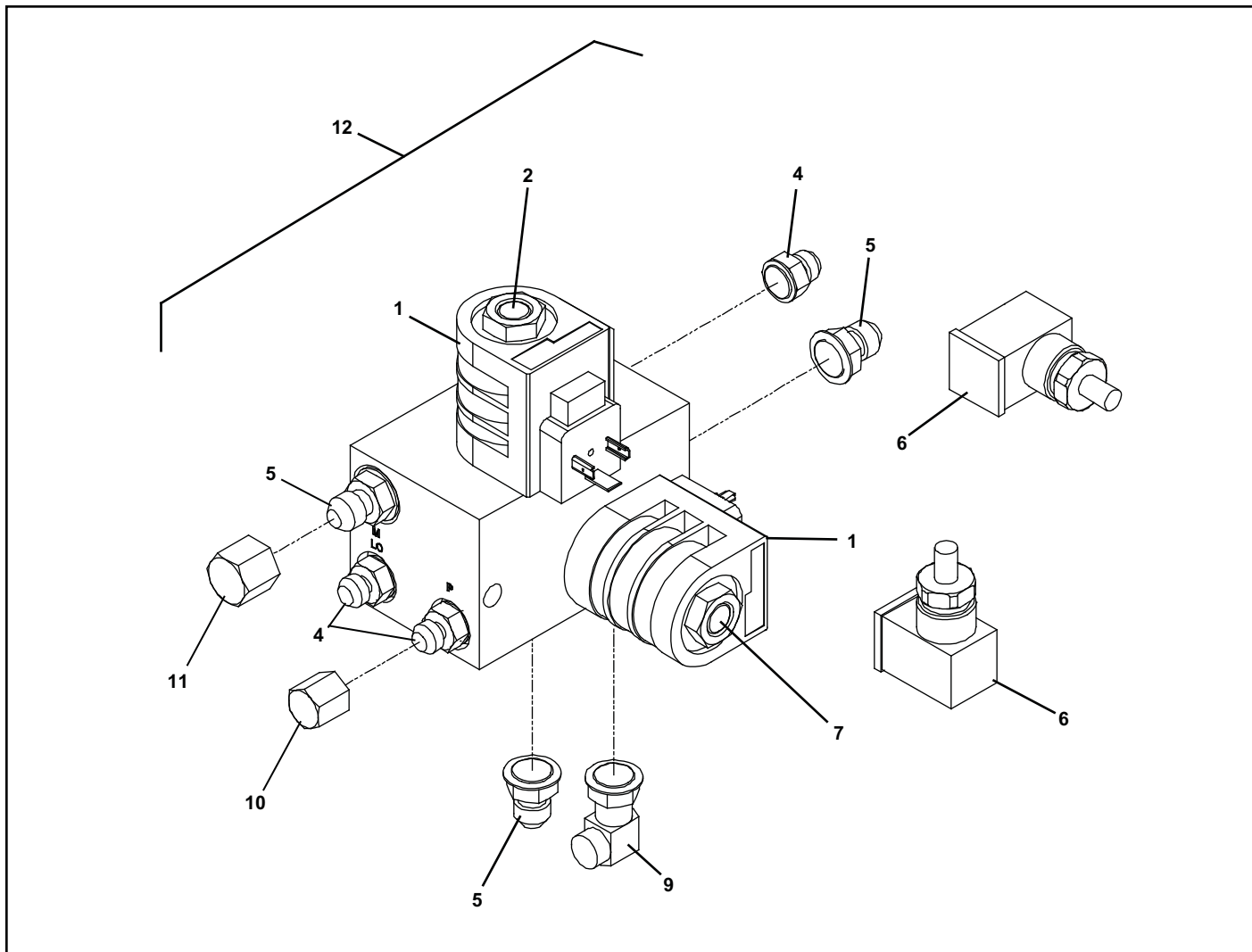


## HYDRAULIC REPLACEMENT PARTS LIST (Bucher - After 11/21/13)

Item	Qty	Description	Part Number
1	*1	Power Unit - Standalone Dok-Lok, 120V 1PH (Ref. To Leveler Parts Manual For Combo Dock Leveler/Dok-Lok Power Unit)	114167
2	*3	90Deg. Hydraulic Fitting, #4 SAE(M) #6 JIC(M)	55267
3	*1	Hose Assembly, .38ID 18L	117527
4	*1	90Deg. Hydraulic Fitting, #4 SAE(M) #4 JIC(M)	16918
5	*1	Hose Assembly, .38ID 18L	142598
6	*4	Palnut .31-18	56540
7	2	Flat Washer, .31	51803
8	2	Hex Head Bolt, .31-18 x 3.25L	117518
9	*1	Mounting Plate 10 x 7.25 x .19	142705
10	*1	90Deg Hydraulic Fitting #6 MAORB #6 MJ	16917
11	*4	Hirschmann Plug	117575
12	*2	Flange Bolt .31-18 x .75L	142701
13	*3	Fitting Straight #6 MORB #6 MJ	55386
14	*3	Fitting Straight #4 MORB #4 MJ	117513
15	*2	Plug #4 MORB	118307
16	*1	Mounting Bracket	133051
17	*4	45Deg Hydraulic Fitting #6 MJ #6 FLS	55364
18	*1	90Deg Hydraulic Fitting #4 SAE(M) #4 JIC(M)	16920
19	*1	Dok-Lok Manifold Complete, Standalone Unit (Incl. valves & solenoids)	139659
20	*1	Dok-Lok Manifold Complete, Combo Unit - Pit Leveler (Incl. valves & sol.)	139395
21	*1	Dok-Lok Manifold Complete, Combo Unit - Vert. Leveler (Incl. valves & sol.)	139656

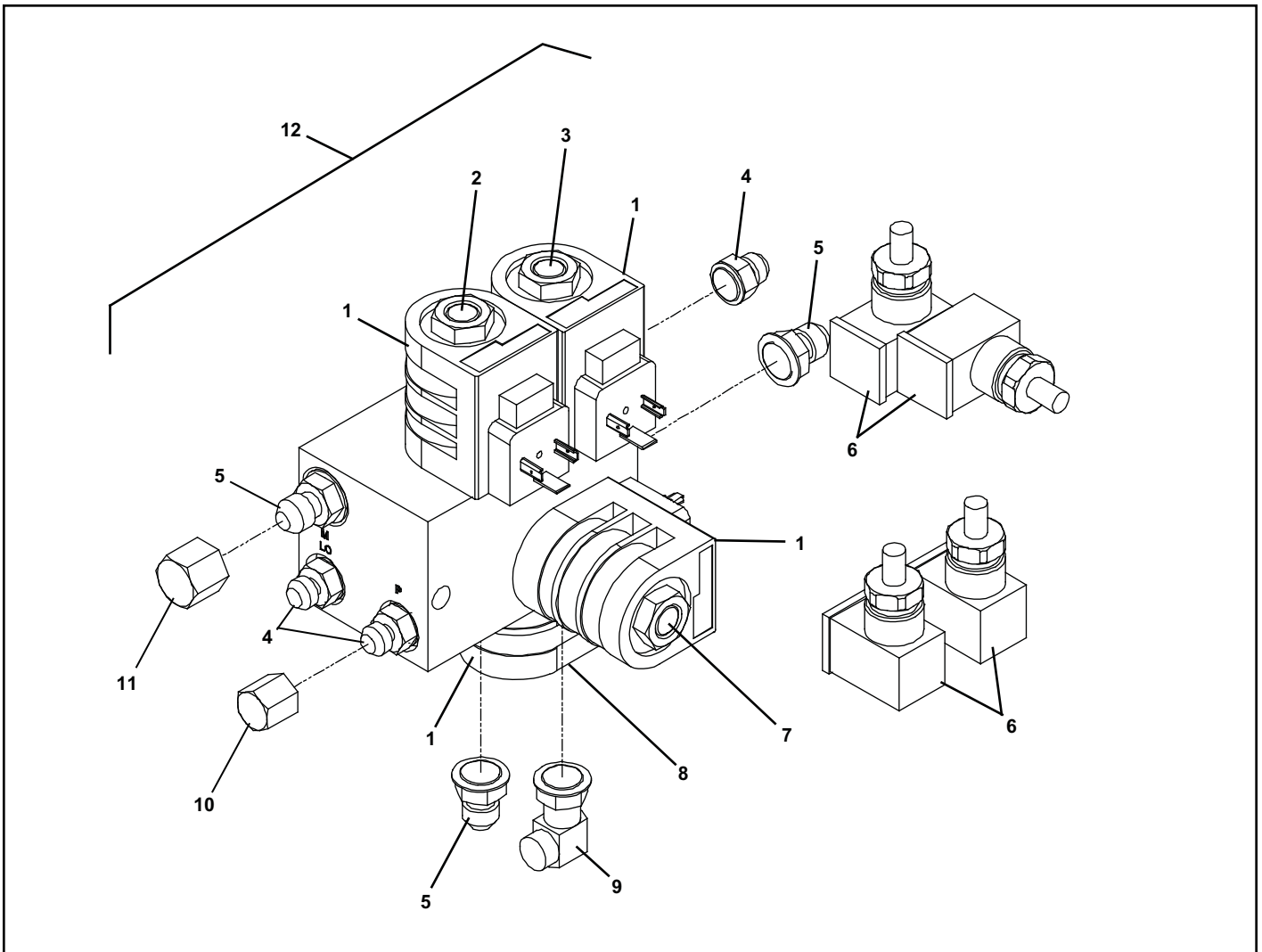
**NOTE:** \* Indicates the quantity shown changes depending on configuration ( Stand Alone, Pit or Vertical Style). Refer to illustration.

## HYDRAULIC MANIFOLD REPLACEMENT PARTS - Standalone Power Unit



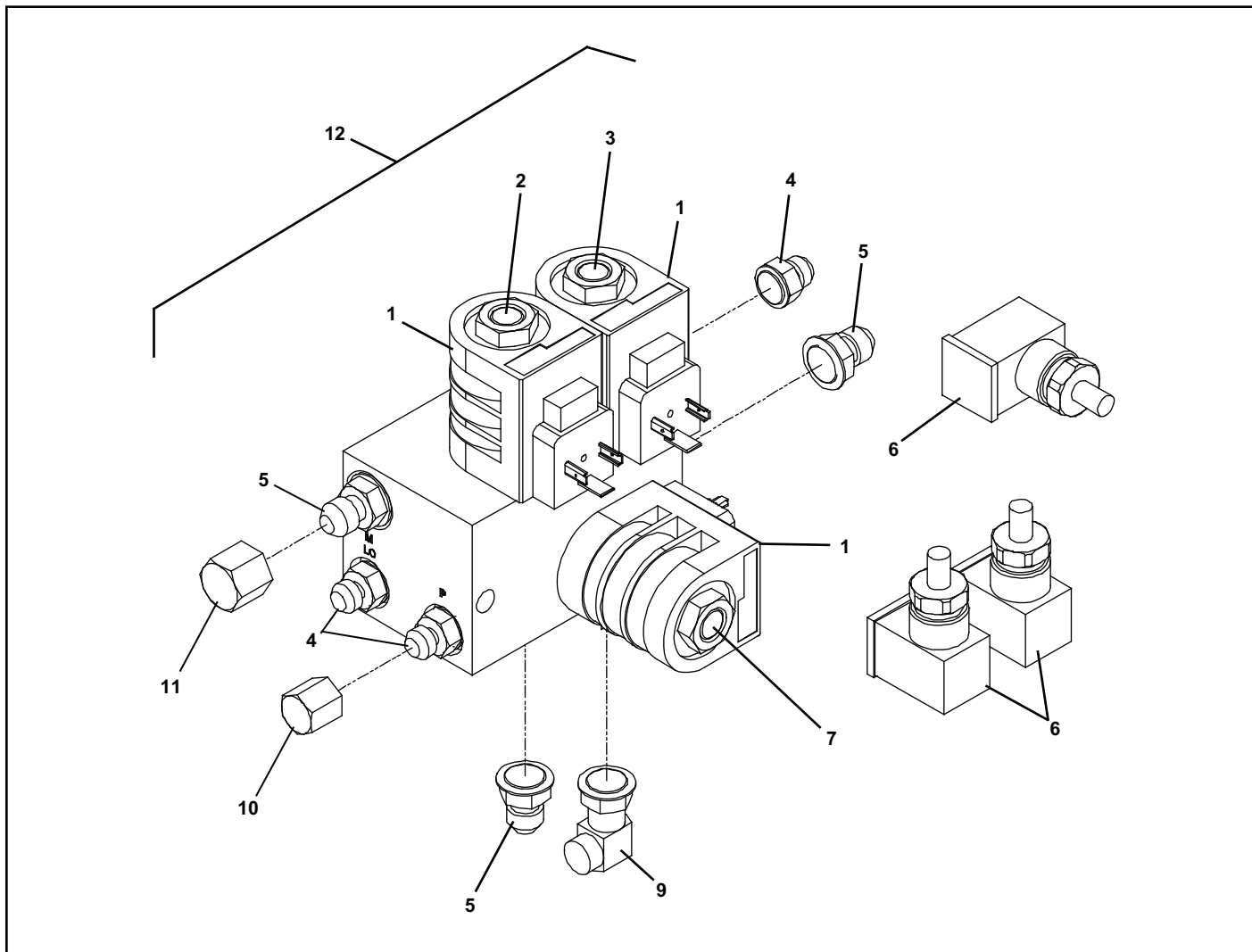
Item	Qty	Description	Part Number
1	2	Solenoid Coil	118553
2	1	Valve - Solenoid 1	118548
4	3	Straight Hydraulic Fitting #4	117513
5	3	Straight Hydraulic Fitting #6	117514
6	2	Hirschmann Plug Rect. & Harn. Assy.	117575
7	1	Valve - Solenoid 2	118548
9	2	90Deg. Hydraulic Fitting, #4 SAE(M) #6 JIC(M)	55267
10	1	#4 JIC Female Cap	118656
11	1	#6 JIC Female Cap	118658
12	1	Dok-Lok Manifold Complete, Stand Alone Unit (Includes valves & solenoids)	117573

# HYDRAULIC MANIFOLD REPLACEMENT PARTS - Pit Style Leveler



Item	Qty	Description	Part Number
1	4	Solenoid Coil	118553
2	1	Valve - Solenoid 1	118548
3	1	Valve - Solenoid 3	118549
4	3	Straight Hydraulic Fitting #4	117513
5	3	Straight Hydraulic Fitting #6	117514
6	4	Hirschmann Plug Rect. & Harn. Assy.	117575
7	1	Valve - Solenoid 2	118548
8	1	Valve - Solenoid 4	118550
9	2	90Deg. Hydraulic Fitting, #4 SAE(M) #6 JIC(M)	55267
10	1	#4 JIC Female Cap	118656
11	1	#6 JIC Female Cap	118658
12	1	Dok-Lok Manifold Complete, Combo Unit - Pit Leveler (Incl. valves & sol.)	117519

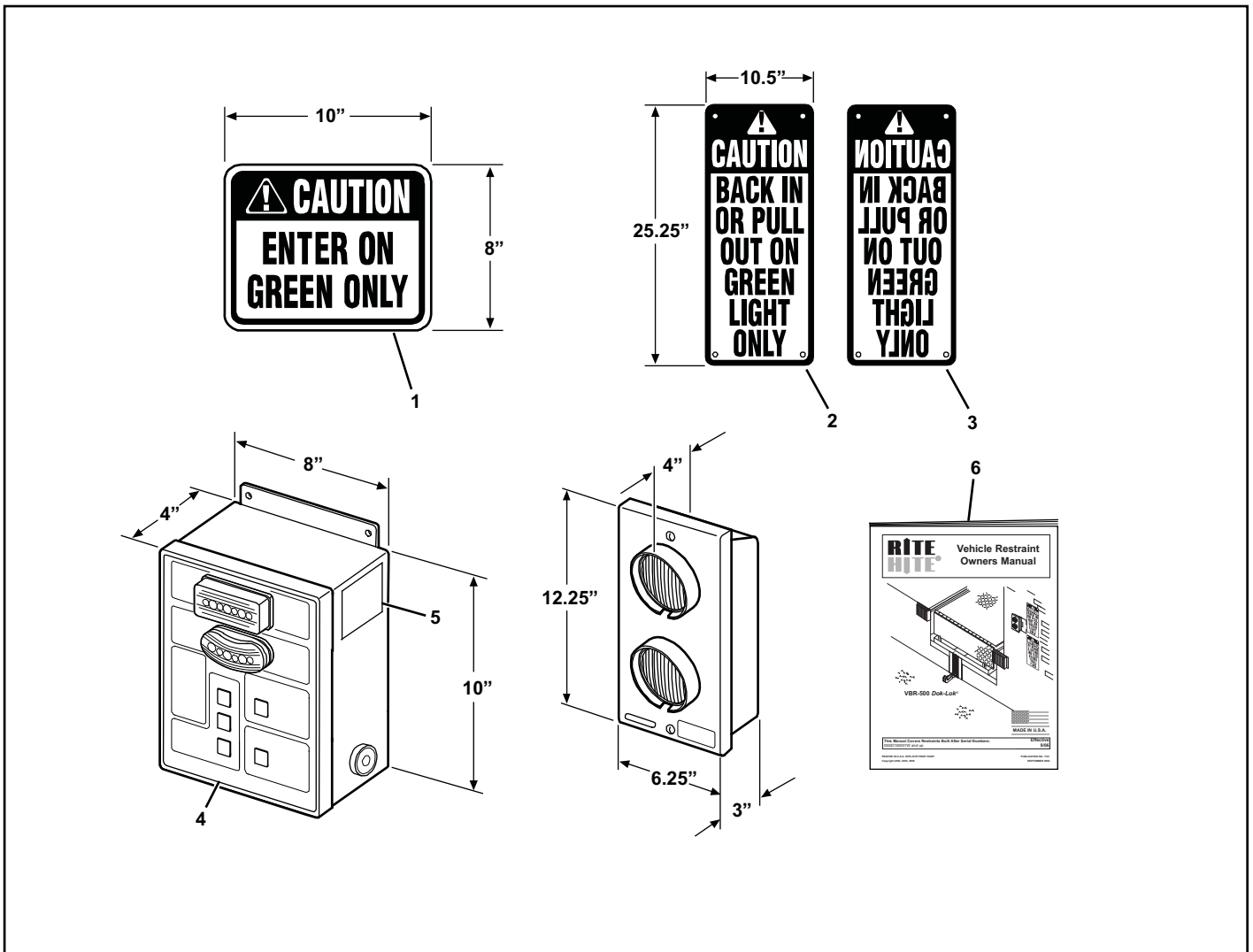
## HYDRAULIC MANIFOLD REPLACEMENT PARTS - Vertical Leveler



Item	Qty	Description	Part Number
1	3	Solenoid Coil	118553
2	1	Valve - Solenoid 1	118548
3	1	Valve - Solenoid 3	118549
4	3	Straight Hydraulic Fitting #4	117513
5	3	Straight Hydraulic Fitting #6	117514
6	3	Hirschmann Plug Rect. & Harn. Assy.	117575
7	1	Valve - Solenoid 2	118548
9	2	90Deg. Hydraulic Fitting, #4 SAE(M) #6 JIC(M)	55267
10	1	#4 JIC Female Cap	118656
11	1	#6 JIC Female Cap	118658
12	1	Dok-Lok Manifold Complete, Combo Unit - Vertical Leveler (Incl. valves & sol.)	119168



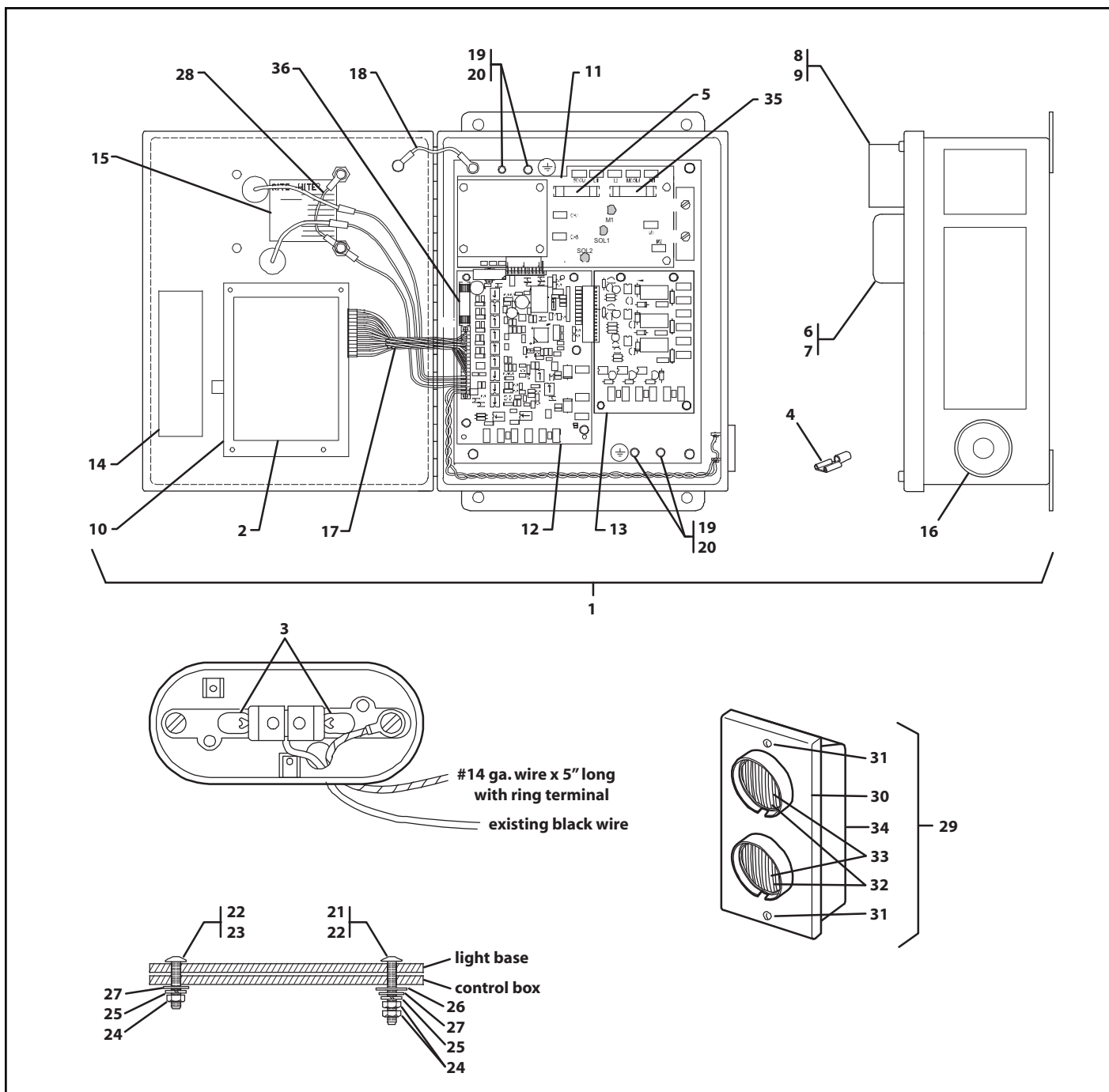
## MISC. PARTS



## MISCELLANEOUS REPLACEMENT PARTS LIST

Item	Qty	Description	Part Number
1	1	Interior Warning sign	56095
2	1	Narrow sign (normal letters)	56112
3	1	Narrow sign (reverse letters)	56113
4	1	Cover decal - 5 button - VBR-500	105424
5	1	Lockout/tagout warning decal	105430
6	1	VBR-500 Owner's manual (Publication No. 1190)	Pub. No. 1190

# ELECTRICAL REPLACEMENT PARTS



**ELECTRICAL REPLACEMENT PARTS LIST**

Item	Qty	Description	Part Number
1	1	Control box assembly, complete (Consult RITE-HITE for specific part)	103.xxx
2	1	Electrical schematic decal (Consult RITE-HITE for specific part)	108.xxx
3	2	Inside red LED bulbs	116363
	2	Inside green LED bulbs	116364
	4	Light bulb (#194 - Incandescent)	55768
4	16	Insulated female terminal 1/4", 14-16 awg	55726
5	1	Fuse, 1amp 250volt fast blo	107571
6	1	Inside signal light, green assembly	55742
7	1	Inside signal light, green lens	55812
8	1	Inside signal light, red assembly	57803
9	1	Inside signal light, red lens	57840
10	1	Push button module, 5 button – includes mounting hardware	105436
11	1	Combo Power module – includes subplate & mounting hardware	105444
12	1	CPU module – includes mounting hardware	118657
13	1	Options module, not included in STANDARD control box assembly	105448
14	1	Program configuration decal (Consult RITE-HITE for specific part)	107.xxx
15	1	Full Load Amp and Voltage Decal (Consult RITE-HITE for specific part)	110.xxx
16	1	Horn, 12VDC	57383
17	1	Wiring harness	105460
18	1	Grounding harness	105456
19	4	Screw, panhead (#10-32 x .250)	105455
20	4	Lock washer, internal tooth #10	51828
21	1	Screw, round head #8-32 x 1.00 (red light only)	51656
22	2	Screw, round head #8-32 x .75	51672
23	1	Screw, round head #8-32 x .50 (green light only)	51645
24	6	Nut, hex (#8-32)	51538
25	4	Lock washer, external tooth #8	51760
26	2	Washer, nylon 0.26 ID x 0.75 OD x 0.10 thk	53164
27	4	Bushing, nylon	53147
28	1	Common wire, light assembly	108179
29	1	Outside light box LED, complete	115798
	1	Outside light box, complete (Incandescent)	18280
30	1	Outside light box cover LED, with lamps & lenses	128458
	1	Outside light box cover, with lamps & lenses (Incandescent)	18278
31	2	Screw, round head #6-32 x 3/4" Long	18364
32	1	Outside red LED bulb	128448
	1	Outside green LED bulb	128449
	2	Light bulb (GE #1156 - Incandescent)	57187
33	2	Lamp socket assembly	57186
34	1	Outside light box, NEMA 3R, (without cover)	18277
35	1	Fuse, 4 amp 250v slow blo	*
36	1	Fuse, 4 Amp	119018

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#### **Global Sales & Service Office:**

**RITE-HITE**  
**8900 N. Arbon Drive**  
**P.O. Box 245020**  
**Milwaukee, Wisconsin 53224**

**Phone: 414-355-2600**  
**1-800-456-0600**  
**[www.ritehite.com](http://www.ritehite.com)**

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