Vehicle Restraint Installation Manual

VBR-300 Dok-Lok®
Hydraulic Vehicle Restraint

VBR-300M Dok-Lok®
Manual Vehicle Restraint

VBR-300ALP Dok-Lok®
Manual Vehicle Restraint With Automatic Light Package

This Manual Covers Restraints Built After Serial Numbers:
VB3001000 and up
TABLE OF CONTENTS

NOTICE TO USER ................................................................................................................................. 2
SAFETY WARNINGS ............................................................................................................................... 3
INSTALLATION INSTRUCTIONS ........................................................................................................... 4
STANDARD WARRANTY ............................................................................................................................ BACK COVER

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 the Rite-Hite Company, LLC at 414-355-2600.

The Rite-Hite products in this manual are covered by one or more of the following U.S. patents: 5,271,183; 5,323,503; 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; 6,092,970; 6,106,212; 6,116,839; 6,190,109; 6,220,809; 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; 6,524,053; 6,634,049; 6,726,432; 6,773,221; 6,832,403; 6,880,301; 6,892,411; 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; 7,841,823; 7,877,831; 7,823,239; 8,006,811; 8,065,770; 8,141,189 and pending U.S. and foreign patent applications. RITE-HITE®, LEVEL-RITE®, THINMAN™, SAFE-T-LIP®, HYDRACHEK®, WHEEL-LOK™, DOK-LOK®, DUAL-DOK®, SAFE-T-STRUT™, DOK-COMMANDER®, JUMBO™, HYDRA-RITE™, SAFE-T-GATE™, and SMOOTH TRANSITION DOK SYSTEM™, are trademarks of Rite-Hite® Company, LLC.
SAFETY WARNINGS

LOCKOUT/TAGOUT PROCEDURES
The Occupational Safety and Health Administration (OSHA) requires, in addition to posting safety warnings and barricading the work area (including, but not limited to, trucking office and loading docks), that 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® does not recommend any particular lockout device, but recommends the utilization of an OSHA approved device (refer to OSHA regulation 1910.147). RITE-HITE® 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.

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

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.

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

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 damage.
Follow the seven (7) step installation procedure below:

1. Inspect DOK-LOK vehicle restraint materials.
2. Assemble track to base.
3. Install DOK-LOK vehicle restraint to dock face.
4. Install electrical components.
5. Assemble operating bar and install bracket.
6. Install signs.
7. Test operation.

INSPECT DOK-LOK MATERIALS
(ALL MODELS)

1. Open and inspect all materials. Immediately report any damage or material shortage. Study component assemblies and determine their proper locations.
ASSEMBLE TRACK TO BASE
(ALL MODELS)

The VBR can be assembled with a 29” or 27” maximum height. Refer to the Rite-Hite application information provided with the VBR for correct height. Follow the steps below to assemble roller track to the base.

1. Remove tape securing the barrier rollers to the barrier. See figure 3.

2. Position barrier in the bottom of the roller track with barrier rollers installed.

3. Attach base to roller track using (2) 3/4” bolts and nuts (supplied by others). Use bottom set of holes for a 29” mounting height and top set of holes for a 27” mounting height. Verify track is perpendicular to base.

4. Weld plates on base to roller track as shown in Figure 4.

5. Remove bolts used in Step 3.

IMPORTANT

- A plumb roller track plate is required. If the dock face is not plumb/perpendicular, contact your Rite-Hite representative or Rite-Hite at (800) 456-0600.
- The carriage roller track cannot be bent or deformed. Straighten or replace as required.

Install DOK-LOK vehicle restraint onto dock face at specified location by welding to an embedded steel plate or by using the eight (8) concrete anchors provided in conjunction with welding to pit steel and a leveler frame. Refer to Figure 5.

NOTE: Some mechanical dock levelers have an adjusting nut access hole in the leveler front subframe. If the VBR vehicle restraint roller track interferes with the access hole, the track plate must be cut to allow access. Refer to Figure 8, page 8.

NOTE: Some levelers may be slightly recessed within pit. A shim must be inserted between the roller track plate and the leveler front subframe and then must be welded in place. Refer to Figure 9, page 8 for adding a necessary lip guide.
ANCHOR INSTALLATION INSTRUCTIONS
(ALL MODELS)

1. Put DOK-LOK vehicle restraint in place.
3. Insert anchor and drive flush with roller track plate, making certain that the threaded wedge is put in first. Do not disassemble anchor prior to installation.
4. Install all anchors and torque to 60 ft-lbs. See figure 5.

IMPORTANT

Eight (8) concrete anchors are provided with each VBR Dok-Lok vehicle restraint. You must install an anchor in each roller track plate hole except those plug-welded to embedded steel.

FIGURE 5 - ANCHORING ROLLER TRACK PLATE
WELDING INSTALLATION INSTRUCTIONS
(ALL MODELS)

If the installation being worked on is a “reinstallation” the following electrical connections must be disconnected prior to welding. Make sure to LOCKOUT/TAGOUT the power at the fused disconnect, then remove sensing switch connections from control box. Once all welding procedures have been completed, reconnect all wires.

NOTES:

a. Plug weld all holes that are in contact with embedded mounting plate. All eight (8) holes must be either plug welded or anchored. See figure 6.

b. If any of the mounting holes can not be plug welded, use anchors at these locations. Follows steps #2 - #4 in the anchor installation instructions.

c. Shims must be the full length of the roller track mounting plate. Minimum electrode must be 1/8" 7018 or better. See figure 6.

d. Never install Dok-Lok vehicle restraint directly onto concrete block or brick dock face. See figure 6.

e. When welding Dok-Lok vehicle restraint, disconnect power and ground leads to leveler. See figure 6.

f. Due to actual conditions, total mounting height may be different. Refer to Rite-Hite Application Guidelines for actual mounting height. See figure 6.
INSTALLATION INSTRUCTIONS CONT.

SPECIAL APPLICATION INSTALLATION
(ALL MODELS)

NOTE: Shim as required behind track angles (1/2” thick minimum bar stock) and weld in place. See figure 9.

INSTALL HYDRAULIC COMPONENTS
(VBR-300 ONLY)

1. Mount hydraulic power unit on dock wall as shown in Figure 2, page 4 using supplied mounting bracket (hardware supplied by others). Power unit must be mounted on side shown and within 24” of control box. If control box is mounted on the other side of the dock pit, a junction box will be required. Wiring from the power unit to control box will be routed over the dock doorway.

2. Drill two holes through dock wall for hydraulic hoses to pass through. Make sure holes are free of debris or sharp edges prior to passing hoses through wall. Conduit may be required in some applications to protect hoses.

3. Route hoses from DOK-LOK vehicle restraint, through dock wall and connect to hydraulic power unit.

4. Secure hoses to dock face to prevent possible damage. Any extra hosing should be coiled and secured to the inside dock wall below the power unit.

FIGURE 8 - ROLLER TRACK - FRONT VIEW

Cut Roller Track As Required*

FIGURE 9 - ROLLER TRACK - SIDE VIEW

NOTE: Shim as required behind track angles (1/2” thick minimum bar stock) and weld in place. See figure 9.

IMPORTANT

Add length to lip guide as required (supplied by others). Weld in place as shown in Figure 9. Do not weld to leveler front frame angle.

FIGURE 10 - INSTALLING HYDRAULIC COMPONENTS
ASSEMBLE OPERATING BAR AND INSTALL BRACKET - (VBR-300ALP & M ONLY)

1. Assemble operating bar as shown. See figure 11.

Mount operating bar bracket next to the control box (hardware supplied by others). Hang operating bar when not in use.

CONTROL BOX AND CONDUIT INSTALLATION PROCEDURES

1. Install the control box on a wall adjacent to the overhead door at approximately 48" above the floor level. See Figure 13.

2. Drill a hole for the power supply conduit (by others) in the bottom of the control box. All holes drilled through the control box must be through the bottom of the box.

CONTROL BOX AND CONDUIT INSTALLATION PROCEDURES.

1. Install the control box on a wall adjacent to the overhead door at approximately 48" above the floor level. See Figure 13.

2. Drill a hole for the power supply conduit (by others) in the bottom of the control box. All holes drilled through the control box must be through the bottom of the box.

- When drilling holes in the box, DO NOT allow the drill to go too deeply into the box. Damage to the control systems may occur.

- DO NOT turn control box upside down to drill any access holes. Cover internal electrical components prior to drilling - this will prevent debris from contacting the internal electrical components.

- Remove all debris from box using a shop vacuum. NEVER use air to blow debris from the control box.

- The control box and all wiring should be installed by a qualified electrician in accordance with all national and local electrical codes.

- If rigid conduit is installed, bonding must be maintained between conduit connections by using ground bushings and a jumper wire.

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.
INSTALL ELECTRICAL COMPONENTS
(ALL MODELS)

If the incoming electrical power for the Dok-Lok vehicle restraint is taken from a nearby electrical appliance, i.e., overhead door opener, verify that the amperage is in accordance with local and federal codes.

The VBR-300 Dok-Lok vehicle restraint requires 120V, single phase power, 60 Hz power and 10 amps of current, for the 1/3 HP hydraulic power unit, to operate properly. Two (2) Dok-Lok vehicle restraints can be hooked into one (1) 20 amp branch circuit breaker per the 1999 National Electrical Code Paragraph 430-53.

The VBR-300ALP & M Dok-Lok vehicle restraints require 120V, single phase, 60 Hz power and 1 amp of current to operate properly. Ten (10) Dok-Lok vehicle restraints can be hooked into one (1) 20 amp branch circuit breaker per the 1999 National Electrical Code Paragraph 430-53.

When in doubt, call your RITE-HITE representative or RITE-HITE at (800) 456-0600.

The DOK-LOK vehicle restraint assembly includes a control box with lights and the outside signal light box. The VBR-300 Dok-Lok vehicle restraint assembly also includes a hydraulic power unit. The outside junction box, conduit fittings and wire are provided by others. Refer to Figure 13, page 11 for component location information. Refer to electrical schematics found inside the control box for wiring information.

FILL AND BLEED HYDRAULIC SYSTEM
(VBR-300 ONLY)

1. Fill reservoir using supplied hydraulic fluid.
2. Press and hold service button inside control box until horn chirps. See figure 12. Controls are now in FILL mode. Holding the LOCK or UNLOCK button will run the pump up or down.
3. Cycle the Dok-Lok vehicle restraint up and down to remove air from the system. Add remaining hydraulic fluid. Stop cycling once the barrier travels the full length of the track without hesitation.
4. Press service button inside control box to exit FILL mode.

CONTROL BOX INSTALLATION
GUIDELINES - TEMPERATURE CONTROLLED APPLICATIONS.
(ALL MODELS)

a. Conduit should be routed to enter through the bottom or side of the enclosure. A drip leg may be needed if the conduit could fill with water.

b. Seal the conduit in any location where the conduit transitions temperature zones that may produce condensation.

c. Spacers should be installed between the enclosure and the wall to provide tempature insulation and air flow.

NOTE:
You must wait one minute to exit Service Mode.
INSTALL SIGN (ALL MODELS)

There are two (2) driver warning signs and one (1) inside operator sign supplied with each Dok-Lok vehicle restraint. Because of the many ways signs can be mounted, hardware is not supplied. Mount both outside signs on the right hand side of the Dok-Lok vehicle restraint. The mirror-image sign is usually mounted above the lower sign and near the outside signal lights. (Mirror-image permits the truck driver to read sign from truck mirror.) Mount the inside sign next to the control box. All signs must be installed.

NOTES:

a. Some docks may have dock/truck seals (or shelters) installed or planned which are larger than standard. Outside light, sign location, and mounting should be studied before proceeding to avoid interference. See figure 13.

b. If required for special reasons, signs may be trimmed for fit. NEVER cut or eliminate sign letters/words. See figure 13.

c. Attach signs with concrete anchors or screws. Nails are not acceptable. See Figure 13.

d. NEVER put conduit in front of signs. A clear view of both exterior signs and the single interior sign must be maintained at all times. See figure 13.

e. Secure R.I.G. sensor wire to wall. Make sure wire is secured so barrier can travel the full length of the track.

FIGURE 13 - SUGGESTED COMPONENT LOCATION
RITE-HITE STANDARD WARRANTY

Rite-Hite warrants that its products will be free from defects in design, materials, and workmanship for a period of 365 days from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can, with reasonable care, be detected and in no event more than 30 days after the warranty has expired. In order to be entitled to the benefits of this warranty, the products must have been properly installed, maintained, and operated within their rated capacities and/or specified design parameters, and not otherwise abused. Periodic lubrication and adjustment is the sole responsibility of the owner. This warranty is Rite-Hite’s exclusive warranty. RITE-HITE EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. Non-standard warranties, if any, must be specified by Rite-Hite in writing.

In the event of any defects covered by this warranty, Rite-Hite will remedy such defects by repairing or replacing any defective equipment or parts, bearing all the costs for parts, labor, and transportation. This shall be the exclusive remedy for all claims whether based on contract, negligence, or strict liability.

LIMITATION OF LIABILITY

RITE-HITE SHALL NOT IN ANY EVENT BE LIABLE FOR ANY LOSS OF USE OF ANY EQUIPMENT OR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER FOR BREACH OF WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.