3000 WAVEX SERIES ASSEMBLY AND MAINTENANCE MANUAL

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1. SAFETY

1.1 INTRODUCTION

Your R & J Machine Cantilever Boat Lift has been engineered to provide lifting performance, long term economic and safety advantages that no other type can match. However, even a well-designed and well-built lift can malfunction or become hazardous in the hands of an inexperienced and/or untrained user. Therefore, please read this manual and the related equipment manuals thoroughly before operating your lift to provide maximum safety for all operating personnel and to get the maximum benefit from your equipment.

WARNING: Do not operate this lift without studying the entire contents of this document. Failure to do so could lead to equipment misuse resulting in serious personal injury and/or damage. Contact R & J Machine if you have any questions.

1.2 EQUIPMENT SAFETY LABELS

These labels warn you of potential hazards that could cause injury. If a label comes off or becomes illegible, contact R & J Machine for a free replacement.

1.3 EQUIPMENT & PERSONAL SAFETY

1. Do not use the lift if it shows any sign of damage.
2. Do not exceed the rated maximum lifting capacity of this equipment.
3. If using a motorized drive, understand the use of all the controls and connections.

WARNING: All electrical power sources must be installed and inspected by a certified electrician in accordance with local electrical codes.

4. Never try lifting anything other than a boat with this equipment.
5. Never allow people in the boat any time it is suspended above the water on the platform.

WARNING: Do not stand or walk on the platform while it is in the raised position.

6. Do not allow anyone to swim or play under, near or on the lift at any time.
7. Wear heavy leather gloves when handling wire cable.

WARNING: Insufficient hand protection when handling wire cable can cause injury.

1.4 OPERATING SAFETY

1.4.1 General Operating Safety

1. Never use this equipment beyond its rated capacity. This can damage the lift and/or boat with resulting personal injury.
2. Before allowing anyone to operate the lift, be certain that they have fully understood the proper operating procedure.
3. Follow the Pre-Lifting Checklist (Section 1.6) before operating the lift.
4. Do not try lifting or launching your boat in rough water conditions. This can damage your boat and/or lift.
5. The boat must be secured on the lift before raising or lowering. Failure to do this could cause equipment

damage and/or serious personal injury.

6. Keep people and pets clear during operation of the lift.
7. Keep fingers and clothing clear of all moving parts.
8. Check the lift periodically for frayed cables and/or binding pulleys.
9. Do not attempt to make any adjustments to the lift whilst it is being operated.
10. Never tamper with the winch mechanism.
11. Do not operate the lift under the influence of recreational drugs or alcohol.
12. Never use the lift to hang or store any auxiliary equipment, such as boating hardware.

1.4.2 Safety When Raising The Boat

1. The hand wheel or power drive must turn clockwise when raising the platform. The brake pawl must click, indicating that the brake is operative.
2. Do not try to raise the boat beyond the maximum lifting height of the platform.

WARNING: If you have to turn the hand wheel counterclockwise to raise the platform, the winch has been reeved incorrectly and you will immediately encounter strong resistance which can lead to winch damage and/or cable breakage.

1.4.3 Safety When Lowering The Boat

1. The hand wheel or power drive must turn counter-clockwise when lowering the platform. This allows the self-activating brake mechanism to provide a controlled lowering of the platform.

WARNING: If you have to turn the hand wheel clockwise to lower the platform, the winch has been reeved incorrectly. The break pawl will not be effective which can cause an uncontrolled spin-down or freewheel of the hand wheel.
<u>If freewheeling starts never try to stop it</u>. Although a spin-down may cause damage to the lift and/or boat, trying to stop it can cause serious personal injury.

2. Do not continue lowering the platform after the boat floats freely. Excessive slack in the winch cable may cause binding.

WARNING: Never release the break pawl on the winch. This can trigger an uncontrolled spin-down or freewheel on the hand wheel.

1.5 MAINTENANCE AND STORAGE SAFETY

1. At least once a year the lift must be thoroughly inspected as described in the Inspection and Maintenance section.
2. Either completely lower the platform before performing any type of maintenance/repair or secure the platform in the up position with a safety tie off cable.

WARNING: Never allow anybody to work in or on the boat when it is suspended above the water on the lift.

3. Immediately replace any components found to be defective, as described in the Inspection and Maintenance sections.

1.6 PRE-LIFTING CHECKLIST

The lift and related equipment must be thoroughly inspected prior to each use. Only those who have read and understood this entire manual and related equipment manuals are qualified to do this inspection. This checklist is to be used as a guideline in conjunction with the maintenance and inspection procedures outlined in this manual. It is recommended that the inspection be maintained as a permanent record.

- ☐ Ensure the lift installation will clear all power lines and obstructions.
- ☐ Ensure all structural members of the lift are free of defects and damage that may affect the integrity.
- ☐ Ensure that any power receptacle has been inspected and installed by a certified electrician in accordance with local electrical codes.
- ☐ Ensure that any user or manufacturer installed locking devices have been removed before operating the lift.
- ☐ Operate the lift first without, and then with, your boat on the platform to test the operation of both the lift and the winch.
- ☐ Ensure the boat is properly positioned on the lift before doing any raising or lowering.
- ☐ Ensure the lift is not being used beyond its rated capacity.
- ☐ Ensure any drain plug is in place in the boat before launching.
- ☐ Conduct the wire cable inspection procedure at least monthly.
- ☐ Ensure the leg height has been properly adjusted according to the water depth.
- ☐ Ensure the frame and platform fastenings are tight.
- ☐ Ensure the frame is level and square.
- ☐ Ensure the bunks are adjusted properly to fit the hull of your boat.
- ☐ Ensure the winch is securely fastened to vertical leg mounting bracket.
- ☐ Ensure the hand wheel has been attached to the winch hub plate.
- ☐ Ensure the spinner handle is attached to the hand wheel using the preassembled hardware.
- ☐ Ensure the winch cable clamp is securing wire cable end to the drum is tight and in good condition.
- ☐ When facing the front of the hand wheel, the wire cable must wind and unwind from the left side of the winch. This reeving raises the platform when turning the hand wheel clockwise and lowers the platform when turning the hand wheel counterclockwise. The brake pawl must click, meaning the brake is operative.

2. SPECIFICATIONS

2.1 TECHNICAL DATA

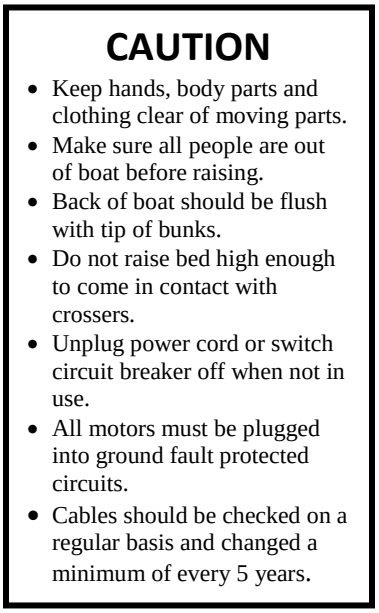
MODEL	1200 lb.	1500 lb.	2000 lb.	3000 lb.*	4000 lb.*	5000 lb.*	6000lb.
Weight Capacity	1200 lb.	1500 lb.	2000 lb.	3000 lb.	4000 lb.	5000 lb.	6000 lb.
Maximum Beam	74”	74”	94”	100”	102”	102”	104”
Lifting Height	42”	4’	4’	4’	4’	4’	4’
Overall Width	82”	89”	115 ½”	121”	126”	126”	129”
Overall Length	96”	109”	121”	130”	140”	152”	164”
Bunk Length	7’6”	9’2”	10’	10’	10’6”	11’	12’
Adjustable Legs 24”	2	2	2	2	2	2	2
Adjustable Legs 36”	2	2	2	2	2	2	2
Replacement Cable **	19’	25’	65’	65’	65’	65’	65’
Cable Size **	¼”	¼”	¼”	¼”	$^5/_{16}$”	$^5/_{16}$”	$^5/_{16}$”
Replacement Clamp **	(2) ¼”	(2) ¼”	(2) ¼”	(2) ¼”	(2) $^5/_{16}$”	(2) $^5/_{16}$”	(2) $^5/_{16}$”
Number of Pulleys	2	3	6	6	6	6	6

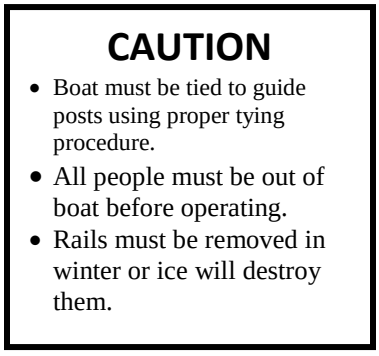
***Available sizes for Wakeboard/Ski Boat lifts.**
**** Galvanized or stainless steel aircraft cable (cable & accessories available from R & J Machine).**

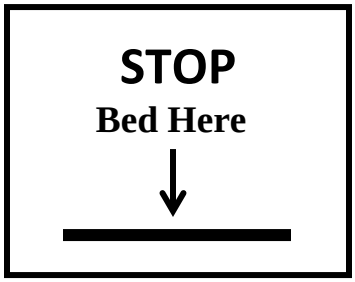
2.2 INFORMATION PLATES

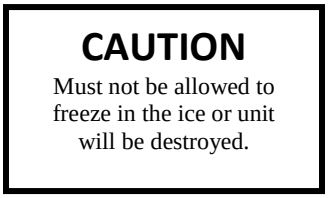
It is important to identify your lift completely and accurately. The lift has a plate which shows it’s capacity rating, an example of which is shown below.

Other CAUTION labels are attached to your lift for reference and safety purposes, examples of which are shown below.









3. ASSEMBLY AND HARDWARE

3.1 HARDWARE LIST

QUANTITY	HARDWARE
8	½ x 1” stainless steel (SS) hex bolt (hex)
8	½ x 3” SS hex
14	½ x 4” SS hex
4	½” x 4 ½” SS hex
2	½ x 5” SS hex
36	½” SS SAE washer
20	½” SS flange nut
8	½” SS nylock nut
8	Square nut
2	$^3/_8$ x 1” SS hex
3	$^3/_8$ x 1 ½” SS hex
2	$^3/_8$ x 3” SS hex
7	$^3/_8$” SS SAE washer
7	$^3/_8$” SS flange nut
1	1500 lb. manual winch and optional handle
1	R&J hand wheel
6	3” pulley assembly
2	½” shackle
1	$^3/_8$” shackle
1	½” swivel shackle
1	¼” galvanized wire cable x 65’
1	¼” cable softener
1	¼” double cable crimp
4	2 x 3” plastic cap
2	2 x 4” plastic cap
2	1 ½ x 1 ½” plastic cap
2	2 x 2” plastic cap

3.2 RECOMMENDED TOOL LIST

The following is a list of tools needed or beneficial to have for assembly.

- ¾” or 19 mm socket
- $^9/_{16}$” or 14 mm socket
- ½” or 13 mm socket
- Ratchet handle for sockets
- Tapered alignment bar
- 20’ measuring tape
- 4’ level
- Adjustable wrench
- Vice grips and/or C-clamps
- Rubber mallet

3.3 ASSEMBLY INSTRUCTIONS

It is recommended that two people assemble the lift.
For each bolt used, use one washer and one flange nut of the corresponding size unless otherwise stated in the instructions.
Use the assembly layout and the exploded view layout as references to item numbers during assembly.

1. Cut metal bands of bundle and separate all pieces.
2. Attach one piece of item 9 to both of item 8 using one ½ x 4" and one ½ x 4 ½" bolt at each end (see Figures 3.1 and 3.2). Leave the bolts loose.

Figure 3.1

Figure 3.2

3. Repeat step 2 for the other piece in item 9. Leave the bolts loose at this point.
4. Using a tape measure, measure from corner to corner on the item 8 and 9 assembly (bed assembly) both ways to check if it is square before fastening the bolts. Ensure that the measurements are within $^{1}/_{8}$" of each other before tightening the bolts.
5. Attach item 4 to the front of item 9 using one ½ x 4" bolt with 2 ½" SAE washers and one ½" nylock nut through each tab set. Leave the bolts loose.

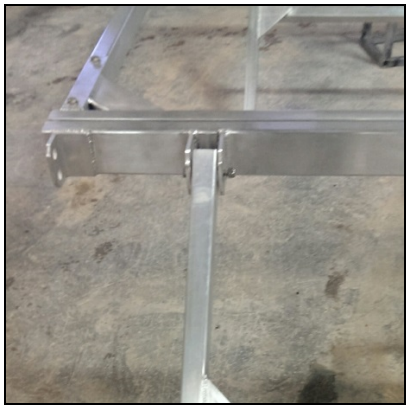


Figure 3.3

6. Repeat step 5 for the other item 4. Leave the bolts loose.
7. Slide item 3 under the assembly of items 4, 8, and 9. Attach the bottom of item 4 to item 3 using two ½ x 4" bolts with two ½" SAE washers and one ½" nylock nut (see Figure 3.4). Leave the bolts loose.

Figure 3.4

Figure 3.5

8. Repeat step 7 to attach the bottom of the front item 4 to item 2 (see Figure 3.5). Leave the bolts loose for now.
9. Stand up item 1 vertically. Attach the item 2 to item 1 using one ½ x 5" bolt through the top of the piece of angle and one ½ x 3" bolt through the side of the piece of angle (see Figure 3.6). Leave the bolts loose.

Figure 3.6

Figure 3.7

Figure 3.8

10. Attach item 3 to item 1 using three ½ x 3" bolts (see Figures 3.7 and 3.8). Leave the bolts loose.
11. Repeat steps 9 and 10 to attach item 5 to the other ends of items 2 and 3.
12. Using a tape measure, measure the inside to inside distance of the corner posts on items 1 and 5 to check if the structure is square. Ensure that the measurements are within $^{1}/_{8}$" of each other before tightening all of the bolts left loose from step 5 to 12. Tighten nylock nuts only until they are snug.
13. Attach item 12 to item 1 using one ½ x 4" bolt through the plate and post (see Figure 3.9). Attach item 12 to item 2 using one $^{3}/_{8}$ x 1" and one $^{3}/_{8}$ x 3" bolt (see Figure 3.10). Leave the bolts loose.

Figure 3.9

Figure 3.10

14. Repeat step 13 to attach item 13 to item 5. Leave the bolts loose.
15. Check to see if the corner posts are vertically square using a framing square. If items 1 and 5 are square vertically, tighten all the loose bolts from steps 13 and 14.
16. Slide four square nuts into the slot on the front piece of item 8. Place one of the pre-assemblies of items 10 and 11 on top of item 8. Attach the assembly of items 10 and 11 to item 9 by threading four (two each end) ½ x 1" bolts into the square nuts in the slot (see Figure 3.11). Leave the bolts loose.

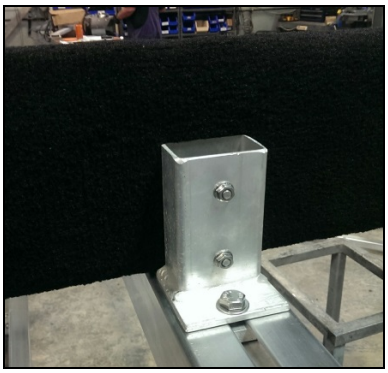


Figure 3.11

17. Repeat step 16 for the other pre-assembly of items 10 and 11. Leave the bolts loose.
18. Using a tape measure, measure the inside faces of the carpeted bunks so they are 28" apart. The 28" measurement should be center on item 9 (the cross bar). Tighten the loose bolts from steps 16 and 17.
19. Lower the assembly of items 8 through 11 down to the ground if it is not already there.
20. Fasten the 1500 lb. winch to the plate at the top of the post on item 5 using three $^{3}/_{8}$ x 1 ½" bolts (see Figure 3.12).

Figure 3.12

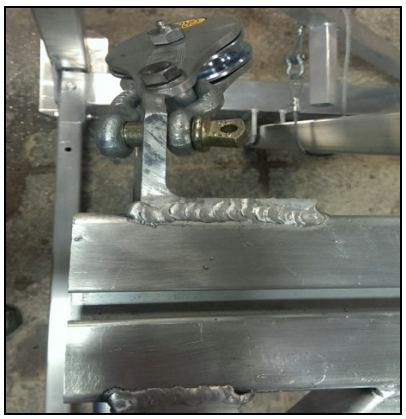


Figure 3.13

21. Attach two of the 3" pulley assemblies to one ½" shackle each. Ensure that the spacer remains between the pulley plates. Fasten each shackle to the angle on the front piece of item 8 (see Figure 3.13).
22. Fasten one 3" pulley assembly to each corner of the rear piece of item 8 (see Figure 3.14). Ensure that the spacer between the pulley plates is inserted in the hole as well.

Figure 3.14

Figure 3.15

Figure 1.16

23. Attach the swivel shackle to one 3” pulley assembly. Ensure that the spacer remains between the pulley plates. Fasten the shackle end of the swivel shackle to the inside hole of the 4” channel bracket on item 1 (see Figure 3.15).
24. Fasten one 3” pulley assembly to the outside hole on the 4” channel bracket on item 5 (see Figure 3.16).
25. Attach one $^{3}/_{8}$” shackle the crimped end of the length of ¼” galvanized wire cable. Attach the shackle to the other hole on the 4” channel bracket on item 5 as shown in Figure 3.17a. Route the cable down to pulley assembly on the front right corner angle bracket of item 8 as shown in Figure 3.17b. Route the cable parallel to item 8 to the other pulley assembly on the front left corner bracket of item 8 as shown in Figure 3.17c. Route the cable up and around the pulley assembly with the swivel shackle on the 4” channel bracket on item 1 as shown in Figure 3.17d. Route the cable down to the pulley assembly in the rear left corner of item 8 as shown in Figure 3.17e. Route the cable parallel to item 8 to the other pulley assembly in the rear right corner of item 8 as shown in Figure 3.17f. Route the cable back up around the pulley assembly on the 4” channel bracket as shown in Figure 3.17a.

Figure 3.17a

Figure 3.17b

Figure 3.17c

Figure 3.17d

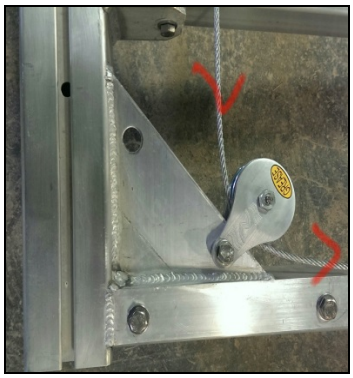


Figure 3.17e

Figure 3.17f

26. Route the cable up to the winch and through the hole on the inside of the winch drum to the outside of the winch drum (see Figure 3.18) and clamp it in place using the clamp hardware on the left side of Figure 3.19.

Figure 3.18

Figure 3.19

27. Thread hand wheel onto the side of the winch. To ensure that the hand wheel is properly fastened on, listen for two to three clicks from the winch brake. Thread on the bolt, spring and spacer assembly shown in the right side of Figure 3.19 (see Figures 3.20 and 3.21).

Figure 3.20

Figure 3.21

28. Velcro the hand wheel cover onto the hand wheel.
29. Tap the four 2 x 3" caps into the tops of both of items 4 using a rubber mallet. Tap the two 2 x 4" plastic caps into the bed stops at the bottom rear ends of items 1 and 5. Tap the two 1 ½ x 1 ½" plastic caps into the stops on items 12 and 13. Tap the two 2 x 2" plastic caps into the bed stops on item 4. Tap the 3 x 3" plastic caps into the tops of the corner posts on items 1 and 5.

Insert 3000lb layout

Insert 3000lb exploded diagram

4. OPERATION

4.1 BEFORE OPERATING THE LIFT

1. Read and know the instructions and ensure that everyone understands the proper operating procedure.
2. If using a power drive, understand the use of all the controls and connections provided with it.
3. Follow the Pre-Lifting Checklist before operating.
4. Do not use the lift if it shows any signs of damage.
5. Ensure that all bolts and nuts are fastened securely prior to operation.
6. Check that the winch is reeved properly.
7. Never lift anything other than a boat with this lift.
8. Adjust bunks to properly fit the hull of boat.

WARNING: The boat must be properly positioned on the lift before doing any raising or lowering. Failure to do this could result in personal injury and/or equipment damage.

4.2 TESTING THE WINCH OPERATION

1. Raise the empty platform about one fourth of the way up and release the hand wheel. The hand wheel or power drive must turn clockwise when raising the platform. The brake pawl must click, indicating that the break is operative. An empty platform will have a normal tendency to slowly lower itself.

WARNING: If you have to turn the hand wheel counterclockwise to raise the platform, the winch has been reeved incorrectly and you will immediately encounter strong resistance which can lead to winch damage and/or cable breakage.

2. Repeat step 1 in the half, three-quarters, and full lift positioning.
3. Lower the empty platform and perform steps 1 & 2 with your boat on the lift. The hand wheel or power drive must turn counter-clockwise when lowering the platform. When loaded, the self-activating mechanism should stop the platform from lowering as soon as the operator stops turning the hand wheel.

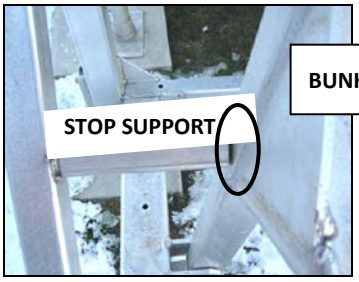
WARNING: If the hand wheel starts to spin-down or freewheel from any test position, <u>do not try to stop it</u>. Do not use a lift in this condition.

4. Contact R & J Machine if the winch mechanism fails to perform as described in this section. Do NOT tamper with the winch mechanism.

4.3 RAISING AND LOWERING THE PLATFORM

WARNING: Never allow anybody to walk on the platform or be in the boat when it is in the raised position.

1. Locate the ‘STOP Bed Here’ sticker (located on the top side of the frame) which indicates the stopping position for the bunk bed platform in relation to the frame.



WARNING:

When raising the bunk bed platform it is <u>CRITICAL</u> that you stop winching up the platform when the vertical support is just about to touch the stop support. Further winching could result in a broken brace or twisted frame.

2. Raise the platform by turning the hand wheel clockwise. The self-activating brake mechanism will hold the platform at any desired height.
3. The platform should be raised so there is a minimum of 1 foot clearance between the bottom of the boat and the highest potential water table height for your area.
4. Lower the platform by turning the hand wheel counter-clockwise. Do not continue lowering the platform after the boat floats freely from the platform (continued lowering of the platform can cause the cables to go loose and result in uneven wrapping on drum).
5. Ensure that all fingers and clothing are kept clear of moving parts.
6. Check the lift periodically for frayed cable and/or binding pulleys.
7. When using a power drive, avoid sudden stops.

4.4 SECURING THE LIFT WHEN NOT IN USE

At the end of any operation, secure the lift to prevent unauthorized use. Proceed as follows:

1. Raise the platform to the desired height.
2. Padlock the hand wheel to the post or lock-out your power drive to prevent unauthorized use when your boatlift is unattended.

5. INSPECTION AND MAINTENANCE

5.1 GENERAL MAINTENANCE RULES

1. Do not allow persons other than authorized service personnel to repair this equipment.
2. Do not weld or otherwise modify the lift. Such alterations may weaken the structural integrity of the lift and invalidate your warranty.
3. Completely lower the lift before performing any type of maintenance or repair.

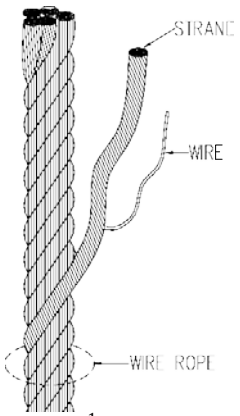
5.2 WIRE CABLE INSPECTION PROCEDURE

Inspect the wire cable prior to each use for signs of wear, damage or pinching. Inspect the entire working length of the cable. Thoroughly inspect the cable sections that pass over pulleys or drums, or that make opposing turns. While inspecting, examine pulleys, guards, guides, drums, flanges, end attachments and any other surfaces contacting the wire cable during operation. Correct any condition harming the cable at this time.

⚠ WARNING: Wear heavy leather gloves when handling wire cable. Insufficient hand protection when handling wire cable can cause injury.

Remove and immediately replace wire cable with one or more of the following defects:

1. Corrosion.
2. Broken wires:
    a. With one or more valley breaks. A valley break is where a wire break occurs between two adjacent strands.
    b. When six randomly distributed broken wires in one cable lay. A cable lay is the length of cable along which one strand makes a complete revolution around the cable (see diagram below).
3. Abrasion: scrubbing, flattening or peening causing loss of more than one-third of the original diameter of the outside wires.
4. Kinking: severe kinking, crushing, bird caging or other damage causing distortion of the cable structure. Bird caging is a bulge in the cable caused by the individual wires becoming untwisted (this untwisting is usually caused by impact loading on the cable, such as a sudden stop).
5. Heat damage: evidence of any heat damage caused by a torch or by contact with electrical wires.



Wire Cable Components

6. Reduction of more than $^{1}/_{64}$" from a nominal $^{5}/_{16}$" or less diameter cable. Reduction of more than $^{1}/_{32}$" from a nominal $^{3}/_{8}$" to ½" diameter cable.

5.3 ANNUAL INSPECTION PROCEDURE

At least once a year, the lift must be thoroughly inspected using the following procedure:

WARNING: Do not allow anybody to use the lift until this maintenance is complete.

1. Tighten all bolts.
2. Check the pulleys to ensure that they spin freely. If they bind, grease them to ensure that they move freely.
3. Check the frame thoroughly for defects.
4. Perform the winch maintenance as described in section 4.4.

5.4 ANNUAL WINCH MAINTENANCE

WARNING: The winch maintenance schedule must be followed to avoid possible equipment failure or personal injury.

1. Apply automotive type grease to both the pinion and drum gear teeth, and to the outside diameter of the drum bearing. Always keep a light film of grease on the gear teeth.
2. During each usage, check for proper ratchet operation as follows:
    a. When lifting with clockwise rotation, a clicking sound should be heard.
    b. When lowering with counter-clockwise rotation, there is no clicking sound.
3. Grease all pulleys using a grease gun.

WARNING: After winch maintenance has been performed, test the winch mechanism as described in section 3.2 before letting anyone use the lift.

5.5 STORAGE PROCEDURE

1. Position your boat on the platform so that the lower unit of the motor is against the optional motor stop (if used).
2. Remove the drainage plug while the boat is up on the lift. A boat that has water in it (from a rain storm) could exceed the recommended weight capacity for the lift. Just 1 gallon of water weighs over 8 pounds. **Make sure you replace the plug prior to launching your boat!**
3. Protect your lift as far as possible from damage caused by environmental factors such as airborne fallout, chemicals, tree sap and diverse weather hazards.
4. Never use the lift to hang or store any other items.
5. Do not allow anyone to swim or play near the lift at any time.
6. Padlock the hand wheel to the post and disconnect the power to any electrical motor when your boat is unattended. Never assume you will find the lift in the same condition that you left it.

6. TROUBLE SHOOTING

SYMPTOM	CAUSE AND CORRECTIVE ACTION
Winch resists raising the platform.	• Winch has been reeved incorrectly - winch must turn clockwise to raise platform. Winch needs re-threading. • Pulleys binding – inspect/grease/replace. • Winch cable is rubbing against the winch frame - repeat winch reeving if necessary.
Winch fails to hold the platform in a given position as described in the test procedure.	• Contact R & J Machine - tampering with the winch mechanism can cause equipment damage that may invalidate your warranty.
Winch is operating properly, but platform raising is either difficult, noisy or impossible.	• Platform is binding because frame is either not square or not set level in the water – leg adjustment required. • One or more wires are broken – replace cable. • Pulleys binding – inspect/grease/replace. • One or more cables are excessively worn - replace as required and follow monthly wire cable inspection procedure. • Load exceeds rated capacity - reduce load weight as needed. • User or manufacturer installed locking devices are in place - remove these. • Auxiliary equipment such as boating hardware has been improperly hung on lift - remove this equipment permanently.
Boat is not lifting level—stern is lifting higher or lower than the bow.	• Frame is not level in the water - readjust height of extension legs. • Bunks are not adjusted correctly resulting in the boat not sitting level in the bunks. See section 6.3.
Boat shifts position when operating the lift.	• Boat is not properly secured on the lift - failure to properly secure boat can cause equipment damage and/or serious personal injury. • Bunks are not adjusted correctly resulting in the boat not sitting level in the bunks. See section 6.3.
Lowering operation triggers a “freewheeling” of the hand wheel.	• Winch has been reeved incorrectly - winch must turn counterclockwise to lower the platform. Winch cable needs to be re-threaded. • Unauthorized brake pawl release has occurred - do not try to correct this yourself. Contact R & J Machine immediately.
Lowest platform position is too high or low relative to the water.	• Connections between the vertical and adjustable legs need readjusting.

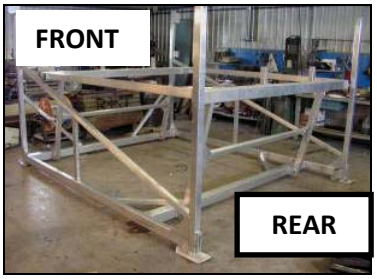
Platform is not lowering completely.	• Winch has been reeved incorrectly causing cable to seize. Cable needs to be re-threaded. • Foreign object underneath the platform. Secure the platform and check for debris. Failure to properly secure boat prior to inspection can cause equipment damage and/or serious personal injury. • Winch is hanging on the breaking system. Contact R & J Machine for assistance.

7. REPLACEMENTS & ADJUSTMENTS

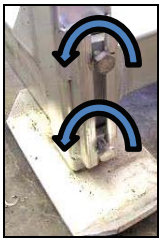
7.1 LEG ADJUSTEMENT

It is critical that each foot plate has a solid, flat base to rest on. It may be necessary to place a concrete slab (or similar) under each plate in order to maintain stability. Minor adjustments may be required after the boat has been placed on the lift (due to settling) to ensure that the desired level is maintained.

⚠ **WARNING:** Before performing any adjustments, remove the boat from the lift and place the bunk in the fully raised position.



Note: it may be advisable to allow for fluctuations in water levels by placing the cross bar a few inches below the water level. It is also advisable to slightly tilt the lift towards the back so that any water in the boat can drain rearward toward the bilge when the boat is raised out of the water.



Step 1 – Loosen (but do not remove) the bolts on the front 2 leg brackets with a ¾" or 19mm wrench. This will allow the leg posts to move freely.

Step 2 – Adjust the front legs to the recommended height. The cross bar (shown) should sit just at or slightly below the water level. Using a spirit level, check for side-to-side alignment. Adjust the front leg(s) as required until unit is level.

Step 3 – Tighten both bolts on the front 2 leg brackets with a ¾" or 19mm wrench.

Step 4 – As in Step 1, loosen (but do not remove) the bolts on the rear 2 leg brackets with a ¾" or 19mm wrench. Adjust the rear legs so that the lift has a slight reward tilt.

Step 5 - Using a spirit level, check for side-to-side and front-to-back alignment. Adjust the rear legs as required until the correct level is achieved.

Step 6 - Tighten both bolts on the rear 2 leg brackets, as shown in Step 3.

7.2 CABLE REPLACEMENT

⚠ **WARNING:** Before replacing the cable, remove the boat from the lift and place the bunk in the lowered position.

Note: the instructions below are for a left hand mounted winch, you will need to flip the procedure for a right mounted winch and feed the cable onto the winch between the backside of the drum and the winch frame.

Step 1 – Securely connect looped end of wire cable to shackle on lift frame. Route cable down through 1st pulley (located just underneath the U-bolt) as indicated on Diagram 6.2.1.

Step 2 – Route cable horizontally across the frame and through 2nd pulley system (located on opposite side of frame).

Step 3 – Route cable horizontally along frame and through 3rd pulley.

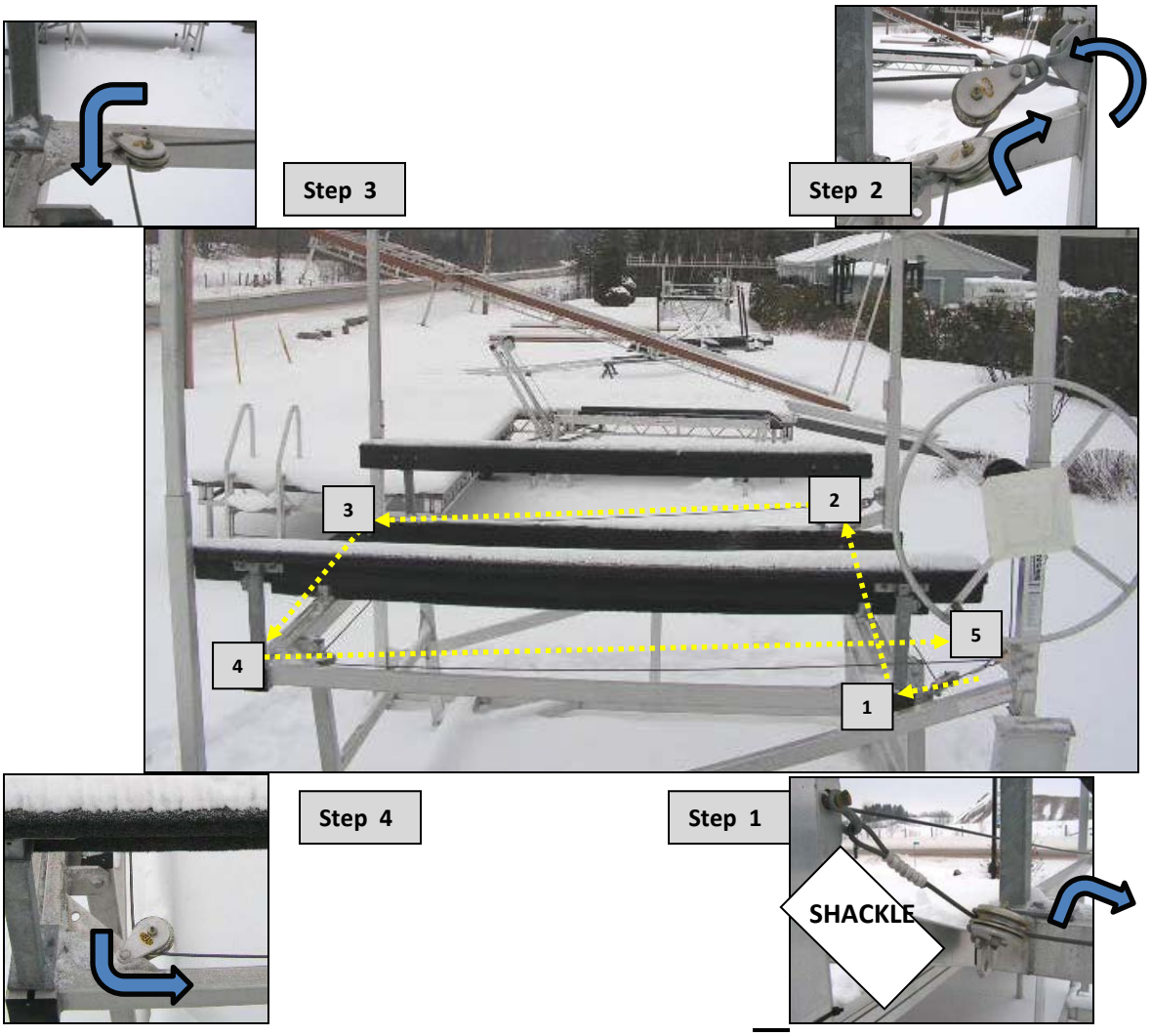
Step 4 – Route cable horizontally across the frame and through 4th pulley (located on opposite side of frame).

Step 5 - Route cable up over the front of the winch drum. Clamp end with approx. 1" of cable extending beyond clamp. Wind up excess cable onto drum with minimal gaps between wraps. Ensure that cable does not rub against any part of winch frame or vertical lift.

Step 6 – Grease the mating surfaces of all stainless steel fasteners on all pulleys to ensure they turn freely.

⚠ **WARNING:** Ensure clockwise rotation of the winch handle raises the platform and an audible 'click' of the brake pawl is heard upon raising.

7.2.1 CABLE REPLACEMENT DIAGRAM



7.3 BUNK ADJUSTMENT

Our bunks are pre-set to properly fit the most common boat hull configurations. However, if you need to replace the bunks or change your boat, adjustments may be required. **Note:** if you change from a traditional 'V' style hull to a ski boat with fins and shaft, the bunks must be replaced with a set of raised bunks to allow for additional clearance.

On a standard 'V' hull configuration, your boat should be positioned so that it is centered in the lift and forward just enough so that the rear taper on the bunk is visible just past the stern of the boats left and right side chines.

For boats with I/O or an outboard motor, the boat should be positioned so that so that the rear taper on the bunk is visible just past the stern of the boat and not the extended swim platform.

For ski boats or boats with fins and/or shaft drives, your boat should be positioned far enough forward so the propeller and rudder are behind the bed frame.

⚠ **WARNING:** Before making any adjustments, remove the boat from the lift and place the bunk in the raised position.

7.3.1 Bunk Adjustment 3000lb - 6000lb Boatlift

Step 1: Loosen the two ¾" bolts and slide the post along the track to the desired location. Repeat on the other side.

Step 2: Tighten all bolts.
Step 3: Retry boat on bunks and continue to make adjustments until the correct position is achieved.

8. WARRANTY

R & J Machine warrants all WaveX built equipment purchased new by the original owner to be free from defect in the material and workmanship under normal use for a period of 24 months from the original date of purchase (excluding components and options which carry their own manufacturer's warranty, wherein that warranty will apply).

R & J Machine is not liable for indirect, incidental or consequential losses, damages or injuries of any kind due to installation, removal, use, misuse, misapplication or improper selection of one of our purchased or displayed products. R & J Machine agrees to repair or replace only defective parts returned to the factory (prepaid) and deemed defective by R & J Machine. Any repairs performed shall not extend the 24 month duration of this warranty.

All PVC decking is warranted by the PVC manufacturer and must be returned to them.

There is no other express warranty.

Our warranty is void in any of the following circumstances:

- Equipment has been used beyond its rated capacity.
- Damage or defect has occurred due to repairs/services being completed by persons other than authorized service personnel.
- Damage has been caused by environmental factors which include (but are not limited to) airborne fallout, tree sap, fire, floods, storms, lightning & ice.
- Damage caused by accident, abuse or negligence, misuse, incorrect operation or improper adjustment.
- The product has been modified in any way by the customer once ownership has occurred.