4XLift™ Four Post Mechanical VRC
Installation, Operation, Maintenance & Parts Manual

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Thank you

We know that in today’s competitive marketplace, customers have many choices when purchasing products. We appreciate your choosing Wildeck’s high quality industrial product and know you have made a wise decision.

Our continued reputation as one of the top manufacturers of industrial products rests with the satisfaction of each and every customer. Wildeck products are Crafted with Confidence by employee owners in Waukesha, Wisconsin, USA. Should you have any questions or require installation assistance, please do not hesitate to contact your local Wildeck representative or Wildeck’s customer service department at 1-800-325-6939.

Thank you for allowing Wildeck to serve your needs.
Tools and Equipment Required
To Install Wildeck Mechanical VRC Units

Welding machine and equipment (helmet, gloves, rods, etc.)
Cutting torch with full tanks
2000 lb. capacity forklift (or alternative)
Chain fall and/or come-a-long
1000 lb. capacity cables or hook chains
Disk grinders
“C” clamps
Hammer drill
Drill bits for 1/2” and 3/8 x 3-1/2” long minimum anchor bolts
1/2” drive socket set with sockets to 1-1/8"
Extension cords
Sledge hammer
Allen wrenches to 3/8"
Open end wrenches to 15/16"
Drift punch
5/8-11” N.C. tap
Carpenter’s square
Chalk line
Plumb bob
Grease gun
4’ level
25’ measuring tape
Hacksaw
Vertical Reciprocating Conveyor (VRC) Bracing and Supports

Wildeck® Inc., supplies support bracing at each level as indicated on the General Arrangement Drawing prepared for each application. Also, see Bracing Section of this manual for bracing options.

This bracing is especially designed to allow a specified gap between the platform carriage and floor at each level, with the provision that the bracing is properly anchored to structurally sound flooring and/or support members.

**RECOMMENDATION:** Prior to installing your Wildeck® VRC, a qualified installation contractor should inspect the designated site to verify that the structural integrity and composition of walls and flooring are suitable for proper support and alignment.

If you have any questions regarding the structural integrity of your proposed VRC location before proceeding with installation procedures, contact your authorized Wildeck® distributor or contact Wildeck® Inc. (Phone: 262/549-4000 or Fax 262/549-7703).

**SUGGESTION:** If possible, the VRC installer should have available some lengths of angle iron (2 inches x 2 inches x ¼ inch) and channel iron (4 inches x 5.4 lb./ft.) for those situations when on-site retro-fitting is unavoidable. Also, pieces of flat steel (1/8 inch to 1/4 inch thick) for shimming and (3/8 inch to ½ inch thick) for footings and supports.
Installation Overview

There are two methods of installing your Wildeck® Inc. VRC. Each method is recommended and equally efficient.

Please review the following outline of each method as related to the skill and preference of your installers, availability of necessary installation tools and equipment (See Page A-1 for complete list.), and working space available.

Method 1

1. Review General Arrangement Drawing and custom owner’s manual that includes detailed parts identification for specific application.

2. Make accurate positioning measurements at upper and ground levels.

3. Position carriage unit according to upper floor measurements.

4. Install wheelblocks in beams, raise beams into position, bolt wheelblocks to carriage.

5. Bolt drive unit into position on top of beams.

6. Measure beams for proper distance and plumb accuracy.

7. Secure to floor.

8. Re-check measurements and plumb accuracy, proceed with bracing, final welding, and final adjustments.
**Method 2**

Method 2 does not require the carriage unit to be in position throughout the assembly process as indicated by Method 1.

The VRC beams may be assembled without the carriage in position provided that your upper level and ground level measurements and plumb procedures are absolutely accurate.

You may consider positioning the carriage unit as per Method 1 to double-check your upper and lower level measurements, and to visually inspect for existing or potential obstructions within the travel path of the unit once installation is completed. The carriage unit may then be removed to provide more space for beam and bracing installation.

*NOTE:* The carriage must be in place and attached to the wheelblocks before final welding and anchoring is started.
Fundamental Points Regarding the Installation of Your Wildeck VRC

The building structure must be strong enough for anchor and support the VRC.

- **Recommended** (minimum 4 inches x 5.4 lb./ft. or stronger) channel iron bracing must be included at each lift level.

- **Bracing must be securely anchored to the building.**
  
  Anchoring into block, brick, or stud-type walls is unacceptable.

  Anchoring into wood floors or wood supports should be avoided.

  Through-bolting with steel plate backup plates is the only recommended procedure when anchoring into wood is unavoidable.

- **All hardware must be installed as securely as possible.**
  
  Use plate steel backing plates whenever necessary to eliminate all potential pull-out conditions.

  Perpendicular shear strength of concrete anchors, lags, or bolts attached to bracing should be utilized to avoid hardware being pulled straight out of support structures.
Wildeck VRC Beam and Bracing Installation
Following Method 1 Outline

1. Carefully uncrate your Wildeck VRC. Identify and match all of the beams, braces, mechanical and electrical components, fasteners, etc. with the parts list provided.

   Contact your Wildeck distributor or Wildeck, Inc., (Phone 262/549-4000 or Fax 262/549-7703) immediately if any part is missing, damaged, or not specified by the Parts List.

   Do not proceed with installation procedure until your part count is complete and accurate or authorization to proceed is granted.

2. Wildeck provides a General Arrangement Drawing that includes the specific dimensions to insure proper VRC installation and operation.

   The measurements you make—upper level opening, floor-to-floor distance, pit depth, etc.—must be exactly as shown on the General Arrangement Drawing.
Accurate Measurements Are Essential

1. Second Level Opening

Refer to your General Arrangement Drawing and lay out the second level opening.

A. Determine the location of the lift at upper level.

B. Measure and mark each outside dimension per General Arrangement Drawing. (This is the overall carriage width dimension.)

C. Measure and mark the center point of the upper level opening.

REFER TO FIGURE #1

2. Drop a plumb line one (1) inch out from center point mark at upper level.

**NOTE:** One (1) inch is a standard distance. Deviations may exist for specific installations. Check your General Arrangement Drawing for exact distance.

**REMINDER:** Plumb lines must clear all wall protrusions or any other interference that the carriage must clear after installation.

3. Mark plumb bob tip contact point clearly on lower level floor.

REFER TO FIGURE #2
FIG. 1

OUTSIDE MARK

MARK CENTER POINT HERE

OUTSIDE MARK

LOCATE THE CENTER LINE OF THE CARRIAGE PLATFORM AND/OR OPENING ABOVE. MARK IT CLEARLY.

FIG. 2

1" SPACER

UPPER LEVEL

PLUMB LINE

MARK TIP CLEARLY

SIDE VIEW

1" SPACERS

UPPER LEVEL

PLUMB LINE

MARK TIP CLEARLY

FRONT VIEW
Accurate Measurements Are Essential, continued

4. Drop plumb lines one (1) inch out (or specified distance) from each upper level outside mark.

5. Mark each plumb bob tip contact point clearly on lower level floor.

6. Use a chalk line to snap a line through each outside dimension mark.

**IMPORTANT:** The carriage will be aligned with this line. The center point mark must be on the line snapped between the outside dimension marks. Repeat Steps 2 - 6 if necessary until accurate three-point alignment is reached.

REFER TO FIGURE #3

7. Measure and mark the center point of the carriage platform.

8. Position the carriage as shown on the General Arrangement Drawing. The center point mark on the building floor (Step 3) must align with the center point of the carriage platform. The edge of the carriage platform must coincide with the line snapped on the floor to mark the overall carriage width (as illustrated in Figure 3).

9. Note: If the lift penetrates a floor, or clearances are tight, the carriage may be positioned after the beams have been installed and raised in place. (As described in Method 2.)

REFER TO FIGURE #4
Fig. 3

- Mark each plumb bob tip clearly on lower level.

- Use a chalk line to snap a line through each mark.

- Note: the carriage will be aligned to this line.

Fig. 4

- Align carriage on chalk line and outside marks.

- Overall carriage width.

- Outside mark.

- Plumb lines.

- Mark tips clearly.

- Lower level.
Main Beam Installation

1. Position upper wheelblocks into beams.

   **NOTE:** *Hold safety cams in to prevent engagement.*

2. Slide each wheelblock down the beam until it is approximately one foot from the bottom of the beam. The wheelblock should be positioned in alignment with the mounting holes of carriage.

3. Remove all 5/8 inch hex head bolts from the four (4) wheelblocks.

4. If possible, run a 5/8 - 11 tap through all threaded wheelblock mounting holes for easier fastening. (Not necessary if threaded holes are clean.)

REFER TO FIGURE #5
Main Beam Installation, continued

5. Raise right front beam into position.

**WARNING:** *It is the responsibility of the installer to properly lift and secure beams, bracing, and components in a safe manner. The illustrations used in this manual may not show all of the tools and auxiliary equipment recommended by Wildeck on Page 1 of this manual for proper and safe installation, or all of the techniques that may be required by installers to accomplish certain tasks.*

Contact your authorized Wildeck® distributor or Wildeck, Inc., (Phone 262/549-4000 or Fax 262/549-7703) should any problem or question arise during any phase of the installation process.

6. Slide beam alongside carriage and align wheelblocks with mounting holes.

7. Bolt carriage to the wheelblocks using the bolt previously removed (Step 3). Make sure bolts are secure.

**WARNING:** *Carriage alone will not support beams. Make sure beams in upright position are always supported and held in place throughout installation process.*

**NOTE:** *Carriage platform uprights requires 1/8 inch shims for proper spacing of wheelblocks.*

8. Make sure right-side beam is secured and adequately supported.

9. Repeat Steps 5 - 8 to raise and secure the three (3) other beams. All warning messages and note information applicable to Steps 5 - 8 apply.

REFER TO FIGURES #6A, 6B, 6C

Note: Each of the 4 columns are different ("front", "rear", LH & RH) Refer to your "general arrangement" drawing for the column piece-mark needed for each corner of the VRC. (piece-marks are located on the bottom of each column's base plate)

Note: For spliced columns, see page A-16 for welding detail
NOTES:
1.) TUBE STEEL IS NOT USED ON HYDRAULIC UNITS.
2.) ALL WELDS SHALL BE MADE BY AN A.W.S. CERTIFIED WELDER.
3.) BEAM MUST BE KEPT STRAIGHT.
   CHECK WELDED BEAM TOP TO BOTTOM, WITH A STRING LINE.

GRIND SMOOTH, INSIDE WHEEL HALF ONLY

NO BURN-THRU ALLOWED

GRIND SMOOTH, BOTH SIDES

DO NOT WELD THESE INSIDE FACES OF BEAM & ANGLE
SHIMS ARE REQUIRED ON ALL (4) WHEELBLOCKS
(4) SHIMS ARE SHIPPED LOOSE

NOTE:
IT IS THE INSTALLER'S OPTION
TO BOLT OR FIELD WELD BRACES.
**Upper Support Framing**

**Remember:** Front of unit is the side the guide angles are facing.

1. Install the top side-to-side braces across the front two (2) and rear (2) beams. Both side-to-side braces are interchangeable. Use (8) 5/8-11 x 2” bolts with nuts, washers, and lock washers for attachment.

2. Install the top front-to-rear braces on the right and left sides of the unit. These braces are not interchangeable, the motor mounting tabs are offset toward the rear of the unit. Again, use 5/8” hardware for attachment.

**REFER TO FIGURE #7**

3. Most units will have corner braces for the upper support framing. These four (4) pieces are interchangeable and will mount with 5/8” hardware.

**REFER TO FIGURE #8**
Alignment of Main Beams

1. Measure the distance between left side to right side at lower level. This dimension should be 2-5/8" greater than the overall carriage width. This is the guide angle to guide angle (G.A. to G.A.) dimension shown on the general arrangement drawing.

   **NOTE:** If 1/8-inch shims are supplied with carriage platform, include them in the overall width dimension.

   **NOTE:** The guide angle to guide angle dimension should be checked between both the front set and the rear set of beams. The beam spacing should also be checked from the front to rear on each side of the lift.

   **IMPORTANT:** Measure diagonally between the beams to make sure the unit is square.

2. Move to upper level and set beams to the same distance.

3. Level the carriage and set the spacing between wheelblock guide rollers and guide angle at 1/8 inch. Use shims if necessary.

4. Plumb each beam and recheck spacing.

5. Anchor or weld floor-to-beam braces into position. (For special applications, see Bracing Section of this manual and your general arrangement drawing)

6. Recheck beam with plumb line and/or level. Make sure beams are not twisted or bent.

7. Anchor beams to floor using ½” diameter anchors 4-3/4” long (4 per beam).

   **NOTE:** Depth of holes for anchors should always be deeper than the length of the anchor.

REFER TO FIGURES #9A and 9B
1/8" SPACER USED WITH 6" CHANNEL CARRIAGE UPRIGHTS ONLY

CARRIAGE UPRIGHT CHANNEL (6" SHOWN)

GUIDE ROLLER

GUIDE SHOE

GUIDE ANGLE

1/8" BETWEEN GUIDE ROLLER AND GUIDE ANGLE (TYPICAL)

4-POST LIFT

FIG. 9A

1 5/16" OVERALL CARRIAGE WIDTH

1 5/16" BEAM SPACING FRONT TO REAR

DISTANCE BETWEEN FACES OF GUIDE ANGLES

FIG. 9B
Drive Mechanism

1. Once the framing is secure, raise the four (4) corner sprocket assemblies to the top of each beam and secure them with 5/8"–11 x 2" bolts and hardware. The front sprocket assemblies are the wider ones. Make sure that assemblies are oriented so the nylon guide blocks are above the chain return tubes of the main beams.

2. Raise the main motor unit above the upper support framing and secure it to the mounting plates with 5/8" bolts. The motor side of the drive unit should be oriented toward the front of the lift.

NOTE: Lifting methods will vary based on overhead clearances and other site conditions. It is the installer’s responsibility to raise the drive components safely. Contact your authorized Wildeck distributor or call Wildeck, Inc. (414) 549-4000 if you have questions or problems.
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Chain Assembly and Installation

1. Locate the four (4) lengths of heavy chain which connect the corner sprocket assemblies to the center drive unit. These chains will be approximately as long as the carriage.

2. Begin installation of each chain on the center drive shaft. This shaft is connected to the motor brake and will not turn from the weight of the chain.

3. While holding one end of the chain center drive shaft sprocket, roll the chain around the large sprocket of the corresponding corner.

   **NOTE:** Outer two sprockets on the center shaft should line up with the large sprockets at the rear of the unit. The inner two sprockets will line up with the large sprockets at the front of the unit. Refer to previous figures 10, 11, and 12 for illustration of chains.

4. Use a master link to connect the ends of the chain into a full loop. A chain puller tool may make this task easier.

**Vertical Chains**

   **NOTE:** You will be unable to install the vertical chains until after the upper chains are in place. The upper chains will be holding the corner shafts from turning so that the vertical chains can be hung from them.

5. Locate four (4) heavier lifting chains and four (4) smaller tension chains.

6. Attach chain connection block to one end of the larger lift chain using a master link.

7. Attach a chain swivel to the other end of the lift chain using a master link.

8. Attach the tension chain to the other side of the swivel with the 1-3/4" (larger) S-hooks. Crimp both sides to the S-hook closed with a pliers.

**REFER TO FIGURE #13**
Blank Page Provided For Your Notes
9. Remove the nylon guide block from the corner sprocket assembly.

10. Raise chain up over the corner sprocket. Drop larger lift chain down through the center of the beam to the wheelblock. Drop the smaller tension chain through the return tube on the back of the beam.

11. Reinstall the nylon guide on the corner sprocket assembly. Once installed, the nylon guide will prevent the chain from coming off the sprocket.

12. Install chains on each of the four corners following the same procedure.

   NOTE: The length of all four (4) chains must be the same. Reposition the chains on the sprockets until all chains are of equal length.

13. Remove cotter pins on wheelblocks and secure chain connection blocks to each wheelblock. Install new cotter pin.

14. Slip smaller tension chain around sprocket on the tensioner unit. Attach the end of the tension chain to the carriage using smaller 1-3/8” S-hook and eye-bolt as shown in previous diagram. Refer to chain tension limit switch section of this manual for information on tensioner installation and adjustment.
Upper Chain Tensioners

1. Bolt the tensioner towers to the upper framing of the lift. Use 3/8"-16 x 1-1/2" bolts with nuts, washers, and lock washers. The high towers should be located in the rear of the lift and the low towers in the front.

2. Locate four (4) tensioners and sprockets and assemble using long bolt (packaged with tensioner) and 3/4"-10 hex nuts. Bolt into the hole nearest the end of the tensioner arm.

3. Locate left-hand and right-hand tensioner rings and position them at the proper tower positions as shown in the diagram. On the left side of the lift, the tensioner rings will both be the same but will be oriented in different directions.

4. Using the short bolt and lock washer packaged with each tensioner, bolt through the tower and the center hole of the tensioner ring into the base of the tensioner. Do not fully tighten this bolt until the tensioner has been adjusted.

5. Put a large pipe wrench on the square base of the tensioner unit and rotate it so that the sprocket is in contact with the upper chain. Continue rotating the tensioner to apply as much force on the chain as possible. When the unit cannot be rotated any further, lock the tensioner in place by bolting through the tensioner tower and one of the outer holes of the tensioner ring.

REFER TO FIGURE #14
Upper Chain Tensioners, continued

6. Attach limit switches to each tensioner with #10-24 x ½" screws into the tapped holes of each tensioner ring.

7. Install adjustable rod switch arms such that they rest against the arm of the tensioner unit.

**NOTE:** The switches need to be installed so that in the event of a chain break, when the arm of the tensioner springs back to its neutral position, it will trip the switch and shut down the drive unit.

REFER TO FIGURE #15
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Actuator Cam Installation

1. The actuator cam mounts to the unistrut on the side of the carriage platform.

2. Place the actuator cam on the carriage so that it is centered in the unistrut and secure using unistrut spring nuts and ¼-20 x ¾” screws.

   **NOTE:** The first floor limit switch is actuated off the bottom of the carriage cam. The top floor level limit switch is activated off the top portion of that same cam.

REFER TO FIGURE #16
THE ACTUATOR CAM IS REQUIRED FOR ALL APPLICATIONS.

THE RIGHT ANGLE CARRIAGE CAM IS FOR FLOOR LEVEL GATES AND IS NOT REQUIRED FOR ALL APPLICATIONS.
2-Level Mechanical Lifts

Instructions for Locating and Mounting Limit Switches

1. Place a straight edge on the upper floor, where the beam is mounted to its support wall structure, and mark the beam at that point. This is the height where the carriage will be at floor level.

2. Measure from carriage deck to the top of limit switch actuator cam. Mark this exact distance up from the mark made on the beam in Step 1. Place the limit switch assembly so the unistrut is centered on this point. Drill and bolt unistrut mounts to the face of the beam ½” from the guide angle, using ¼-20 bolts and nuts.

   **CAUTION:** Do not weld on guide angle.

3. Install lower level unistrut bracket in the same way except center the unistrut on the bottom of the actuator cam.

4. Mount limit switches to the unistrut brackets using #10-32 x ½” screws and lock washers.

   **NOTE:** The first floor limit switch is actuated off the bottom of the carriage cam. The top floor level limit switch is actuated off the top portion of the same cam.

REFER TO FIGURE #17
Multi-Level Mechanical Lift

Intermediate Floor Level Limit Switch Installation

1. Install intermediate floor level limit switch assembly (two limit switches).

   **NOTE:** Limit switch actuation may have to be changed. Switches have to be passive in one direction:

   A. To change actuation direction, remove switch head.

   B. Turn switch clockwise to activate in clockwise direction, counter-clockwise to activate in counter-clockwise direction. There will be a “click” when switch activates.

2. The upper switch should be located such that it is triggered by the top edge of the cam. It will stop the carriage when it is moving in the **UP** direction.

   **NOTE:** The cam will pass by the lower switch before it contacts the upper switch.

3. The lower switch should be located such that it is triggered by the bottom edge of the cam. It will stop the carriage when it is moving in the **DOWN** direction.

   **NOTE:** The cam will pass by the upper switch before it contacts the lower switch.

REFER TO FIGURE #18
NOTE:
MIDDLE LEVEL(S) USE (2) LIMITS SWITCHES. THE SWITCHES ARE WIRED IN SERIES. CARRIAGE WILL STOP WHEN BOTH SWITCHES ARE TRIPPED.

FIG. 18

FIELD LOCATED MOUNTING HOLES

CONTROLS STOP POSITION WHILE TRAVELING UP.

CONTROLS STOP POSITION WHILE TRAVELING DOWN.
Chain Tension Limit Switches

Chain tension limit switches are located along side each of the tensioner units. The purpose of limit switches is to shut off power to the lift if movement of the chain tensioner slide bar occurs.

**NOTE:** The slide bar will move upward if chain tension becomes too great. It will move downward if chain tension becomes too slack.

**Installation Instructions**

REFER TO FIGURE # 19

1. Mount limit switch to switch bracket using 10-32 x ½” screws, #10 lock washers, and flat washers.

   **NOTE:** The switch bracket is reversible for installation on either the left-hand or right-hand side of the lift.

2. Install adjustable rod arm on limit switch. Arm should be in a horizontal position as shown in the diagram.

3. Slide spring up into tensioner channel which is part of the main beam assembly.

4. Install tensioner slide bar assembly (with sprocket) into channel below spring.

5. Install uni-strut nuts into channel and mount switch bracket with switch to channel with ¼-20 x ¾” bolts, ¼” lock washers, and flat washers.

   **NOTE:** The switch arm must extend through the hole in the slide bar tab.

6. Install tension chain on sprocket and adjust chain length such that the arm on the limit switch is in a horizontal position.

   **NOTE:** This should also be the neutral position of the switch.
NOTE:

CHAIN TENSIONER SWITCHES CANNOT BE ADJUSTED UNTIL CARRIAGE IS HANGING FROM MAIN LIFTING CHAINS.

TIGHTEN #35 CHAINS WITH CARRIAGE MOUNTED EYEBOLTS TO COMPRESS SPRINGS 1”. THEN, MOUNT LIMIT SWITCHES SUCH THAT THE RODS ARE IN THE HORIZONTAL POSITION. THE RODS SHOULD BE CENTERED IN THE HOLE OF THE TENSIONER TAB.

CHAIN FAULT:
#35 CHAIN IS TOO TIGHT. SWITCH IS TRIPPED. NO CONTINUITY THROUGH SWITCH.

CHAIN OK:
CONTINUITY THROUGH NORMALLY CLOSED CONTACTS OF SWITCH.

CHAIN FAULT:
#35 CHAIN IS TOO LOOSE/SPRING IS NOT COMPRESSED 1”. NO CONTINUITY THROUGH SWITCH.

FIG. 19
Chain Tension Limit Switches

Testing Instructions

1. Disconnect the tension chain from the carriage. The tensioner slide bar should drop down and activate the limit switch. Listen for a click in the limit switch to know when it has been tripped.

2. Reconnect the tensioner chain to the carriage. The limit switch should return to its neutral horizontal position.

3. While standing on the carriage, grab the tension chain and pull it toward you. This should lift the tensioner slide bar and activate the limit switch. Again, listen for a click in the limit switch to know that the switch has tripped. Release the chain and check that the switch returns to the neutral position.

4. Repeat test for tensioner on opposite side of lift.

Tension Chain Guard Installation:  (If included)

After chain tension limit switches are installed and tested, the tension chain guards should be installed. These guards cover the tension chain and keep objects away from it as it moves.

1. Align the short (1") side of the guard with the inner part of the chain tube.

2. Use 1/4-20 hardware or self-tapping screws to attach guard to main guide beam.

Refer to Figure #12B

NOTE: After an initial use period of 30-90 days, a follow-up visit should be performed to re-adjust the chain tension limit switches. The chain will stretch out during its initial use and may cause nuisance trips of the chain tension limit switches if not re-adjusted.
Overtravel Limit Switch

Installation Instructions

1. Measure the distance from the carriage deck to the top of wheelblock shoe.

2. Measure this distance upward from the upper floor level mark made in Step 1, Limit Switch Mounting Instructions.

3. Drill and bolt limit switch bracket ½" from the guide angle so that unistrut is centered with top of wheelblock shoe, using ¼-20 bolts and nuts.

4. Position limit switch on unistrut bracket such that it will be actuated by the top of the wheelblock shoe.

**NOTE:** This switch should be adjusted so that it is not triggered during normal operation of the lift, but will prevent the carriage from hitting the drive unit if the platform fails to stop at the upper level.

REFER TO FIGURE #20
For Your Electrician

Always mount push button stations out of reach from the carriage (approximately six (6) feet).

Circuit incorporates a current-sensing, magnetic overload relay, which resets at 70 – 85% of its overload condition. Therefore, the relay must be set at 17 – 42% above an overload condition. A timer bypasses the jam relay for a nominal two (2) seconds during starting in-rush. To set the jam relay, place a maximum load on the carriage and slowly adjust the relay until it resists jamming. Adjustment instructions are provided in the control box.

Setting the Jam Relay

1. Load the carriage to capacity weight.

2. While raising the lift, adjust the jam relay until instantaneous trip current equals motor current, or until motor continues to run after the timer times out.

3. If no power is available, use calibration wires to set jam relay at no more than 90% of the motor's full load current as shown on the serial plate.

Note:
For units equipped with a text screen on the control panel, refer to the "control display keypad" manual for instructions on setting the VRC's capacity high-limit.
Lift Start-Up Procedure

1. Wire power unit and check rotation.

   **CAUTION:** Use a very short application of power. The first movement should tend to *lift* the carriage. Rotation tending to *lower* the carriage can *damage* the chain tensioning assembly and chain tensioner.

   **WARNING:** Be prepared to disconnect power immediately when powering the unit before all limit switches are installed.

   Allowing carriage overtravel in either direction can result in severe damage.

   The use of temporary power is not recommended for inexperienced installers.

2. Make sure carriage is free to rise approximately six (6) inches. Be certain that chains are equally tight.

3. Use the following procedure to level the carriage.

   A. Loosen wheelblock mounting bolts on side of carriage with the jackscrew.

   B. Using a 4’ level, determine what direction the jackscrew has to be turned to level the carriage.

   C. Turn jackscrew in appropriate direction to level carriage and fully tighten mounting bolts.

   **CAUTION:** After leveling the carriage, *do not use the jackscrew to support the carriage. Mounting bolts must be tightened.*

   REFER TO FIGURE #21
BILL OF MATERIALS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
<th>PART No.</th>
<th>SUFFIX</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>6&quot; VERTICAL UPRIGHT, 4--POST LIFT</td>
<td>1760</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>UPRIGHT CAP PLATE</td>
<td>1759</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>HHCS, 5/8--11 x 5&quot; LG. (FULL THREAD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>HHCS, 5/8--11 x 2 1/2&quot; LG.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>HHCS, 5/8--11 x 1 1/4&quot; LG.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>FLAT WASHER, 5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>WHEEL BLOCK BACKING PLATE FOR MECH. LIFT</td>
<td>1624</td>
<td></td>
</tr>
</tbody>
</table>

WHEEL BLOCK
Note:
For VRC's equipped with an approach ramp at the lower level, position and anchor the ramp as shown.
Front
Braces Must Restraining
Sideways Motion

Side
Braces Must Restraining
Forward and Backward Movement
CONCRETE FLOORS

Anchored to Face of Floor

Welded to Embedded Angle

Anchored to Floor
WOODEN FLOORS

Lag Bolted to Face of Floor – NOT PREFERRED

Through Bolted – Acceptable, but Recommend Using a Back Plate.

Bolted Thru Floor – Preferred
Through Bolted with a Back Plate
This is the **PREFERRED WAY**
to anchor to a block wall.
4–Post Lift Bracing Options

Thru Floor or Shaftway

Against a Mezzanine
Introduction

Wildeck®, Inc. manufactures mechanical vertical reciprocating conveyors to meet the highest productivity standards that industrial users demand.

These specific features provide Wildeck Lift Product users with reliable performance and outstanding, long-life value:

- Ease of operation
- Adjustable floor level limit switches
- Electrical protection
- Free-fall protection

**WARNING:** YOUR WILDECK LIFT PRODUCT IS NOT DESIGNED OR AUTHORIZED FOR HUMAN CONVEYANCE.

DO NOT ALLOW ANYONE ON THE CARRIAGE (LIFT PLATFORM) OR TO BE ENCLOSED WITHIN THE SAFETY GATE AND SCREENING PERIMETER WHILE OPERATING WILDECK LIFT PRODUCTS.

Be sure all employees designated to operate Wildeck Lift Products are thoroughly familiar with the contents of this manual before commencing operating procedures.

All Wildeck Lift Product operators should have immediate access to this manual.

Keep this manual clean and dry to maintain legibility of all information, drawings, and procedures.

Throughout Wildeck Service Manuals you will frequently find WARNINGS and CAUTIONS.

Please read all WARNINGS carefully and always obey all WARNING instructions to avoid the possibility of endangering yourself and others.

CAUTION information applies to possible equipment damage due to misuse and/or misapplication of Wildeck Lift Products.

**REMEMBER:** The potential for personal injury can result from damaged and worn equipment even when Wildeck Lift Products are properly operated.
Introduction, continued

Always keep Wildeck Lift Products properly maintained.

Never exceed lift capacity limits.

**ALWAYS:** Maintain optimum weight distribution balance when lifting and lowering loads.

**CONTACT QUALIFIED SERVICE PERSONNEL IMMEDIATELY** if damage is suspected or apparent prior to operating Wildeck Lift Products.

**WARNING:** DO NOT TROUBLE-SHOOT OR SERVICE LIVE ELECTRICAL CIRCUITS.

**ALL ELECTRICAL MAINTENANCE AND REPAIR WORK MUST BE PERFORMED BY QUALIFIED CONTROLS ELECTRICIANS ONLY.**

Wildeck, Inc. also advises the presence of additional personnel qualified in first aid training to be present while electrical work is performed.
Each mechanical lift consists of the following components and assemblies as described in the glossary.

**Drive Unit**

Electric brake motor, gear reducer, drive shaft, and sprockets.

Refer to Drawing Section, drawings:  
- #1836 Drive Base Assembly  
- #1838 Front Corner Drive Assemblies  
- #1837 Rear Corner Drive Assemblies

**Carriage Platform**

The movable platform upon which load material is located during lifting and lowering procedures.

Refer to Drawing Section, drawings:  
- #1844-IB

**Main Frame**

Two six (6) inch wide flange beam assemblies used for supporting and guiding carriage platform during operation.

Refer to Drawing Section, drawings:  
- #1840-IB Left Hand Front Beam  
- #1841-IB Right Hand Front Beam  
- #1842-IB Left Hand Rear Beam  
- #1843-IB Right Hand Rear Beam

**Upper Wheelblock Assembly**

The four roller assemblies which guide the carriage frame assembly within lift frame members. Roller assemblies also serve as a mounting point for the lift chains and safety cams.

Refer to Drawing Section drawings:  
- #1073-IB Steel  
- #1072-IB Steel  
- #1069-IB Phenolic  
- #1027-IB Phenolic
Glossary, continued

Chain Assembly

The continuous, revolving chain loops which move the carriage platform.

Refer to Drawing Section, drawing: #1321-IB

Chain Tensioner Assembly

The spring-loaded devices that keep the chain assemblies tight. Chain tensioner assemblies also contain electrical switches which shut the lift down in the event of slack or broken chain.

Refer to Drawing Section, drawing: #1295-IB Lower Tensioner Assembly
#1839-IB Upper Tensioner Tower Assembly

Carriage Leveler

The adjustable screw assembly used to match the carriage level with the level of the floor.

Refer to Drawing Section, drawing: #1845-IB

Floor Level Limit Switches

Electrical switches mounted at each floor level to determine the stopping location of the carriage platform.

Refer to Drawing Section, drawings: #1386-IB #1387-IB
Glossary, continued

Over Travel Limit Switch

An electrical switch mounted at the top of the main frame that serves as an emergency shut-off switch in the event of upper floor level limit switch failure.

Refer to Drawing Section, drawing: #1388-IB

Safety Gates and Enclosure

Safety gates and enclosures are located at each level and entrance to the carriage platform.

Electrical inter-connect switches on each gate prevent lift and lowering operations until each gate is closed and locked. Gate doors remain closed and locked when the load is not at that level.

Refer to Drawing Section on Gates and Enclosures

Control Panel

Control panel mounted near the lift contains the transformer, overload devices, and components required for lift operation.

Pushbutton stations at each level provide operation for UP, DOWN, and EMERGENCY STOP (red) operations.

Refer to Electrical Schematic

Push Button Station

A pushbutton (P.B.) station at each level provides electrical controls used to operate the lift. An EMERGENCY STOP button is also located at each P.B. station.

Refer to Drawing Section, drawing: #1389-IB
Basic Principle

Four continuous chain loops located within the main beams on each corner of the carriage platform are the primary elements, which raise and lower the carriage platform. The chain loops reach from the top of the main frame to the floor. The carriage is attached to the chain loops and moves up or down depending on the rotation direction.

Drive Unit

The drive unit, located at the top of the main frame, rotates the drive shaft, which extends to the full width of the lift. The gearbox and brake motor are located at the center of the drive shaft. Drive sprockets mounted at each end of the drive shaft mesh with the drive chains to transfer power to each of the four corners. At each corner, sprocket assemblies connect the drive chains to the lifting chains.

Brake Motor

The brake motor is located within the drive unit. When engaged, the brake locks the drive shaft in place, thereby stopping carriage platform movement. The brake releases automatically when power is directed to the drive motor, i.e., when the UP or DOWN button is pushed. A power failure or interruption will cause the brake to engage automatically. Safety switches are provided to engage the brake manually.

Drive Chain System

Four chain loops connect the main center drive shaft with the four corner sprocket assemblies. Each chain loop has a tensioner unit to keep it tight. Connected to each tensioner is an electrical limit switch to shut off the motor and engage the brake if any of the drive chains would break.
How It Works, continued

**Lifting Chain System**

The weight of the carriage is supported by the large section of the chain loop generally referred to as the “lift chain.” The “tension chain” is the smaller section of each chain loop connected to each end of the lift chain. The lift chain engages with the corner sprockets to raise or lower the carriage depending on the rotation direction of the drive shaft.

Spring-loaded chain tension assemblies are located at the bottom of the main frame and maintain optimum tension for each chain loop. An electrical limit switch mounted along each side of each assembly will break the electrical connection to the drive unit, automatically engaging the brake motor, when an over-tension or under-tension condition exists.

Over-tension in one of the chain loops will move its tensioner upward until the electrical circuit to the drive motor is broken. Slackness, disengaged chain loop, or severed chain loop will cause the tensioner to move downward until the circuit is broken.

**Floor Level Limit Switches**

Floor level limit switches are provided at each operating level. The switches stop the carriage at the desired position at each operating level by shutting off power to the drive unit, which engages the brake motor. The switches are adjustable to provide optimum platform alignment with the floor level.

**Over Travel Switch**

An over travel switch provides a safety backup to protect the unit from damage should the carriage travel past the uppermost floor level limit switch. The over travel switch, like the floor level limit switches, disconnects power to the drive unit when engaged.
How It Works, continued

**Control Buttons**

*Single Level Units:*
UP and DOWN control buttons are located at each operating level. Once one of these buttons is activated, the control circuitry prevents the other button from being activated until the carriage platform comes to a complete stop.

*Multi-Level Units:*
The numbered control buttons correspond with each stopping point for the lift. The lowest point is Level One. Pressing the level number where you are will move the carriage platform to you; pressing another level number will send the carriage platform to that floor. Once one level number button is pressed, no other level number buttons will activate until the carriage platform comes to a complete stop.

**Emergency Stop Buttons**

A red EMERGENCY STOP button is located at each operating level. The carriage platform will stop immediately when an EMERGENCY STOP button is pushed. No other button will activate until the activated EMERGENCY STOP button is pulled out to its original position.

**Free-Fall Protection**

Spring-activated safety cams attached to the upper wheelblocks on the carriage automatically stop the carriage within the first few inches of decent in the event of a chain break or an extremely slack chain condition.

**Electrical System**

The drive unit motor operates on standard plant voltage (usually 230 or 460 volt, three-phase). However, the controls and limit switches operate on the reduced voltage provided by the 24-volt transformer located in the control panel. When a control button is pressed, the low voltage circuit magnetically closes the contacts in the motor starter to provide the high voltage required to operate the motor.

The low voltage control circuit connects control buttons, limit switches, and status switches located on each safety gate. All safety gates must be closed before the lift can operate.

The electrical system also includes overload protection for the motor.
Servicing Wildeck Lift Products

**WE ADVISE:** Visual walk-around inspections prior to operation each day and/or at the beginning of each work shift to check for equipment damage and obstructions to moving parts.

Visual inspection points:

1. **Electrical system**—damaged control panel and buttons; frayed or loose wiring
2. **Worn chain**
3. **Foreign objects; litter**
4. **Be sure carriage deck is clean and dry**

**Routine Maintenance Procedures**

Wildeck Lift Products require scheduled maintenance such as lubrication, minor adjustments, and periodic inspection of key components.

We recommend that you establish a maintenance schedule system and keep a record of all maintenance activity. Refer to schedule for suggested service intervals and to the Servicing Location Schematic Diagram.

**Lift and Tension Chains**

Inspect for evidence of wear or breaking, kinking, and excessive corrosion. Be sure connections are tight and sprockets are not damaged.

Proper lubrication of roller chain components is vital for optimum performance and long life. Wear between the pin and bushing causes the roller to stretch. The gap between the pin link plate and roller link plate on the slack side of the chain should be filled with oil.

Oil forms a film which minimizes wear on the pin and bushing, reduces noise, and acts as a coolant when the chain runs at high speed.
Servicing Wildeck Lift Products, continued

Recommended Oil

Only high quality oil should be used to lubricate the roller chain. Neither heavy oil nor grease is suitable. The viscosity of the oil will depend on the chain size, chain speed, and ambient temperature. The lubricants recommended for specific temperature ranges are provided in the following table:

<table>
<thead>
<tr>
<th>Lift Capacity</th>
<th>Chain Size</th>
<th>Ambient Temperature Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14° F</td>
</tr>
<tr>
<td>Under 1000#</td>
<td>#50 or less</td>
<td>SAE 10</td>
</tr>
<tr>
<td>1000-2000#</td>
<td>#60 and #80</td>
<td>SAE 20</td>
</tr>
<tr>
<td>3000-4000#</td>
<td>#100</td>
<td>SAE 20</td>
</tr>
<tr>
<td>5000-6000#</td>
<td>#120 or more</td>
<td>SAE 30</td>
</tr>
</tbody>
</table>

Regardless of the lubricating system used, the roller chain must be washed with solvent. Examine the pin and bushing after removing the chain. Any damage or reddish-brown color on their surfaces indicate that the system is not being adequately lubricated.

Motor Maintenance

Oil levels and oil quality should be checked at frequent intervals, depending on usage. Oil changes are due at 10,000 operating hours or every two years.

Synthetic lubricants can extend oil change intervals to 20,000 hours or every four years. The lubricant should be changed at more frequent intervals where arduous operating conditions exist, such as high humidity, corrosive environment, or large temperature changes.

Grease packed bearings should be cleaned and re-greased every 10,000 hours or 20,000 hours for synthetic grease. Care should be taken on input bearings that only 1/3 of the free volume of the bearing is filled with grease to avoid overheating. For output bearings and bearings with replaceable grease shields, fill to 2/3 of the free volume.
ATTENTION: When the recommended lubricant is not available, it is permissible to use a lubricant having equivalent characteristics. We do not recommend that lubricants of different brands be mixed. Under no circumstances should synthetic lubricants be mixed with one another, or with one having a mineral base.

<table>
<thead>
<tr>
<th>Ambient air temperature range °F</th>
<th>Formulation</th>
<th>SHELL Oil Company</th>
<th>TEXACO Oil Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>+104 to +20</td>
<td>Mineral</td>
<td>Omala EP 220</td>
<td>Meropa 220</td>
</tr>
<tr>
<td>+14 to +176</td>
<td>Synthetic</td>
<td>Omala HD 680</td>
<td>Pinnacle EP680</td>
</tr>
<tr>
<td>-13 to +140</td>
<td>Synthetic</td>
<td>Omala HD 220</td>
<td>Pinnacle EP220</td>
</tr>
<tr>
<td>-40 to +50</td>
<td>Synthetic</td>
<td>Omala HD 32</td>
<td>Pinnacle EP32</td>
</tr>
</tbody>
</table>

Motor Brake  (The following brand specific data is for NORD motor and brake, see the end of this section for other motor, brake, or drive train data.)

The VRC motor, and thus the VRC platform, is held in place by the brake disc in the motor unit. This disc should be checked periodically for wear.

The brake disc is a metal plate with fiber pads mounted on each side of it. The disc spins with the motor. When the motor stops, the spinning brake disc is clamped between the motor end shield and the stationary disc. The clamping force is provided by the brake springs located between the stationary disc and the brake coil. Energizing the brake coil pulls the stationary disc away from the fiber brake disc and compresses the brake springs.

When the stationary disc clamps against the fiber brake disc, an air gap opens up between the gray brake coil and the silver stationary disc. As the brake wears, this gap becomes larger. Measuring this gap determines how much the brake has worn.
Motor brake, continued
(The following brand specific data is for NORD motor and brake, see the end of this section for other motor, brake, or drive train data.)

For optimal performance of the brake, the air gap must be between the minimum and maximum air gap spacing. When the gap approaches the maximum air gap spacing, it must be readjusted to minimum air gap. When the brake can no longer be adjusted, the brake pad must be replaced. This will generally happen after three adjustments. The brake must also be replaced when the minimum brake pad thickness is reached.

Brake Check Procedure

**WARNING:** Motor brake holds VRC in position. Carriage will drop if brake is released. Do not perform motor maintenance from VRC carriage unless it is securely supported by safety chains.

1) Disconnect power to unit. Follow “Lock out Tag out” procedures.

2) Do not perform motor maintenance from VRC carriage unless it is securely supported by safety chains.

3) Remove fan guard.

4) Identify the brake size from the motor nameplate.

   This motor has a Size 5 brake.

5) Using a feeler gauge, check the gap between the silver stationary disc and the gray brake coil. See next two pages for instructions.

6) When finished, reinstall fan guard and remove safety chains.
Brake Air Gap Adjustment:
In order to get maximum life out of the brake, the air gap must be set properly. As the brake wears and decreases in thickness, the air gap will increase. If the air gap is too large, the brake coil may not have enough magnetic force to pull the anchor plate across the gap and the brake rotor will drag.

While checking the air gap, measure the gap around the socket head cap screws as shown in the picture below.

- Loosen the socket head cap screw that attaches the brake to the motor endbell.
- Depending if the air gap needs to be increased/decreased, turn the adjusting nut accordingly. A quarter or half turn is usually sufficient for adjusting purposes.
- After adjusting the nut, tighten the socket head cap screw back onto the brake.
- Measure the air gap for spacing - Repeat process to achieve recommended setting.

<table>
<thead>
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</tr>
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<td>22</td>
<td>0.008</td>
<td>0.031</td>
<td>0.177</td>
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<tr>
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<td>7.5 (10)</td>
<td>28</td>
<td>0.008</td>
<td>0.031</td>
<td>0.217</td>
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<tr>
<td>20</td>
<td>16 (20)</td>
<td>34</td>
<td>0.012</td>
<td>0.031</td>
<td>0.301</td>
</tr>
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<td>30 (40)</td>
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<td>0.012</td>
<td>0.035</td>
<td>0.374</td>
</tr>
<tr>
<td>60</td>
<td>44 (60)</td>
<td>50</td>
<td>0.012</td>
<td>0.039</td>
<td>0.453</td>
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<td>100</td>
<td>75 (100)</td>
<td>64</td>
<td>0.016</td>
<td>0.043</td>
<td>0.492</td>
</tr>
<tr>
<td>150</td>
<td>110 (150)</td>
<td>76</td>
<td>0.016</td>
<td>0.043</td>
<td>0.571</td>
</tr>
<tr>
<td>250</td>
<td>188 (250)</td>
<td>100</td>
<td>0.019</td>
<td>0.047</td>
<td>0.650</td>
</tr>
</tbody>
</table>
PRECIMA STYLE – BRAKE PAD REPLACEMENT

LIST OF TOOLS
Following are a list of tools to remove the brake:

- Screw drivers – Philips & Flat (to remove the fan cover)
- External snap ring pliers (to remove fan retaining snap ring)
- Large screw drive or a small pry bar (to pop off the fan)
- Metric sockets & T-handles and open-end wrenches.

IMPORTANT

- Ensure that the reducer load is supported. Removal of the brake will let the load free fall, which may cause injury.
- Disconnect power from motor.

PROCEDURE

When the brake pad is worn to the minimum thickness as shown in the chart on page 6, the pad should be replaced to maintain the proper operation. To replace the pad:

- Remove the 4 bolts to remove the fan cover
- If the brake has a hand release, this can be removed by unscrewing.
- Remove the fan cover and note the position of the hand release slot if applicable.
- Remove the snap ring holding the cooling fan.
- Carefully remove the cooling fan, key and second snap ring.
- If the brake is equipped with a dust boot, remove it.
- Remove the 3 socket head cap screws holding the brake coil to the motor end-bell.
- Remove the brake coil, noting the hand release and power cable locations.
- The brake pad will now slide off the hub holding it on the shaft.
- Clean the brake, install the pad and reassemble.

NOTE: Upon reassembly, the brake air gap setting must be checked and adjusted if needed, as noted on page 6.
The insulation resistance should be checked. An insulation tester with a measurement range of at least 1000 x \( V \_n \) (e.g. at \( V \_n = 230 \) VAC: \( R \_\text{insul} = 230000 \) ohms = 0.23M ohms). If the measured value is smaller, the motor should be dried before use (for example, with hot air up to a maximum of 90°C or by resistance heating with an auxiliary AC voltage of 10% of \( V \_n \) via an isolating transformer). Care should be taken to ensure that the motor is heated with not more than 20% of its rated current and that the rise in temperature is not more than 90°C. The drying procedure can be stopped when the insulation resistance has reached 500000 = 0.5M ohms.

Severe Duty Units

Severe Duty Units are indicated with the letters “-KS” at the end of the motor type on the motor nameplate. Severe Duty units include drain holes in the motor end bells and conduit box at the lowest points allowing condensation to drain out of the motor.

CAUTION!
The drain holes are installed for the mounting position listed on the gear box nameplate. Installing a unit in a mounting position other than what is shown on the nameplate will reposition the condensation drain holes. As a result, the drain holes may not be located at the lowest point and may not allow water to drain. This can cause premature drive failure.

Electrical Connection

The motor must be installed and connected by a qualified electrician who is knowledgeable with the NEC article 430 and local regulations. He must make sure that the voltage and frequency of the electrical supply correspond with the data stamped on the motor nameplate before connecting the motor in accordance with the wiring diagram, which can be found in the terminal box. For brake connections, see the following pages.

At installation the electrician must make sure that the terminal block jumpers are positioned correctly and that all electrical connections including the ground connection are secure. In order to effectively protect the motor from overloads, appropriate motor protection must be provided. Fuses do not always provide adequate motor protection. For motors which are required to operate with a very high start-stop frequency, the overload heater type motor protection is insufficient. It is advisable in such applications to provide the motor with temperature sensors (thermistors) in the windings. Monitor the thermistors by means of an external trip device. In this way, the motor will be fully protected against practically all possible overloads.

When using motors outdoors or in washdown applications the cable entries into the terminal box must be directed downward to prevent water from entering the conduit box. The unused cable entries must be closed off properly.

Lubrication and Maintenance

WARNING! Always ensure equipment is secure and electrical power is off before removing or performing maintenance on the drive assembly. Residential motor bearings are sealed and the grease content is adequate for the life of the bearing.
SEW-Eurodrive motor brakes can be connected in a number of different ways. In order to connect the brake for each application, it is important to refer to the data on the motor nameplate that describes the brake system. The brake fields are: brake voltage, brake torque and brake control.

This operating instruction covers AC brake voltages with the following brake control components. If the brake voltage is DC, or if the brake control components differ from those listed below, an additional operating instruction must be consulted for connection information.

SEW-Eurodrive fail-safe mechanical brakes are DC controlled. Standardly, a brake rectifier (halfwave) is provided to convert the AC line voltage to the DC voltage required to drive the brake. 24VDC brakes do not include a rectifier. When voltage \(V_B\) is applied to the brake, it will release. When voltage \(V_B\) is removed from the brake, it will set. The brake rectifier can be wired either for normal brake reaction time (setting, stopping) or fast brake reaction time. The fast brake reaction will set the brake more quickly which will provide a shorter and more repeatable stopping distance. There are two basic types of brake rectifiers, BG and BGE. The BG brake rectifier is standard on motor sizes DT71 - DT100. The BGE rectifier is standard on motor sizes DV112 - DV225. The BGE rectifier can be ordered with motor sizes DT71 - DT100 and will provide faster brake release times allowing the motor to cycle more frequently.

The wiring diagrams for brake connections are located on the inside of the motor conduit box lid. The brake will release and allow the motor to rotate when the nameplate AC brake voltage \(V_B\) is supplied to the brake rectifier terminals. There are certain cases where the brake rectifier can receive its voltage from the motor's terminal block, meaning that when power is applied to the motor it will simultaneously release the brake and start the motor. See page 3 for this description.

### Brake Coil Resistance

<table>
<thead>
<tr>
<th>Motor Frame</th>
<th>DT71-80 BM(G)05</th>
<th>DT80 BM(G)1</th>
<th>DT90-100 BM(G)2</th>
<th>DT100 BM(G)4</th>
<th>DV112-132S BM(G)8</th>
<th>DV132M-160M BM15</th>
<th>DV160L-225 BM30/31/32/62</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake Size</td>
<td>AC (to rectifier (V_B))</td>
<td>AC (to rectifier (V_B))</td>
<td>AC (to rectifier (V_B))</td>
<td>AC (to rectifier (V_B))</td>
<td>AC (to rectifier (V_B))</td>
<td>AC (to rectifier (V_B))</td>
<td>AC (to rectifier (V_B))</td>
</tr>
<tr>
<td>105-116</td>
<td>24</td>
<td>13.2</td>
<td>17.1</td>
<td>52.5</td>
<td>166</td>
<td>208</td>
<td>330</td>
</tr>
<tr>
<td>186-207</td>
<td>48</td>
<td>54.0</td>
<td>149</td>
<td>60.5</td>
<td>187</td>
<td>147</td>
<td>370</td>
</tr>
<tr>
<td>208-233</td>
<td>80</td>
<td>166</td>
<td>163</td>
<td>133</td>
<td>409</td>
<td>472</td>
<td>415</td>
</tr>
<tr>
<td>330-369</td>
<td>96</td>
<td>68.0</td>
<td>187</td>
<td>163</td>
<td>133</td>
<td>409</td>
<td>465</td>
</tr>
<tr>
<td>370-414</td>
<td>147</td>
<td>171</td>
<td>409</td>
<td>409</td>
<td>168</td>
<td>515</td>
<td>208</td>
</tr>
<tr>
<td>415-464</td>
<td>167</td>
<td>215</td>
<td>591</td>
<td>591</td>
<td>515</td>
<td>515</td>
<td>341</td>
</tr>
<tr>
<td>465-522</td>
<td>208</td>
<td>341</td>
<td>1047</td>
<td>1047</td>
<td>266</td>
<td>817</td>
<td>303</td>
</tr>
</tbody>
</table>

Voltage AC - The voltage shown is the nameplate AC brake voltage supplied to the brake rectifier.

DC - The voltage shown is the effective DC voltage required by the brake coil. The measured voltage from the rectifier will be 10-20% lower than that shown.

Brake Coil Resistance - values must be measured with the brake coil disconnected from the rectifier.

\(R_a\) - Accelerator coil resistance in ohms, measured from the red to the white brake coil wire.

\(R_t\) - Fractional coil resistance in ohms, measured from the white to the blue brake coil wire.
Re-adjusting the Brake Air Gap

A properly adjusted brake air gap is critical for correct operation. The following table indicates the required air gap measurement.

<table>
<thead>
<tr>
<th>Motor Size</th>
<th>Brake Size</th>
<th>Air Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT71 - DT100</td>
<td>BM(G)05 - BM(G)4</td>
<td>0.010&quot;-0.024&quot; (0.25-0.6 mm)</td>
</tr>
<tr>
<td>DV112 - DV225</td>
<td>BM(G)8 - BM31</td>
<td>0.012&quot;-0.047&quot; (0.3-1.2 mm)</td>
</tr>
<tr>
<td>DV180-DV225</td>
<td>BM32-BM62 Double Disc</td>
<td>0.016&quot;-0.047&quot; (0.4-1.2 mm)</td>
</tr>
</tbody>
</table>

Prolonged use of the brake will wear the brake disc lining. This wear increases the air gap. When the air gap approaches its maximum value, the brake must be re-adjusted. To re-adjust the brake, follow the procedure below.

1. Remove the fan cover (14), fan snapring, fan (17), rubber seal (2), and any accessories at the fan end.
2. Insert a feeler gauge between the brake coil body (21) and the stationary disc (22), tighten the adjusting nuts (19) until the minimum value for the air gap is reached equally around the brake. With motor size 160L and up (brakes BM30 to BM62) first screw the threaded bushings (24) into the endshield. After setting the air gap, lock the bushings (24) against the coil body.
3. Ensure a play of 0.06" to 0.08" (1.5 to 2 mm) in the releasing arm. See “THE HAND RELEASE MECHANISM.”

Replacement of the Brake Disc (26)

Extended operation of the brake may wear the brake disc (26) beyond acceptable limits. The thickness of the brake disc can be measured to determine if this has occurred.

<table>
<thead>
<tr>
<th>Motor Size</th>
<th>Brake Size</th>
<th>Min. Disc (26) Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT71 - DT100</td>
<td>BM05 - BM4</td>
<td>0.354&quot; (9mm)</td>
</tr>
<tr>
<td>DV112 - DV225</td>
<td>BM8 - BM62</td>
<td>0.394&quot; (10mm)</td>
</tr>
</tbody>
</table>

The Hand Release Mechanism

Most of our brakes are supplied with a hand-operated release lever. This allows opening of the brake without applying power, allowing for adjustments on the driven machinery.

There are two brake release mechanisms available:

The “BMHR” (4) type requires a lever to be inserted into the release arm. To open the brake, pull the lever away from the motor. It will re-engage automatically, once the lever is released. The lever, when not used, is attached to the motor's cooling fins with clamps.

The screw-type “BMHF” (5) arrangement requires a hexagon key which, when turned clockwise, opens the brake.

Since the stationary disc (22) will move away from the coil body during the brake's operation, it is vital that there is free play (floating clearance) on the release arm of 0.060"-0.080" (1.5-2.0 mm). The springs (11) should be placed between the arm (7) and the nuts (12) to eliminate noise.

The brake release mechanism is not used to change the brake's torque setting. There must always be clearance on the lever.

Troubleshooting

Fault: Motor does not run

1. Check the motor and brake wiring for damage and proper connection.

2. At the motor, measure the line voltage, line current and motor resistance of all three phases.

3. If all three phases read a similar current value the following conditions may exist:

   The motor may be blocked by either an excessive external load, or problems in the reducer or the brake. In both cases, the motor should draw locked rotor (in-rush) current. Consult SEW-Eurodrive catalogs for these values. Release the brake mechanically, reset the air gap if needed, or disconnect the load from the output shaft.

   If the brake is at fault electrically see #4 below.

   If the current differs significantly from the rated locked rotor current, the motor is either an incorrect voltage, or it is jumpered for the wrong voltage.

4. If the brake can be released mechanically, but does not respond to voltage, check the brake for electrical problems.

   Make sure the wiring is according to the instructions. Pay special attention to the brake voltage.

   Energize the brake circuit and measure the AC voltage on the rectifier terminals 2 and 3 (BG/BGE rectifiers). The measured voltage should correspond to the nameplate inscription: “Brake V.”

   Measure the DC voltage across terminals 3 and 5 of the brake rectifier which should be about 35% to 45% of the previously measured AC voltage.

   If there is no fault found to this point, measure the resistance of the brake coils. Disconnect the coil from the rectifier for this measurement. See the table on Page 2 for the brake coil resistance values.

   Measure the resistance of each brake coil lead to the brake coil body. This test should show an open circuit. If a short is found, the brake coil is damaged.

If the results of all these checks (electrical connection, mechanical checks and adjustments, and electrical tests) indicate that the brake should work, then the most likely cause of the brake's failure to release is a damaged brake rectifier.

Fault: Brake stopping time is too slow

If the brake has been operating well for some time and a gradual increase in stopping time has occurred, the release arm may have come in contact with the coil body. Verify that the brake release arm end play is correct, and check for excessive brake disc wear, (see previous instructions).

If the brake has been in operation for some time, and the stopping has become erratic, dust accumulation around the stationary disc guides may be the cause. Remove the brake's rubber sealing collar and clean with an air hose.

If the application is new, check the brake's wiring and air gap. If the brake is not wired for fast response, then changing the brake wiring to fast response will decrease the stopping time. Vertical motion and indexing applications may also require the fast response connection. Increasing the brake's torque may remedy the situation, but will also increase stress on the transmission.

On applications requiring excessive brake work, the lining's surface may become glazed due to extreme heat. The application of a BGE rectifier will improve this situation dramatically. BGE rectifiers are standard equipment on motors size DV 112 - DV225, but optional on the smaller sizes DT71-DT100. Contact SEW-Eurodrive for more information.
### BM(G) Brake Cross Section and Exploded Views

**BM(G) 05 - BM 15**

1. Brake end shield
2. Rubber sealing collar
3. Braking springs
4. Hand release lever
5. Releasing screw
6. Closing plate
7. Release arm
8. Sealing ring
9. V-ring
10. Conical spring
11. Stud
12. Fanguard
13. Grommet
14. Dowel pin
15. Fan
16. Brake adjustment nut
17. Retaining stud
18. Stationary disc
19. Brake coil body
20. Pressure ring
21. Setting sleeve
22. Dual brake pad stationary disc
23. Brake disc complete
24. Carrier
25. Cup Spring

**BM 30/31**

Hand lever for manually disengaging the brake will re-engage itself when released

**BM 32/62**

Manual brake release screw for fixing brake in the dis-engaged position

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**Exploded view of the BM and BMG single-disk brake (motor sizes 71-160M)**

**BM05 - BM15 and BMG05 - BMG8**

- Only on BM(G)05 - BM(G)4
- Only on BM03
- V-ring for BM15

**Exploded view of the BM single-disk and double-disk brake (motor sizes 160L-225)**

- Only for the BM32 and BM62 double-disk brake

**BM30 - BM62**
<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Overheats</td>
<td>Motor not connected for proper supply voltage</td>
<td>Check connection diagram on conduit box cover and correct the wiring.</td>
</tr>
<tr>
<td></td>
<td>Supply voltage varies outside the allowable tolerance causing an undervoltage or overvoltage condition.</td>
<td>Assure correct supply voltage.</td>
</tr>
<tr>
<td></td>
<td>Ambient temperature is too high.</td>
<td>Ensure cool air gets to the motor. Ducting may be required.</td>
</tr>
<tr>
<td></td>
<td>Overload at rated voltage. Unit will draw current in excess of nameplate rating and run below rated speed.</td>
<td>Select a larger unit.</td>
</tr>
<tr>
<td></td>
<td>Motor’s allowable duty cycle is exceeded (too many starts per hour required).</td>
<td>The problem may or may not be solved with a larger motor. Contact SEW-Eurodrive.</td>
</tr>
<tr>
<td></td>
<td>Single phasing due to break or loose connection in supply line or blown fuse.</td>
<td>Repair supply lines. Replace fuses.</td>
</tr>
<tr>
<td></td>
<td>Motor protection device activated.</td>
<td>Reset protective device. Identify and correct cause for device activation.</td>
</tr>
<tr>
<td></td>
<td>Motor protection device faulty or will not reset.</td>
<td>Check protection device for faults.</td>
</tr>
<tr>
<td>Motor will not start or starts sluggishly.</td>
<td>Motor not connected for proper voltage.</td>
<td>Check connection diagram in conduit box cover and correct the wiring.</td>
</tr>
<tr>
<td></td>
<td>Large voltage and/or frequency fluctuation at starting.</td>
<td>Ensure stable power supply.</td>
</tr>
<tr>
<td>For reduced voltage starting, motor will not start in Star Connection but will start in Delta connection.</td>
<td>Insufficient torque in Star Connection.</td>
<td>Start motor directly in Delta Connection if possible. Otherwise use a larger motor.</td>
</tr>
<tr>
<td></td>
<td>Faulty contact in Star/Delta starter.</td>
<td>Correct fault condition.</td>
</tr>
<tr>
<td>Motor hums and draws high current.</td>
<td>Faulty or defective winding.</td>
<td>Have motor repaired by qualified service shop.</td>
</tr>
<tr>
<td></td>
<td>Rotor dragging.</td>
<td></td>
</tr>
<tr>
<td>Fuses blow or motor overcurrent protection trips immediately.</td>
<td>Short circuit in power supply conductors or in the motor.</td>
<td>Correct the fault condition.</td>
</tr>
<tr>
<td></td>
<td>Motor has ground fault or winding to winding short circuit.</td>
<td>Have motor repaired by qualified service shop.</td>
</tr>
<tr>
<td></td>
<td>Motor improperly connected.</td>
<td>Check connection diagram in conduit box cover and correct the wiring.</td>
</tr>
<tr>
<td>Motor runs in wrong direction.</td>
<td>Motor supply leads misconnected.</td>
<td>Switch two supply leads.</td>
</tr>
</tbody>
</table>

Note: If, after proceeding through the Troubleshooting Chart, the motor is found to be defective, contact your nearest SEW-Eurodrive Assembly Center for warranty assistance or replacement parts.
Trouble-Shooting Procedures

A systematic trouble-shooting procedure will help reduce downtime should a problem occur.

A complete understanding of the How It Works section will help you make efficient trouble-shooting progress.

**WARNING:** *HIGH VOLTAGE! BE CAREFUL.*

*ONLY QUALIFIED CONTROLS ELECTRICIANS ARE TO INSPECT AND REPAIR WILDECK LIFT PRODUCTS’ ELECTRICAL CIRCUITS.*

*ALL INSTRUCTIONS THAT APPLY TO ELECTRICAL PROCEDURES APPLY TO QUALIFIED ELECTRICIANS ONLY.*
# Trouble-Shooting Procedures

## 1. Activated controls do not start lift motor.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Safety gates open:</td>
<td>Close gate(s).</td>
</tr>
<tr>
<td>B. Main electrical disconnect off:</td>
<td>Consult maintenance staff before turning on.</td>
</tr>
<tr>
<td>C. Thermal overload tripped:</td>
<td>Press reset button. Determine cause if it trips again. Motor is overheating.</td>
</tr>
<tr>
<td>D. Blown control fuse:</td>
<td>Determine cause. Replace fuse.</td>
</tr>
<tr>
<td>E. Power circuit between disconnect and starter is dead:</td>
<td><strong>WARNING</strong>: Dangerous high voltage potential exists. Use extreme care when testing.</td>
</tr>
<tr>
<td></td>
<td>Check voltage with voltmeter. Repair as needed.</td>
</tr>
</tbody>
</table>

## 2. Motor starts, carriage raises, but both stop before second level is reached.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Safety gate(s) open:</td>
<td>Close gate(s).</td>
</tr>
<tr>
<td>B. Object encountered:</td>
<td>Remove; repair as required.</td>
</tr>
<tr>
<td>C. Thermal overload tripped:</td>
<td>Motor binding. Repair or replace as required.</td>
</tr>
<tr>
<td>D. Chain interference or chain off sprocket:</td>
<td>Determine cause. Repair if cable is off sprocket. Correct interference.</td>
</tr>
</tbody>
</table>
Trouble-Shooting Procedures, continued

3. **Rough or noisy operation.**

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Travel interference:</td>
<td>Remove obstructions or correct problem. Make repairs if required.</td>
</tr>
<tr>
<td>B. Drive component interference:</td>
<td>Remove obstructions or correct problem. Make repairs if required.</td>
</tr>
<tr>
<td>C. Worn wheel guide rollers:</td>
<td>Inspect, lubricate, and replace as needed. Determine cause and correct.</td>
</tr>
<tr>
<td>D. Slide shoe rubbing against main beams:</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td>E. Carriage is not level:</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td>F. Interference between chain and beams:</td>
<td>Determine cause and correct.</td>
</tr>
<tr>
<td>G. Inadequate lubrication:</td>
<td>Lubricate chain bearings and rollers properly.</td>
</tr>
</tbody>
</table>

4. **Carriage does not stop even with floor.**

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Misaligned floor level limit switch:</td>
<td>Re-adjust floor level switch.</td>
</tr>
</tbody>
</table>

5. **Motor runs but lift does not operate.**

<table>
<thead>
<tr>
<th>SITUATION</th>
<th>RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Mechanical failure:</td>
<td>Examine all drive and lift components for breakage.</td>
</tr>
</tbody>
</table>
Procedure

For safety and convenience: POST COPIES OF OPERATING INSTRUCTIONS AT EACH LEVEL OF OPERATION.

READ AND UNDERSTAND ALL WARNING AND CAUTION INFORMATION.

If at any time you have questions concerning operation or performance of Wildeck Lift Products, DO NOT OPERATE THE LIFT PRODUCT. Notify your supervisor and/or qualified maintenance personnel.

DO NOT HESITATE TO CALL WILDECK, INC., WAUKESHA, WI DIRECTLY — 262-549-4000 — WHENEVER QUESTIONS PERSIST OR CANNOT BE ANSWERED ON SITE.
Operating Instructions

**WARNING**: Do not ride on this equipment. Riding may result in death or serious injury.

**WARNING**: Do not operate this lift if gate interlocks are damaged or not functioning properly.

**CAUTION**: Do not exceed rated load capacity for the lift. Exceeding rated capacity can result in a dangerous operating condition.

**ALWAYS**: Maintain optimum weight distribution balance when lifting and lowering loads.

**NOTE**: Carriage will NOT raise or lower when safety gates are open.

**NOTE**: Contact your supervisor if the carriage stops during travel or will not raise or lower when the gates are closed.

Up Operation

Be sure all gates are closed. Press and release UP button to raise carriage. Carriage will stop at next upper level.

Down Operation

Be sure all gates are closed. Press and release DOWN button to lower carriage. Carriage will stop at next lower level.

Multi-Level Operation

Multi-level lifts have numbered buttons for each operating level. Press the button that matches the level you wish for the next carriage stop and the carriage will proceed to that destination. Press the numbered button that corresponds with your location level and the carriage will return to you.

Emergency Stop Operation

Press the EMERGENCY STOP button to stop the carriage between levels.

**NOTE**: The EMERGENCY STOP button will keep the lift inoperative until it is pulled back to its original position.
Safety Checklist

The Wildeck Vertical Reciprocating Conveyor (VRC) has been built to include all required safety equipment in accordance with the AMSE B20.1 safety standard. To insure proper worker safety, it is the owner’s responsibility to make sure that the safety of the equipment is checked, and maintained in proper working condition.

**DAILY INSPECTION**

The following safety checks should be made on an ongoing daily basis:

1. Visually check for any damage to the VRC or its safety enclosure
2. Operate the VRC and check that all emergency stop buttons will stop the unit when pressed. Also check that when the buttons are pulled back to the run position that the unit does not automatically restart.
3. For each safety gate, check that the gate cannot be opened after the VRC carriage leaves that floor. Also check that the VRC will not operate with the gate open.

If a problem is found, the VRC is to be taken out of service until proper repairs are made.

**PERIODIC MAINTENANCE & INSPECTION**

The mechanical components of the VRC must have periodic maintenance and be kept in good condition to prevent potential safety problems.

Follow the “Maintenance Schedule & Location Diagram” provided in the VRC manual. Periodic maintenance will include the following:

1. Lubrication of all components.
2. Inspection of all components for wear and damage.
3. Replacement of any damaged or badly worn parts.
4. Adjustment (as needed) of drive components and safety gate interlocks.
5. For chain driven VRCs, verify proper operation of each chain-tension limit switch. Temporarily secure each switch in the tripped position, and verify that the VRC is inoperable. (If equipped with a diagnostic display screen, verify that it reads “chain fault”.)

**BROKEN CABLE/CHAIN SAFETY INSPECTION**

When the VRC is equipped with safety cams which will lock the carriage in place in the event of a broken lifting cable or chain, this equipment is typically tested on an annual basis. In some areas, this test must be witnessed by the local safety authority.

Follow the Wildeck test procedure for your specific model VRC.
<table>
<thead>
<tr>
<th>LUBRICATE</th>
<th>INSPECT</th>
<th>ADJUST</th>
<th>NUMBER OF CYCLES/DAYS</th>
<th>ITEM</th>
<th>DUTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3000/90</td>
<td></td>
<td></td>
<td>LIFT CHAINS</td>
<td>INSPECT FOR WEAR/DAMAGE COAT WITH OIL.</td>
</tr>
<tr>
<td>2</td>
<td>3000/90</td>
<td></td>
<td></td>
<td>PILLOW BLOCK BEARINGS</td>
<td>GREASE THROUGH FITTINGS.</td>
</tr>
<tr>
<td>3</td>
<td>3000/90</td>
<td></td>
<td></td>
<td>SPROCKETS</td>
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<td>CHAIN TENSIONERS</td>
<td>INSPECT FOR PROPER OPERATION, ADJUST IF CHAIN TENSION DOES NOT TRIP SWITCH.</td>
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<td>GUIDE ROLLERS</td>
<td>INSPECT FOR WEAR AND ROTATION INTERFERENCE.</td>
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<td>SAFETY CAMS</td>
<td>INSPECT FOR WEAR OR DAMAGE.</td>
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<td>GEAR BOX</td>
<td>DRAIN AND REFILL OIL.</td>
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<td>3000/90</td>
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<td>BRAKEMOTOR</td>
<td>INSPECT FOR PROPER AIR GAP BETWEEN STATIONARY DISC AND COIL</td>
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</table>

1.) Observe cycle or days schedule based on whichever comes first.
2.) Use Lithium axle grease.
3.) Use non–detergent, petroleum base SAE 10 to 50 as specified in Maintenance Manual.
4.) Choose oil to match site temperature as specified in Maintenance Manual.
5.) Chain will stretch during initial VRC use; chain tensioner adjustment will be required.
## BILL OF MATERIALS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
<th>PART No.</th>
<th>SUFFIX</th>
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<td>WELDMENT, TENSIONER TOWER (FRONT)</td>
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<td>CHAIN TENSIONER (SUPPLIED W/BOLT)</td>
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<td>BOLT, 5/8-11 X 2&quot; LG.</td>
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# BILL OF MATERIALS

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<td>6&quot; VERTICAL UPRIGHT, 4-POST LIFT</td>
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<td>WHEEL BLOCK BACKING PLATE FOR MECH. LIFT</td>
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**SECTION D - FOUR POST SERVICING INSTRUCTIONS**

**LEVELING BLOCK ASSEMBLY**  
**MECHANICAL 4-POST**

**DATE: 3-30-95**  
**DRN BY: AJG**

**1845**  
**REV: 1**
BILL OF MATERIALS

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<td>S-HOOK, 1 3/8&quot;</td>
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NOTE:
2 CHAINS REQ'D. FOR CANTILEVER AND STRADDE LIFTS

4 CHAINS REQ'D. FOR 4-POST LIFT
BILL OF MATERIALS

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<td>FLOOR LEVEL SWITCH MOUNTING BRACKET</td>
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<td>LIMIT SWITCH, ROTARY, WITH ARM</td>
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<td>WASHER, SPRING LOCK, M5, ZINC PLATED</td>
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</table>

FLOOR LEVEL LIMIT SWITCHES
UPPER & LOWER LEVEL

DATE: 5-19-92
DRAWN BY: DFK

1386 REV 2
Wildeck, Inc. warrants its manufactured VRC’s to be free of defects. The warranty begins at completion of installation or thirty (30) days after shipment from Wildeck’s factory, whichever comes first.

1. Structural Components – five (5) years parts and labor.
2. Non-Structural Components – one (1) year parts and ninety (90) days labor.

This warranty is valid only if the Wildeck Lift has been installed in complete accordance with Wildeck instructions and Wildeck must have a completed sign-off sheet in its possession.

Improprieties including but not limited to overloading, abuse, negligence, or failure to maintain or adjust the equipment properly, will void the equipment warranty.

The warranty is also voided if unauthorized parts or equipment are installed, or modifications are made to the Wildeck Lift without prior written authorization.

WILDECK SHALL NOT IN ANY EVENT BE LIABLE FOR ANY DAMAGES, WHETHER BASED ON CONTRACT, WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE, INCLUDING WITHOUT LIMITATION ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES, ARISING WITH RESPECT TO THE EQUIPMENT OR ITS FAILURE TO OPERATE, EVEN IF WILDECK HAS BEEN ADVISED OF THE POSSIBILITY THEREOF.

WILDECK MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND, EXCEPT THAT OF TITLE, AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED.

Order No.__________________________________________