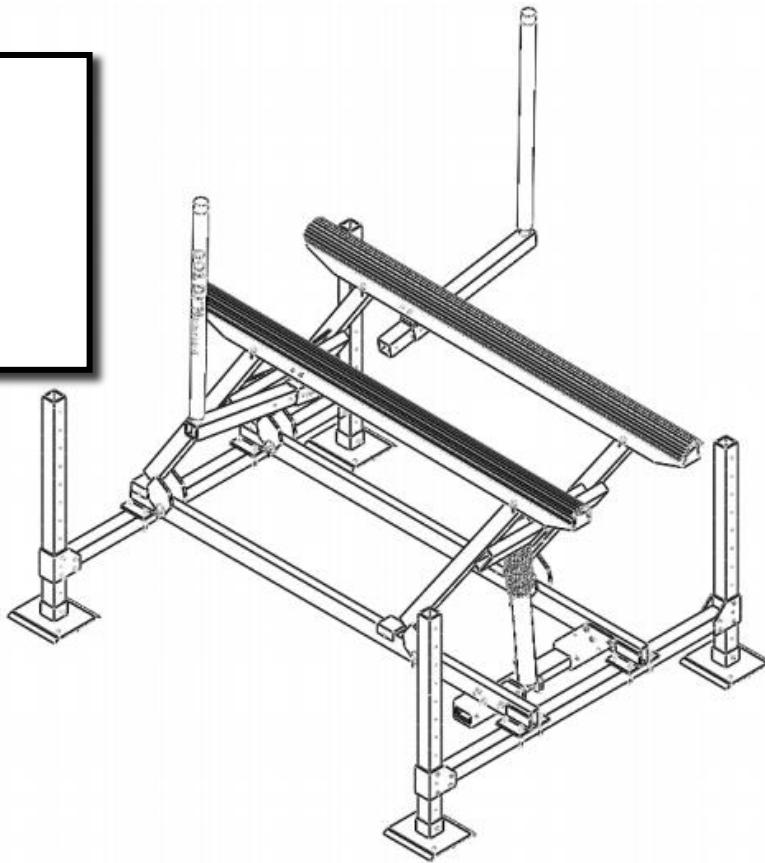




OPERATIONS MANUAL

MODELS:

1-CYLINDER
2-CYLINDER
4-CYLINDER
6-CYLINDER
8-CYLINDER



TORNADO LIFT



17611 East St, North Fort Myers, FL 33917
(239) 337-4141

GoldenMarineSystems.com

GoldenBoatLifts.com

REVISION A
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INTRODUCTION

Golden is proud to introduce the Tornado Lift to our line of lifts.

This lift is a free-standing adjustable hydraulic lift manufactured with T-6 marine grade aluminum and stainless-steel hardware. This lift is ideal for freshwater and saltwater applications where shore power might be an issue or code regulations prevent piling or fixed structure lifts.

We weld all components that are not adjustable, which prevents premature loosening of parts and there is no contact of dissimilar metals in a saltwater environment, we enclose our hydraulic shafts in our exclusive Air Bellow. The 'Air Bellows' prevent any harmful particles and marine growth from damaging the hydraulic cylinders, seals and shafts.

We use only eco-friendly biodegradable fluid. It is 100 % water soluble and meets the strict guidelines of the US Fish & Wildlife Service as non-toxic.

FEATURES

- Hardened Stainless Axles with Nylatron Sleeves.
- Highest Lift Travel at 6° of Rise
- Long Range Wireless Remote with 2 Transmitters
- Marine Grade Aluminum & Stainless-Steel Construction.
- Aluminum Bunks with Rubber Capped Adjustable Inserts.
- Hydraulic Cylinders with Stainless Steel Shafts.
- Hydraulic Cylinder Shafts are Protected with the Exclusive Air Bellows
- Larger Structural Components Prevent Flex and Wear; our Lifts are much Heavier than all Others.
- The Golden Exclusive Multi-Bunk Can Accommodate V-hulls, Step-Hulls, Pontoon and Deck Boats, As Well As PWCs.
- Optional and Removable Accessories Such as Adjustable Guide Poles with Cushions, Bumpers or Optional Walkways, Bow Stops and Wheel Kits (see accessories).



SAFETY

SAVE THESE SAFETY INSTRUCTIONS FOR FUTURE REFERENCE

SAFETY INFORMATION (READ THOROUGHLY)

The TORNADO BOAT LIFT was designed, tested and certified to be installed in the recommended area approved by certified and approved personnel under the specific installation and operation guidelines laid out in the installation and operation manuals issued by GOLDEN BOAT LIFTS.

Note: Any installation or operation methods outside the guidelines described within the manual(s) mentioned above will void the product warranty.

Note: Only a trained and certified service provider should install the Tornado boat Lift.

Note: Before beginning installation of the Tornado Boat Lift, please ensure that the area selected for installation meets all local and state guidelines and regulations.

Note: To avoid damage to the Tornado Boat Lift and/or personal injury/death, carefully follow each step outlined in the manual(s).

Note: Before beginning installation of the Tornado boat Lift, clear adequate space around the installation site so that all parts, hardware, and tools can be laid out in a safe and organized fashion.

! CAUTION !

HEAVY OBJECTS

Failure to follow this warning can result in personal injury or death and/or damage to the Tornado Boat Lift.

The Tornado Boat Lift has many heavy parts. To avoid bodily harm and/or damage to the Tornado Boat Lift, ensure that proper handling and lifting techniques are used.

Note: Machinery may be required to move individual parts and/or finished product.

When completing the steps outlined in this Installation Manual, please ensure that only proper handling and lifting techniques are used to transport parts to desired locations. In some circumstances, machinery may be required to move individual parts.

The Tornado Boat Lift comes with a 12V DC Double-Acting Hydraulic Power Unit (SPX Stone Hydraulic Power unit) which provides the power for operation of the Tornado Boat Lift.

Note: After installation of the Tornado Boat Lift, please reference the HYDRAULIC POWER PACK INSTALLATION MANUAL provided to continue installation of the power supply for the Tornado Boat Lift. Failure to reference and follow these instructions before attempting to operate the Tornado Boat Lift may cause damage to the lift and/or personal injury/death.

! WARNING !

MOVING PARTS HAZARD

Failure to follow this warning can result in personal injury or death and/or damage to the Tornado Boat Lift.

The Tornado Boat Lift has many moving parts while in operation. To avoid bodily harm and/or damage to the Tornado Boat Lift, ensure the lift is operated from a safe distance, and never on the lift or boat.

Note: Never operate a lift while on the lift or inside the boat.

After completing the steps outline in the TORNADO INSTALLATION MANUAL and the HYDRAULIC POWER PACK INSTALLATION MANUAL, the Tornado Boat Lift should be ready to operate.

Note: Before operation, it is important to verify that every step outlined in the TORNADO INSTALLATION MANUAL and the HYDRAULIC POWER PACK INSTALLATION MANUAL has been correctly completed.

To operate the Tornado Boat Lift, please reference the TORNADO BOAT LIFT OPERATION MANUAL.

Note: Never Exceed the maximum capacity of the lift.

Note: Never go under the lift or boat, especially when the lift is in the raised position. Never operate a lift while on the lift or inside the boat.

Note: It is recommended that the Tornado Lift be raised to the upward position after removing the boat, indicating a hidden underwater obstruction for others.

SAVE THESE INSTRUCTIONS



STANDARD OPERATION

Note: Please thoroughly read the following Standard Operations instructions before attempting to operate the Tornado Boat Lift.

Note: Please ensure that all the steps and guidelines outlined in both the TORNADO BOAT LIFT INSTALLATION MANUAL and the HYDRAULIC POWER PACK INSTALLATION MANUAL have been completed and inspected by qualified personnel before proceeding.

Note: Please ensure the included transmitter(s) has/have been paired correctly with the pump and boat lift before proceeding.

Waking the Remote-Control Transmitter(s):

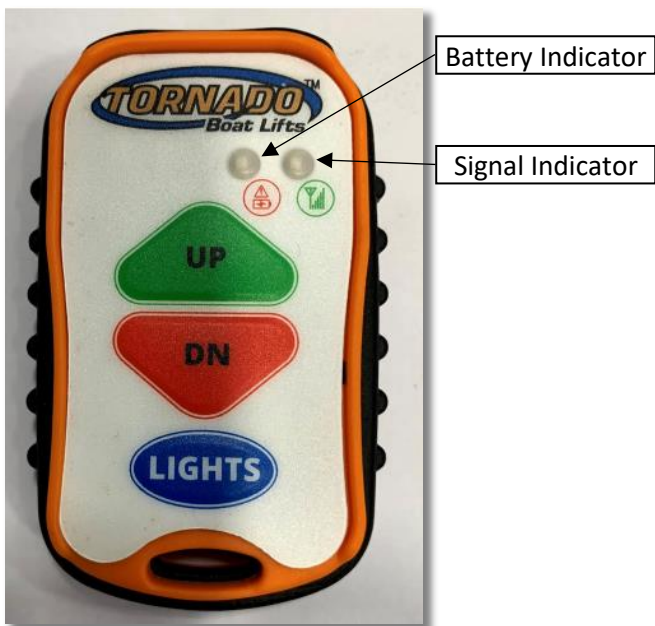
Note: The lift will not operate while more than one transmitter is in the Woke state. Wait 30+ seconds for the transmitter(s) to enter Sleep mode.

Note: Battery Indicator flashing red = Low Battery

Note: Signal Indicator flashing green = Wake State

Note: Signal Indicator flashing red = Unit Out of Range

1. Press any button on the transmitter(s) to put the transmitter into a "wake" state, distinguished by a green flashing light.
2. Now, the Remote-Control Transmitter is ready to operate the Tornado boat Lift:
 - UP Button (UP)- Raises the boat lift
 - DOWN Button (DN)- Lowers the boat lift
 - LIGHTS Button (LIGHTS)- If applicable, will turn power on/off to accessory light(s)



Standard Operation Procedure: Parking

Note: Do not operate the Tornado Boat Lift while on the lift or inside the boat

1. Using the Remote-Control Transmitter, ensure the Tornado Boat Lift is in the desired lowered position.
2. Carefully position the boat in appropriate location resting hull on bunks of boat lift.

Note: It is important to consult the boat manufacturer to determine how to position boat on bunks. Failure to do this may result in damage to the Tornado Boat Lift, the boat, and/or bodily harm.

3. From a safe location away from the boat lift and boat, use the Remote-Control Transmitter to raise the boat to the desired height.

Standard Operation Procedure: Launching

Note: Do not operate the Tornado Boat Lift while on the lift or inside the boat

Note: It is important to verify that there are no obstructions before lowering the boat lift.

1. From a safe location away from the boat lift and boat, use the Remote-Control Transmitter to lower the boat until it is freely floating on the water.
2. Carefully position the boat away from the lift before boarding the boat.

Pairing Remote-Control Transmitter(s)

Note: All transmitters must be programmed at same time. To do this, follow steps 1-3 for each remote before proceeding to step 4.

1. Ensure RECEIVER power button is in the "OFF" position.
2. Ensure Remote-Control Transmitter is in sleep mode (no flashing lights).
3. Hold "UP" and "LIGHT" buttons on transmitter at the same time until the Battery Indicator and Signal Indicator begin flashing alternately red and green.
4. Turn the RECEIVER power button to the "ON" position.
5. If pairing was successful, the transmitter will begin flashing only green.

Note: If the transmitter is not flashing green or is not working, please repeat these steps.



RECOMMENDED MAINTENANCE

Note: Please refer to the HYDRAULIC POWER PACK INSTALLATION MANUAL for a more detailed description for maintenance.

Checking the Fluid/ Oil Level

It is standard to add fluid to the pump periodically as needed. To verify there is enough fluid in the pump:

- Position lift to the UP position- The fluid should be between 1-1/2" to 2" from the bottom of the tank.
- Position lift to the DOWN position- The fluid should be between 1-1/2" to 2" from the top of the tank

If the fluid is lower than described above, carefully add more fluid, following the detailed description in the HYDRAULIC POWER PACK INSTALLATION MANUAL.

Note: Only add fluid when the lift is in the DOWN position. Failure to follow this will result in overflowing the reservoir tank and causing damage to the pump and lift.

Changing the Oil

The oil should be replaced every two years to ensure maximum life of unit. During this time, it is recommended that the Inlet Suction Strainer also be cleaned.

Note: The oil will need to be drained before the Inlet Suction Strainer is accessible.

Note: The oil will need to be changed at a faster rate the more frequently the lift is used.

Note: The oil may need to be changed more frequently depending on the environment/climate the lift is in.

Battery Maintenance

Periodically check the battery cables and connections for corrosion. If corrosion is present, remove corrosion using standard methods and reapply Dielectric Grease (or any corrosion protectant rated for boat lifts).

Cleaning the Solar Panel

Use a mild cleaner to remove any dirt/grime from the solar panel. Doing this regularly will improve the charging ability and extend the battery life.



SPECIFICATION SHEET

1-Cylinder Lift(s)

- LIFT CAPACITY: 2,000 lbs. (907 kgs)
- NUMBER OF CYLINDERS: 1
- WEIGHT \approx 507 lbs. (230 kgs)
- HEIGHT ADJUSTMENT RANGE \approx 55 in - 117 in (1.4 m - 3 m)
- FRAME SIZE \approx 96 in x 72 in [L x W] (2.44 m x 1.83 m)
- BUNK LENGTH \approx 96 in (2.44 m)
- POWER SUPPLY: 12 V DC H.D. Pump & Solar Package enclosed within fiberglass lock box (Operated using provided transmitters)

2-Cylinder Lift(s)

- LIFT CAPACITY: 4,500/6,000 lbs. (2,041/2,722 kgs)
- NUMBER OF CYLINDERS: 2
- WEIGHT \approx \leq 900 lbs. (408 kgs)
- HEIGHT ADJUSTMENT RANGE \approx 55 in - 117 in (1.4 m - 3 m)
- FRAME SIZE \approx 144 in x 127 in [L x W] (3.65 m x 3.05 m)
- BUNK LENGTH \approx 144 in (3.65 m)
- POWER SUPPLY: 12 V DC H.D. Pump & Solar Package enclosed within fiberglass lock box (Operated using provided transmitters)

4-Cylinder Lift(s)

- LIFT CAPACITY: 8,000 / 10,000 / 12,000 lbs. (3,629 / 4,536 / 5,443 kgs)
- NUMBER OF CYLINDERS: 4
- WEIGHT \approx 1,062 lbs. (482 kgs)
- HEIGHT ADJUSTMENT RANGE \approx 55 in - 117 in (1.4 m - 3 m)
- FRAME SIZE \approx 144 in x 132 in [L x W] (3.65 m x 3.35 m)
- BUNK LENGTH \approx 144 in (3.65 m)

- POWER SUPPLY: 12 V DC H.D. Pump & Solar Package enclosed within fiberglass lock box (Operated using provided transmitters)

6-Cylinder Lift(s)

- LIFT CAPACITY: 15,000/18,000 lbs. (6804/8,165 kgs)
- NUMBER OF CYLINDERS: 6
- WEIGHT \approx 1,800/2,000 lbs. (817/907 kgs)
- HEIGHT ADJUSTMENT RANGE \approx 55 in - 117 in (1.4 m - 3 m)
- FRAME SIZE \approx 216 in x 144 in [L x W] (5.49 m x 3.66 m)
- BUNK LENGTH \approx 72 in & 192 in (1.83 m & 4.88 m)
- POWER SUPPLY: 12 V DC H.D. Pump & Solar Package enclosed within fiberglass lock box (Operated using provided transmitters)

8-Cylinder Lift(s)

- LIFT CAPACITY: 24,000 lbs. (10,886 kgs)
- NUMBER OF CYLINDERS: 8
- WEIGHT \approx \geq 2,000 lbs. (817/907 kgs)
- HEIGHT ADJUSTMENT RANGE \approx 55 in - 117 in (1.4 m - 3 m)
- FRAME SIZE \approx 288 in x 168 in [L x W] (7.3 m x 4.27 m)
- BUNK LENGTH \approx 96 in & 192 in (2.44 m & 4.88 m)
- POWER SUPPLY: 12 V DC H.D. Pump & Solar Package enclosed within fiberglass lock box (Operated using provided transmitters)



Boat Lift Warranty

1. THIS WARRANTY COVERS:

- A. Boat Lifts purchased or used for personal, family, or household purposes, Golden Manufacturing Inc. (the "Company"), warrants the structural integrity of the aluminum cradle beams and top beams of our 4 & 8 post boat lifts for a period of 15 years (excluding the Runabout series), elevator and PWC lifts 5 year warranty (excluding the EC Elevator series) from date of delivery by seller to the original purchaser of the property where the lift was installed as set forth in the order form. All lifts equipped with our 12 Volt DC solar powered package have a 1-year warranty on all solar components from the date of purchase.
- B. The company further expressly warrants that lifts purchased for personal, family, or household purposes shall be free from any manufacturer's defects in material or workmanship for a period of 2 years. The Sea-Drive has a 10-year limited warranty, and the Hefty Hoist Flat Plate has a 5-year limited warranty, provided Annual Service is performed and records are kept by a trained Golden Boat Lift service technician. Our underwater tracks and hardware are warranted for 1 year from defects in material and/or workmanship. On the Golden Boat Lifts Gatorvator's, Elevators, and Singletrack lifts with tracks in the water require *Sacrificial anodes be maintained, and an electrical disconnect, including neutral and ground, be installed and disconnected when the boat lift is not in use. Or a galvanic isolator properly connected between the electric source and boat lift on the grounding wire. If not, the warranty will be null and void. Under no circumstances will the warranty coverage extend to damage caused by electrolysis.
- C. The runabout series will be warranted for a one-year period from the date of delivery by seller to the original purchaser, which includes the electric motor and controls. The runabout series has a 5-year structural warranty. The EC line of Elevators will be warranted for a one-year period from the date of delivery by the seller to the original purchaser this includes the electric motor and controls. The Structure will be warranted for a period of 2 years. The Underwater tracks will be warranted for a period of one year. Under no circumstances will the warranty coverage extend to damage caused by electrolysis.
- D. The kayak Launch will be warranted from factory defects for a one-year period from the date of purchase by the seller to the original purchaser. Under NO CIRCUMSTANCES will the warranty coverage extend to damage caused by improper installation or use.
- E. The Tornado series motor and controls will be warranted for a 1-year period from the date of delivery by seller to the original purchaser. The Tornado series structure, hardware, and moving parts will be warranted for a 3-year period from the date of delivery by seller to the original purchaser. Under no circumstances will the warranty coverage extend to damage caused by electrolysis.

2. WHAT IS NOT COVERED BY THIS WARRANTY:

- A. The company makes no implied warranties with respect to lifts purchased for commercial purposes.



- B. All repairs after the applicable warranty period are the Owner's responsibility.
- C. Damage that is not the company's fault such as but not limited to damage caused by accidents, hurricanes, tropical storms, high winds, high water or tides, any acts of God, misuse, overloading, negligence, alteration, modification or abusive operation, is NOT covered by this limited warranty.
- D. Damage, which is caused by improper product selection, improper installation, failure to follow applicable installation and maintenance recommendations, or failure to follow applicable instructions or warnings is not covered by this limited warranty.
- E. All routine maintenance and periodic service is the Owner's responsibility and is not covered by this limited warranty.
- F. Boat lifts that were overloaded or weight was not centered, causing structural, gear or cable failure will not be covered by the limited warranty.

3. WARRANTY DISCLAIMERS:

- A. With respect to the product purchased or used for commercial purposes, the company makes no express warranties or implied warranty of merchantability or fitness for any particular purpose.
- B. Any applicable implied warranty, including any applicable warranty of merchantability or fitness for a particular purpose, is limited in duration to 2 years from the date of delivery from the seller.
- C. The company makes no express warranties regarding its products except as stated herein. No agent, employee, or representative of the company has authority to bind the company to an affirmation, representation, or warranty concerning the company's products except as stated herein.
- D. Failure to follow the instructions and guidelines listed within, but not limited to, the respective installation & operation manuals may void any applicable warranty.

4. WARRANTY LIMITATIONS:

- A. The Owner's remedies under this limited warranty are limited exclusively to repair or replacement of components, which fail due to manufacturer's defects in materials or workmanship during normal operations. If the purchasing party discovers a defect in the product, the company may, at its own digression, (1) replace the defective part, (2) repair the defect, or (3) refund, either in part or in its entirety, upon confirmation by the manufacturer that the product is indeed defective, provided that the company is notified about the defect within the time constraints outlined within the warranty.
- B. Changes to the product that are caused by general use, age, and the environment (such as marine growth and exposure to UV light) will not be classified as a defect. Consideration of a reported defect in the product will require physical proof to be provided to the manufacturer and may also require the defected part or product be returned at the purchasers' initial expense, to the manufacturer for further inspection. The product warranty will not apply if the purchasing party:



(1) fails to satisfy the criteria mentioned above, (2) fails to notify the manufacturer of a product defect before the stated deadline, regardless of when the defect was discovered. Proper notification for a defected product is defined as a written notice sent to the manufacturer from the purchaser and is not valid until receipt is confirmed by the manufacturer's response to the notification.

- C. The Company shall not be responsible for incidental or consequential damages, included, but not limited to, damages to property, loss of use, lost profits, or expenses for the inconvenience.
- D. Some states do not allow the exclusions or limitation of incidental or consequential damage, so the limitations or exclusions may not apply to you.

5. THE COMPANY'S RESPONSIBILITIES:

- A. The Company agrees to provide all necessary parts and materials only (no labor) to correct any warranted defect providing written notice is received by the Company within the applicable warranty period.

6. THE OWNER'S RESPONSIBILITIES:

- A. It is the responsibility of owner to ensure that each product is fit for its intended purpose and that the conditions it will be used in are suitable.
- B. The Boat Lift Cradles must remain completely out of the water when the boat lift is not in use.
- C. The product may require periodic maintenance, which is not covered by warranty. While the seller may be equipped to handle your service needs, periodic maintenance may be performed by anyone qualified to do so.
- D. A reasonable time for repairs must be allowed.

7. IF YOU HAVE QUESTIONS OR PROBLEMS:

- A. Should the Owner encounter a problem, which might be, recovered by this limited warranty, the Owner must contact the Company in writing within the applicable warranty period. The company's address for receipt of notice is Golden Manufacturing, Inc., 17611 East Street, North Fort Myers, Florida, 33917.
- B. The owner should provide the following information in its written notice: The type of product purchased, the purchase date, serial number, event dates, dealer names, the problem or question, and any other comments.
- C. This warranty gives you specific rights and you may also have other rights, which vary from state to state.



MAINTENANCE LOG

Tornado Boat Lift

Capacity: _____

INSTALLATION PROVIDER: _____ INSTALLATION DATE: _____

INSTALLATION ADDRESS: _____

MAINTENANCE PROVIDER	DATE	DESCRIPTION	INITIAL	SIGNATURE