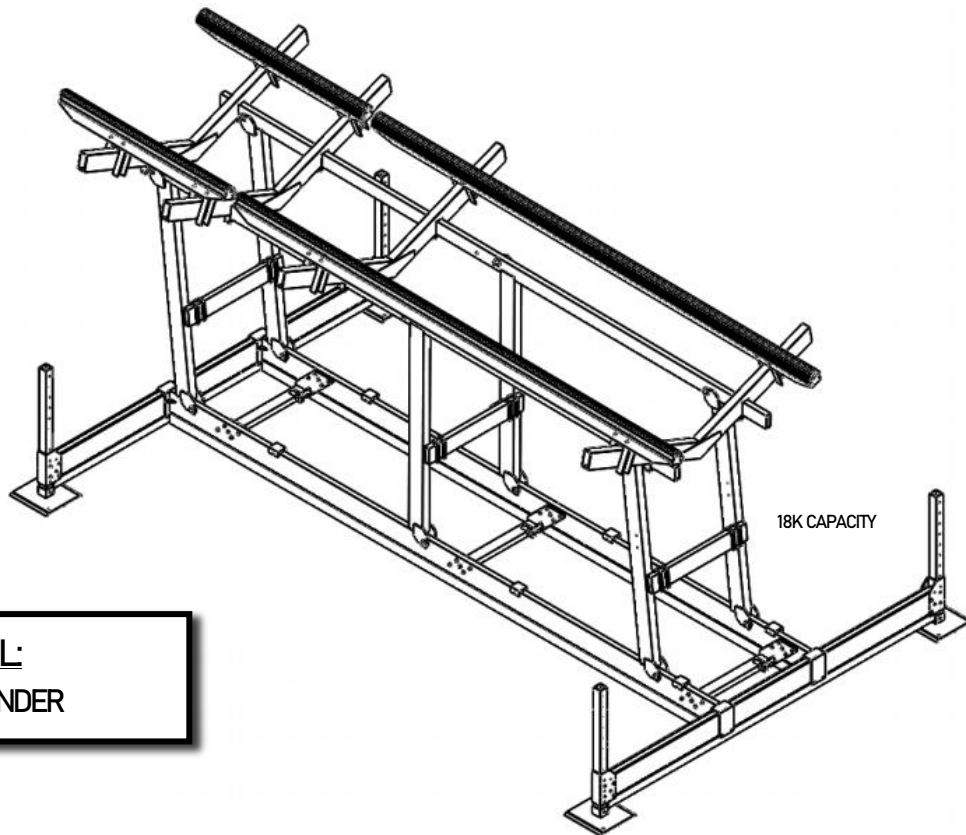




INSTALLATION MANUAL



MODEL:
6-CYLINDER

TORNADO LIFT



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

GoldenMarineSystems.com

GoldenBoatLifts.com

REVISION A
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TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
PRODUCT SPECIFICATIONS	2
SAFETY REQUIREMENTS.....	3
TORNADO LIFT OVERVIEW (15K).....	4
TORNADO LIFT OVERVIEW (18K).....	5
PART/HARDWARE IDENTIFICATION TABLE.....	6
GENERAL ASSEMBLY	7
MOUNT CROSS BEAM.....	7
ATTACH FOOT PAD.....	8
MOUNT SIDE BEAM**.....	9
ATTACH LOWER CYLINDER MOUNT**.....	10
MOUNT STERN SIDE H-FRAME	11
MOUNT BOW SIDE H-FRAME	12
MOUNT MIDDLE H-FRAME	13
MOUNT HYDRAULIC CYLINDER.....	14
MOUNT V-BUNK SUPPORT.....	16
ATTACH V-BUNK**.....	17
ATTACH V-BUNK BRACKET**.....	18
MOUNT ALUMINUM MULTI-BUNK.....	19
ATTACH GUIDE POLE MOUNTING BRACKET.....	20
ATTACH GUIDE POLE.....	21
LAUNCHING THE TORNADO LIFT.....	22
REFERENCE NOTES.....	23

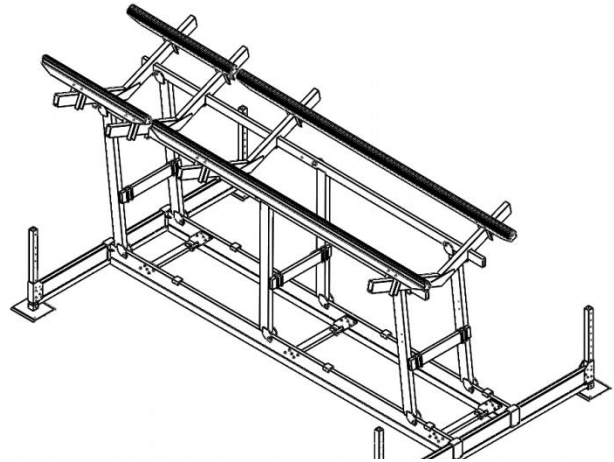
INTRODUCTION

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.



SPECIFICATIONS

- 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)

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).



**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

! 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



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 OPERATING 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.

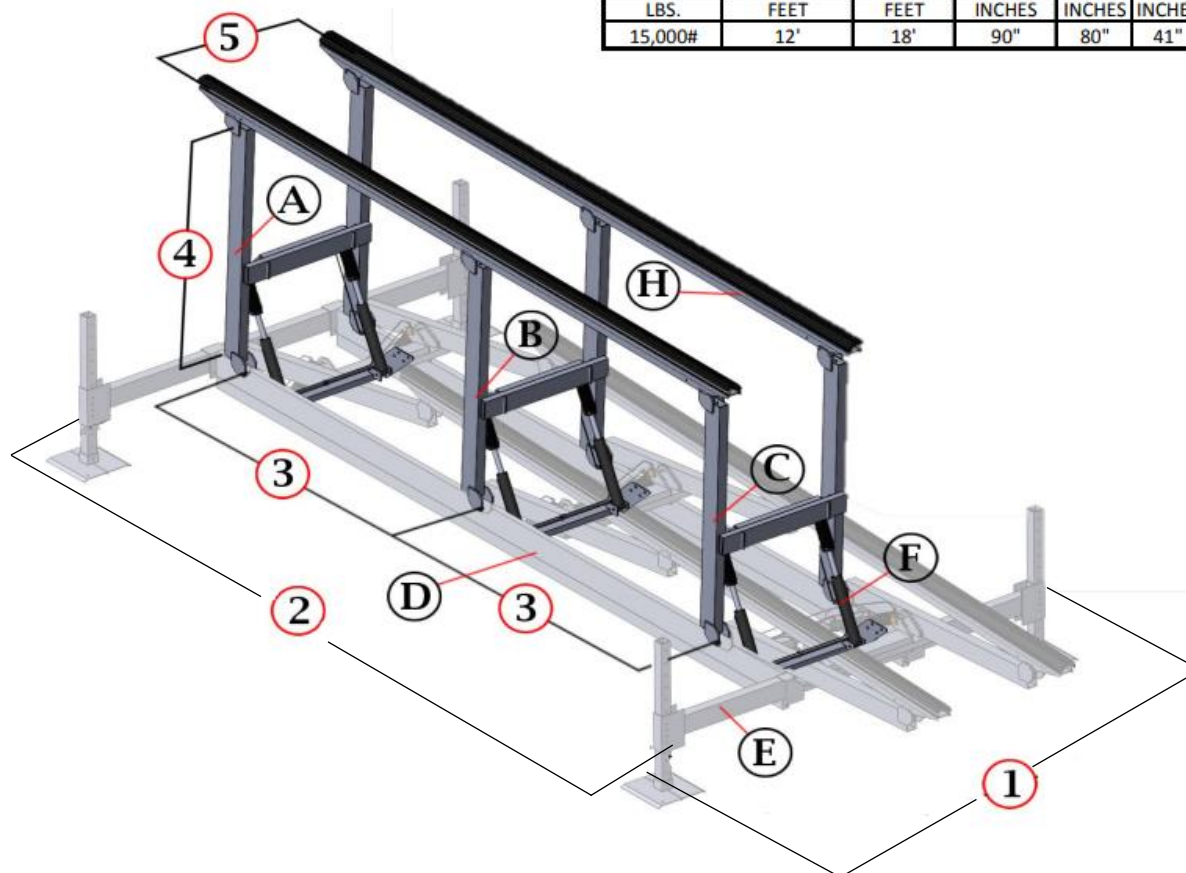
SAVE THESE INSTRUCTIONS



GOLDEN ENGINEERED 6-CYLINDER 15K HYDRAULIC TORNADO LIFTS

THE BOAT CENTER OF GRAVITY
NEEDS TO BE SET IN THE CENTER
OF THE BUNKS

CAPACITY	DIM: 1	DIM: 2	DIM: 3	DIM: 4	DIM: 5
LBS.	FEET	FEET	INCHES	INCHES	INCHES
15,000#	12'	18'	90"	80"	41"

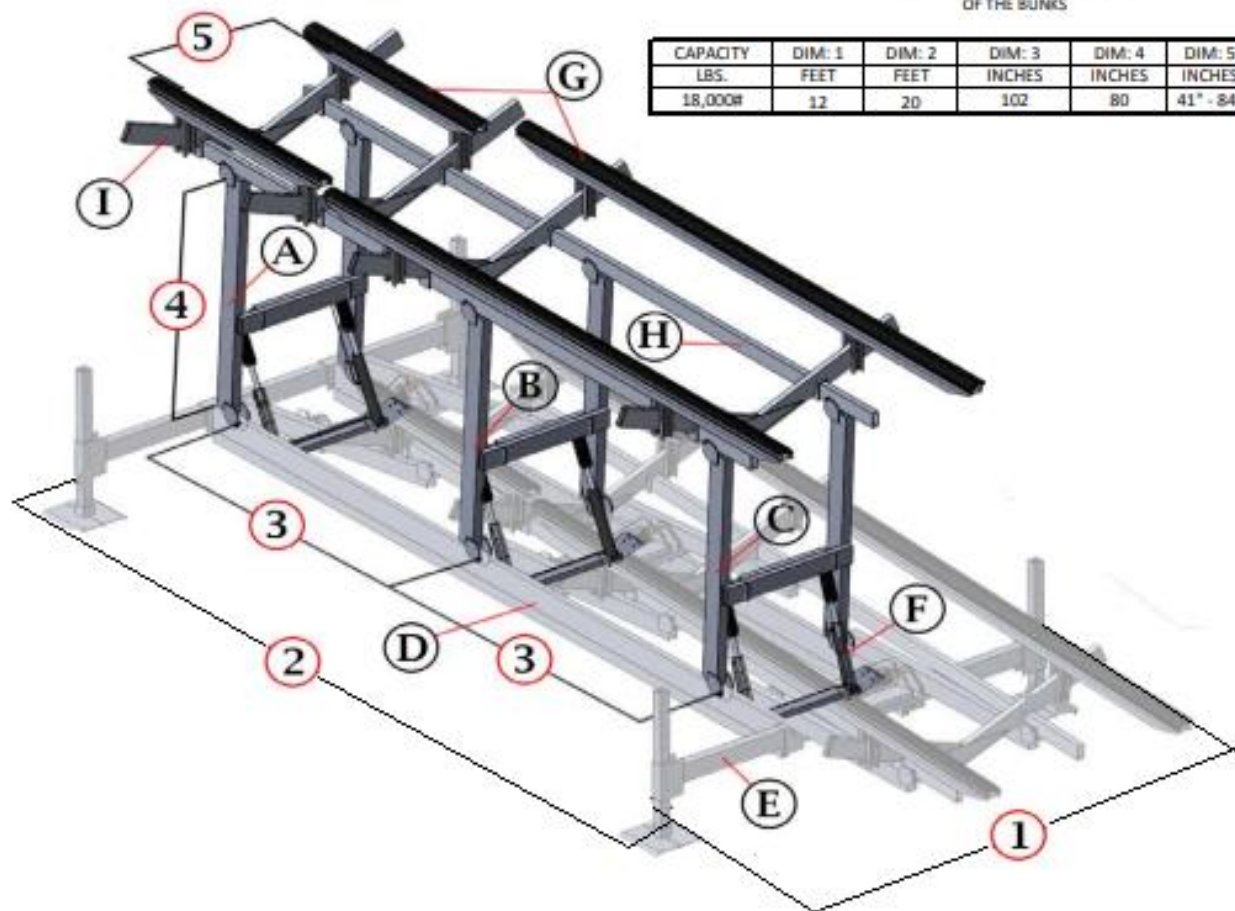


	A	B	C	D	E	F	G	
LIFT CAPACITY	FRONT H-FRAME	CENTER H-FRAME	REAR H-FRAME	SIDE BEAMS	CROSS BEAMS	CYLINDERS	BUNKS	STROKE
LBS.	INCHES	INCHES	INCHES	INCHES	INCHES	DIA.	FEET.	INCHES
15,000#	3 X 6 X .250 WALL REC. TUBE 79.5" LOA WITH RAM MOUNTS	3 X 6 X .250 WALL REC. TUBE 78.25" LOA WITH RAM MOUNTS	3 X 6 X .250 WALL REC. TUBE 77" LOA WITH RAM MOUNTS	2 X 12 X .250 X 216" LOA	3 X 8 X .250 X 144" LOA	2.5"	2-18' LOA	16"



GOLDEN ENGINEERED 6-CYLINDER 18K HYDRAULIC TORNADO LIFTS

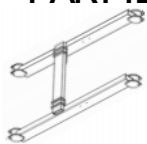
THE BOAT CENTER OF GRAVITY
NEEDS TO BE SET IN THE CENTER
OF THE BUNKS



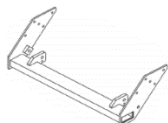
CAPACITY LBS.	DIM: 1 FEET	DIM: 2 FEET	DIM: 3 INCHES	DIM: 4 INCHES	DIM: 5 INCHES
18,000#	12	20	102	80	41" - 84"

	A	B	C	D	E	F	G	H	I	
LIFT CAPACITY LBS.	FRONT H-FRAME INCHES	CENTER H-FRAME INCHES	REAR H-FRAME INCHES	SIDE BEAMS INCHES	CROSS BEAMS INCHES	CYLINDERS DIA.	BUNKS FEET.	V SUPPORT INCHES	BUNK V INCHES	STROKE INCHES
18,000#	3 X 6 X .250 WALL REC. TUBE 79.5" LOA WITH RAM MOUNTS	3 X 6 X .250 WALL REC. TUBE 78.25" LOA WITH RAM MOUNTS	3 X 6 X .250 WALL REC. TUBE 77" LOA WITH RAM MOUNTS	2 X 12 X .250 X 240" LOA	3 X 9 X .250 X 144" LOA	3"	2-6' LOA 2- 16' LOA	2 X 5 X .250 X 240" LOA	2 X 5 X .250 X 90" @ 22 DEG. OUT/OUT	16"

PART IDENTIFICATION



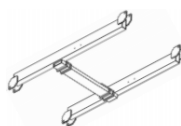
Stern Side H-Frame



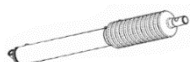
Lower Cylinder Mount



Cross Beam



Bow Side H-Frame



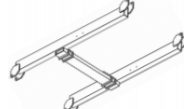
Hydraulic Cylinder



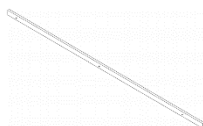
Aluminum Multi-Bunk



Side Beam



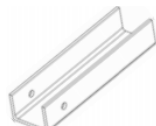
Middle H-Frame



V-Bunk Support ***



V-Bunk ***



V-Bunk Bracket ***

HARDWARE IDENTIFICATION



(12)

Hinge Bearing



1/8" (24)

Cotter Pin



1/2" (46)
3/8" (72)

Lock Washer



1" (12)

Hinge Pin



1/2" (46)
3/8" (72)

Hex Nut



(12)

Cylinder Pin



3/8" x 1-1/2"L (8)
3/8" x 4"L (16)
3/8" x 4-1/2"L (32)
3/8" x 5"L (16)
1/2" x 3-1/2"L (30)
1/2" x 4-1/2"L (16)

Hex Bolt



3/16" (24)

Lollipop Washer



1/2" (92)
3/8" (128)
3/4" (12)

Flat Washer

REQUIRED TOOLS



Wrench 9/16"



Wrench 3/4"



Pliers



Mallet

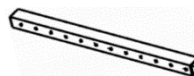


Pry Bar

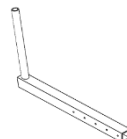
OPTIONAL PART(S)



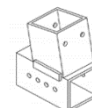
Foot Pad



Square Tube Leg



Guide Pole Arm



Guide Pole Mount

Note: Hardware amounts may vary depending on optional accessories and capacity.

*** Note: 18K capacity specific parts only



GENERAL ASSEMBLY INSTRUCTIONS

1. Please read all instructions thoroughly before starting installation of the Tornado Boat Lift.
2. Please ensure the installation crew is properly trained, licensed, insured, and qualified to install the Tornado Boat Lift. If this is a first-time installation, a representative will assist in the installation and initial lifting of the Tornado Boat Lift.
3. Please ensure that there is an appropriate area cleared in order to lay out all components, parts and tools associated with the installation of the Tornado Boat Lift.

MOUNT CROSSBEAMS

Note: Cross Beams will ship with leg pockets pre-assembled.

Note: Ensure Crossbeam and Leg Pocket is oriented in the upward position as shown in Figure 1.

Note: The Square Tube Leg(s) referenced in this step is an optional part purchased with the Tornado Boat Lift. If the Square Tube Leg part was not ordered and included, you may skip to the next step.

1. Slide Crossbeam Leg Pocket over Square Tube Leg as shown in Figure 1 and adjust to desired height.
2. Attach one (1) 3/8" Flat Washer onto two (2) 3/8" x 4-1/2" Hex Bolts and insert them into Leg Pocket, securing the Crossbeam to the Square Tube Leg shown in Figure 2.
3. Attach one (1) 3/8" Flat Washer, one (1) 3/8" Lock Washer, and one (1) 3/8" Hex Nut over the two (2) protruding ends of the Hex Bolts and securely fasten with appropriate wrench until secure as shown in Figure 2.
4. Repeat these steps three (3) more times, once for the opposite side of the Cross Beam, and twice for the second Cross Beam.

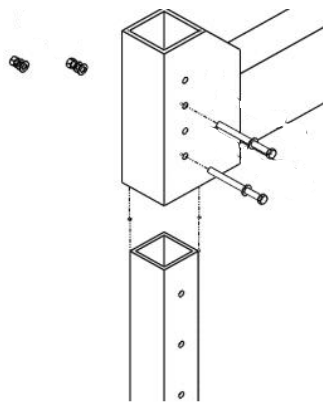


Figure 1

PARTS REQUIRED TO MOUNT CROSSBEAM

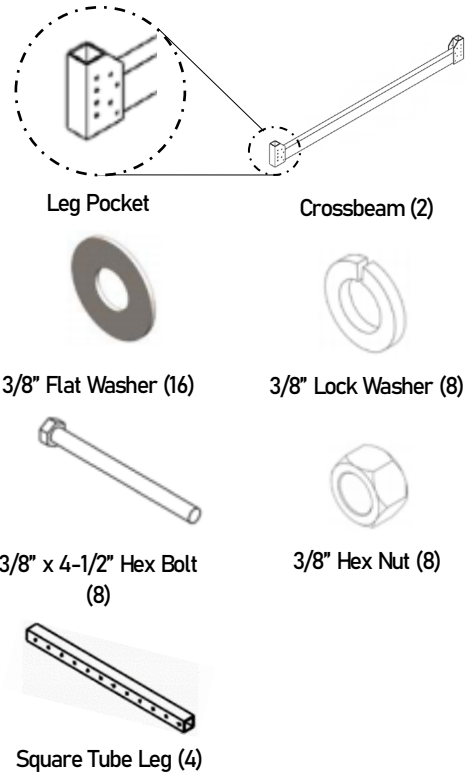
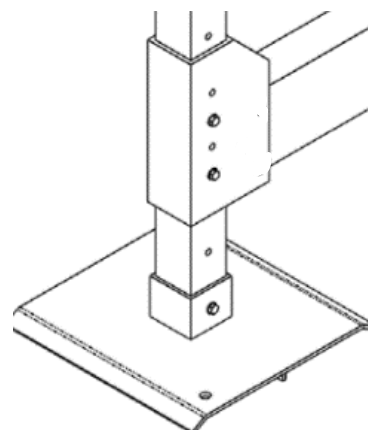


Figure 2

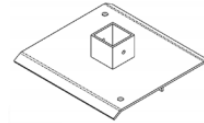


ATTACH FOOT PADS

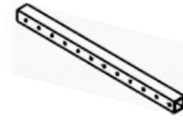
Note: The Foot Pad(s) referenced in this step is an optional part purchased with the Tornado Boat Lift. If the Foot Pad part was not ordered and included, you may skip to the next step.

- 1) Attach one (1) Foot Pad to the end of one (1) Square Tube Leg from previous step and align as shown in Figure 3.
- 2) Attach one (1) 3/8" Flat Washer to one (1) 3/8" Hex Bolt and insert through hole(s) in the Foot Pad and Square Tube Leg as shown in Figure 3.
- 3) Attach one (1) 3/8" Lock Washer and one (1) 3/8" Hex Nut to the protruding end of the Hex Bolt and securely fasten with appropriate wrench until secure.
- 4) Repeat these steps for the remaining three (3) Foot Pads.

PARTS REQUIRED TO ATTATCH FOOT PAD



Foot Pad (4)



Square Tube Leg (4)



3/8" Flat Washer (4)



3/8" Lock Washer (4)



3/8" x 4-1/2" Hex Bolt
(4)



3/8" Hex Nut (4)

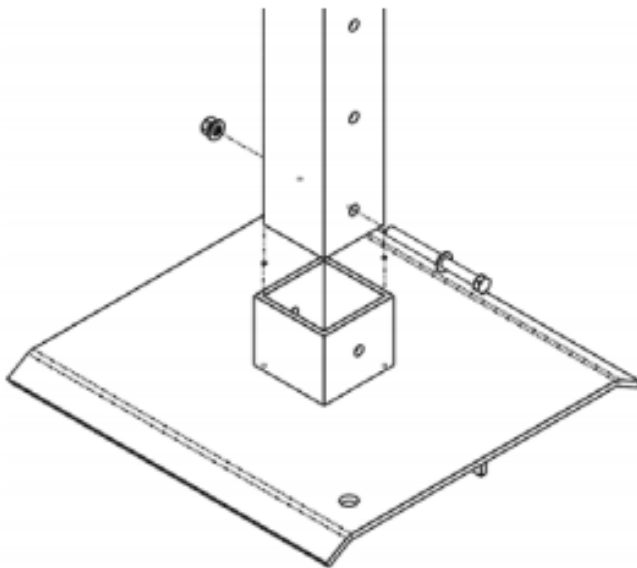


Figure 3

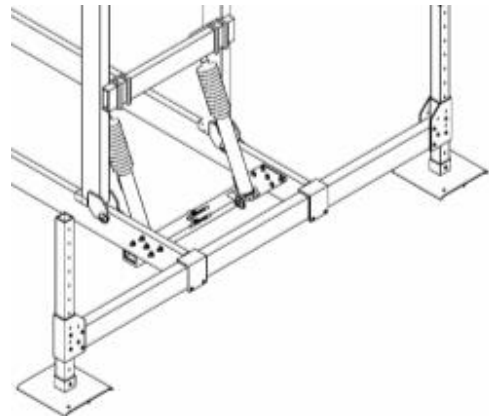


Figure 4

MOUNT SIDE BEAMS**

Note: Ensure Side Beam Saddle is positioned so that open end of saddle is facing downward during installation shown in Figure 5.

1. Slide the Side Beam Saddle down over the Cross Beam as shown in Figure 5.

Note: Ensure mounting holes in the bottom of the Side Beam Saddle rest below and clear of the Cross Beam.

2. Attach one (1) 3/8" Flat Washer over two (2) 3/8" x 4-1/2" Hex Bolts and insert them into the mounting holes on the bottom of the Side Beam Saddle as shown in Figure 5.
3. Attach one (1) 3/8" Flat Washer, one (1) 3/8" Lock Washer, and one (1) 3/8" Hex Nut to the two (2) protruding ends of the Hex Bolts and hand tighten.

Note: It is important not to over tighten Hex Nuts to allow for Side Beam adjustability.

4. Repeat these steps three (3) more times, once for the opposite side of the Side Beam, and twice for the second Side Beam.

Note: Please return to this step when instructed to full tighten hardware.

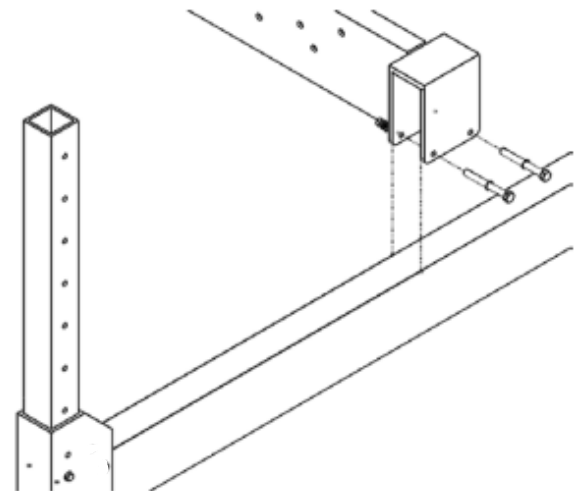
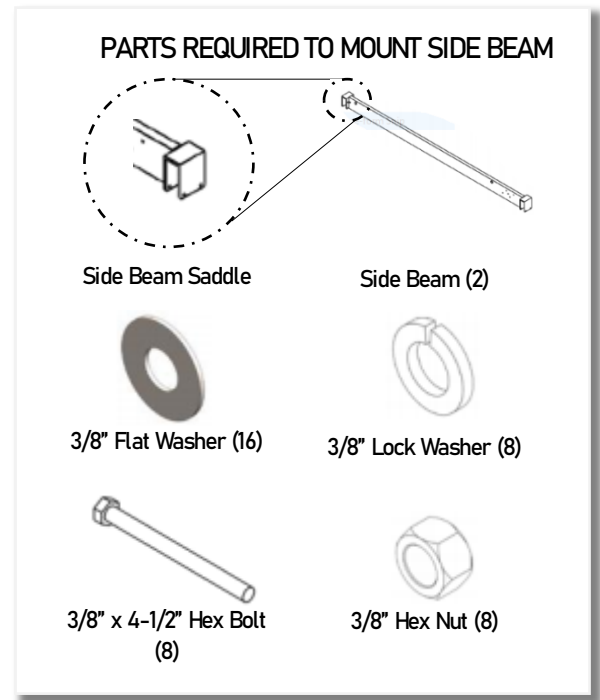


Figure 5

ATTACH LOWER CYLINDER MOUNT**

Note: Ensure lower Cylinder Mount is between both Side Beams when mounting.

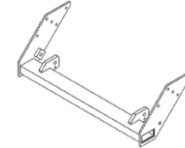
1. Align the holes on the Lower Cylinder Mount with the corresponding holes on the Side Beam as shown in figure 6.
2. Attach one (1) 1/2" Flat Washer to five (5) 1/2" x 3-1/2" Hex Bolts and insert into the corresponding holes as shown in Figure 6.
3. Attach one (1) 1/2" Flat Washer, one (1) 1/2" Lock Washer, and one (1) 1/2" Hex Nut to each of the five (5) protruding ends of the Hex Bolts and hand tighten.

Note: It is important not to over tighten Hex Nuts to allow for Lower Cylinder Mount adjustability.

4. Repeat these steps for three (3) more times, once for the other side of the Lower Cylinder Mount, and twice for the second mount.

Note: Please return to this step when instructed to fully tighten hardware.

PARTS REQUIRED TO MOUNT LOWER CYLINDER MOUNT



Lower Cylinder Mount (3)



1/2" Flat Washer (72)



1/2" Lock Washer (306)



1/2" x 3-1/2" Hex Bolt
(36)



1/2" Hex Nut (36)

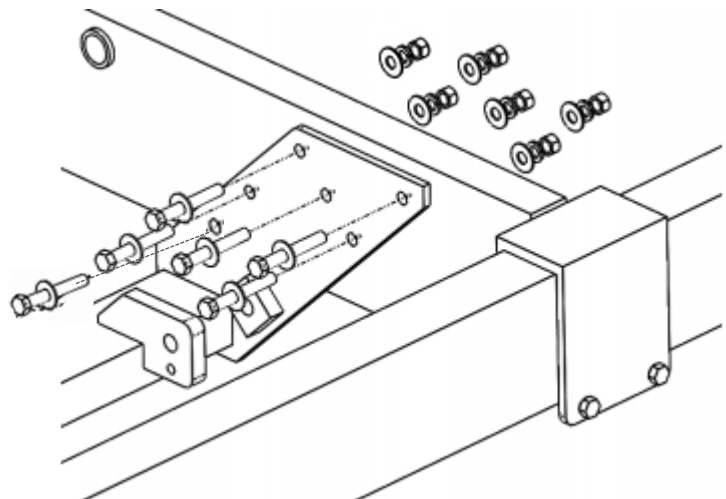


Figure 6

MOUNT STERN SIDE H-FRAME

Note: For this step, ensure the Stern Side H-Frame is being used.

Note: Hinge Bushings are preinstalled on Side Beam.

1. Align the mounting holes on the Stern Side H-Frame hinge plate with the Hinge Bushings located on the Side Beam as shown in Figure 8.

Note: Stern Side H-Frame should be oriented so that the Cylinder Mounting Cross Support overhangs the stern side Cross Beam as shown in Figure 7.

2. Insert one (1) 1/8" Cotter Pin into one (1) 1" Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
3. Attach a Lollipop Washer to the open end of the Hinge Pin.
4. Slide the Hinge Pin through the hinge plate as shown in Figure 8.
5. Insert one (1) Lollipop Washer and one (1) 1/8" Cotter Pin into the protruding end of the Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
6. Repeat this step for the opposite side of the Stern Side H-Frame.

PARTS REQUIRED TO MOUNT STERN SIDE H-FRAME

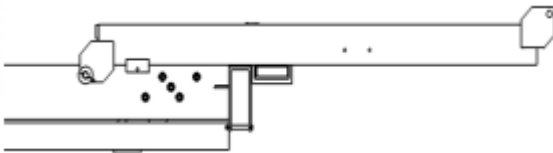
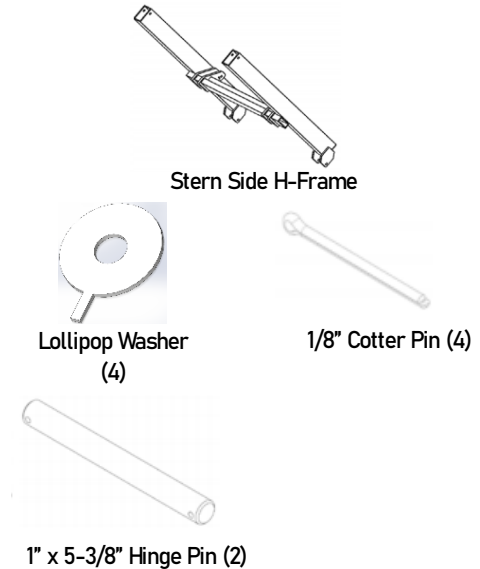


Figure 7

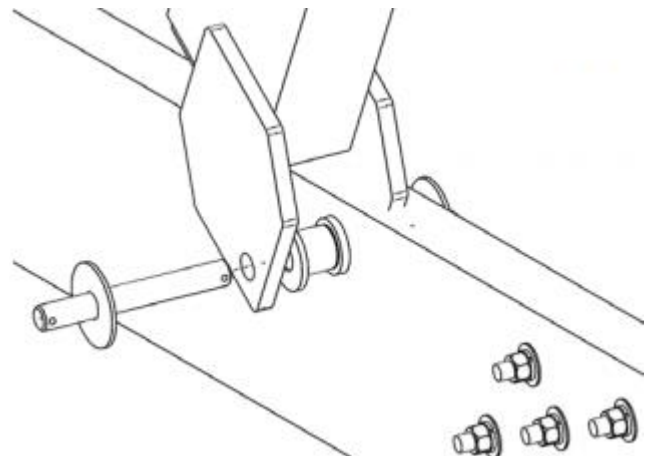


Figure 8

MOUNT BOW SIDE H-FRAME

Note: For this step, ensure the Bow Side H-Frame is being used.

Note: Hinge Bushings are preinstalled on Side Beam.

1. Align the mounting holes on the Bow Side H-Frame hinge plate with the Hinge Bushings located on the Side Beam as shown in Figure 10.
2. Insert one (1) 1/8" Cotter Pin into one (1) 1" Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
3. Attach a Lollipop Washer to the open end of the Hinge Pin.
4. Slide the Hinge Pin through the hinge plate as shown in Figure 10.
5. Insert one (1) Lollipop Washer and one (1) 1/8" Cotter Pin into the protruding end of the Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
6. Repeat this step for the opposite side of the Bow Side H-Frame.

PARTS REQUIRED TO MOUNT BOW SIDE H-FRAME

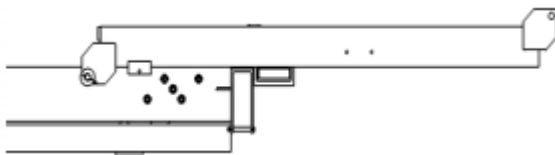
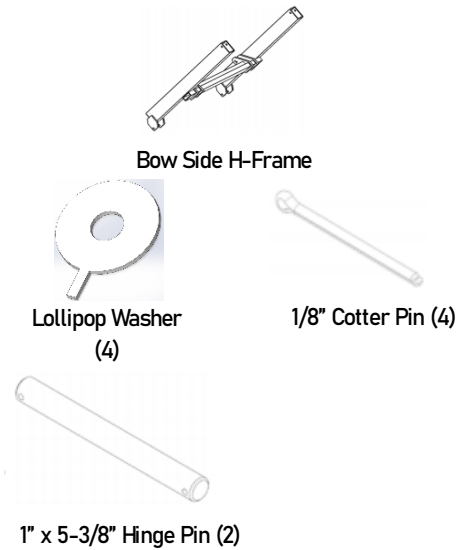


Figure 9

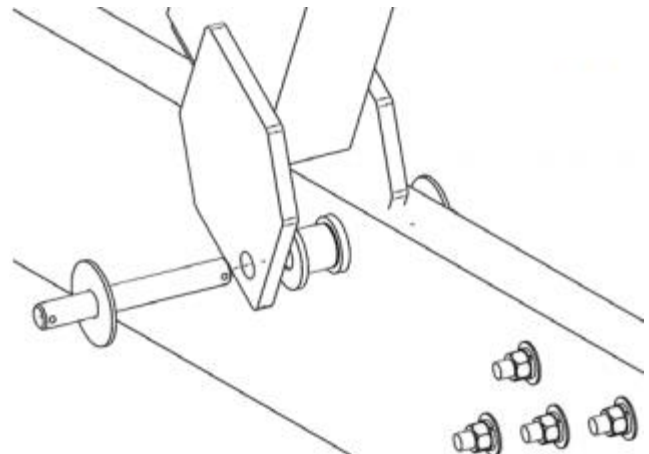


Figure 10

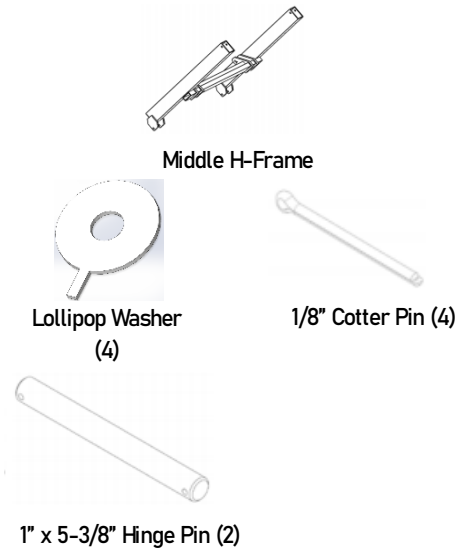
MOUNT MIDDLE H-FRAME

Note: For this step, ensure the Middle H-Frame is being used.

Note: Hinge Bushings are preinstalled on Side Beam.

1. Align the mounting holes on the Middle H-Frame hinge plate with the Hinge Bushings located on the Side Beam as shown in Figure 10.
2. Insert one (1) 1/8" Cotter Pin into one (1) 1" Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
3. Attach a Lollipop Washer to the open end of the Hinge Pin.
4. Slide the Hinge Pin through the hinge plate as shown in Figure 10.
5. Insert one (1) Lollipop Washer and one (1) 1/8" Cotter Pin into the protruding end of the Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
6. Repeat this step for the opposite side of the Middle H-Frame.

PARTS REQUIRED TO MOUNT MIDDLE H-FRAME

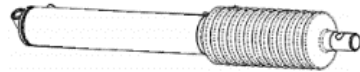


MOUNT HYDRAULIC CYLINDER

Note: Ensure Hydraulic Cylinder is oriented so that the lower mounting hole is facing downward.

1. Align the lower Hydraulic Cylinder mounting hole with the corresponding holes on the Lower Cylinder Mount as shown in Figure 11.
2. Insert one (1) 1" Cylinder Pin into the cylinder hinge plate through the Hydraulic Cylinder lower mounting hole as shown in Figure 11.
3. From the inside of the hinge plate, insert one (1) 3/8" Hex Bolt through the hinge plate and the lower hole on the Cylinder Pin.
4. Attach one (1) 3/8" Lock Washer and one (1) 3/8" Hex Nut to the protruding end of the Hex Bolt and fasten with appropriate wrench until secure as shown in Figure 11.
5. Repeat these steps for the remaining five (5) Hydraulic Cylinders.

PARTS REQUIRED TO MOUNT HYDRAULIC CYLINDER(S)



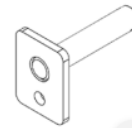
Hydraulic Cylinder (6)



3/8" x 1-1/2" Hex Bolt (6)



3/8" Lock Washer (6)



3/4" Cylinder Pin (6)



3/8" Hex Nut (6)

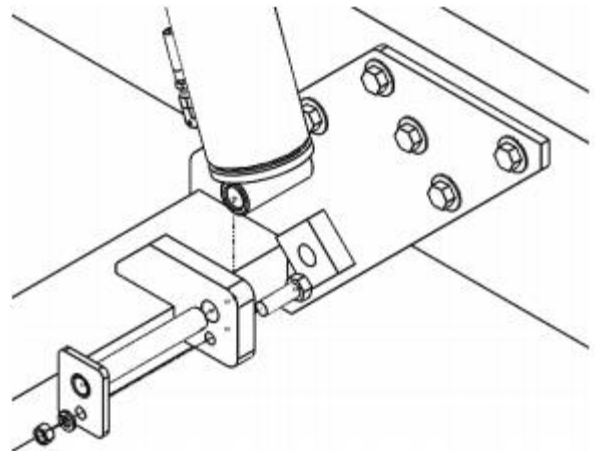


Figure 11

MOUNT HYDRAULIC CYLINDER(S) cont.

Note: Ensure Hydraulic Cylinder(s) are tightly fastened as described in previous step before continuing.

1. Align the upper Hydraulic Cylinder mounting hole with the corresponding holes on the H-Frame as shown in Figure 12 & 13.

Note: The H-Frame may need to be lifted and rotated upward to allow proper alignment.

2. Insert one (1) 1" Cylinder Pin into the cylinder mounting plate through the Hydraulic Cylinder upper mounting hole as shown in Figure 13.
3. From the inside of the mounting plate, insert one (1) 3/8" Hex Bolt through the mounting plate and the hole on the Cylinder Pin shown in Figure 13.
4. Attach one (1) 3/8" Lock Washer and one (1) 3/8" Hex Nut to the protruding end of the Hex Bolt and fasten with appropriate wrench until secure as shown in Figure 13.
5. Repeat these steps for the remaining five (5) Hydraulic Cylinders.

PARTS REQUIRED TO MOUNT HYDRAULIC CYLINDER(S)



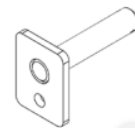
Hydraulic Cylinder (6)



3/8" x 1-1/2" Hex Bolt (6)



3/8" Lock Washer (6)



3/4" Cylinder Pin (6)



3/8" Hex Nut (6)

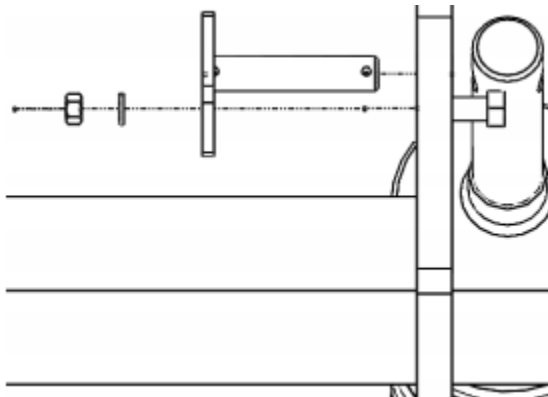


Figure 12

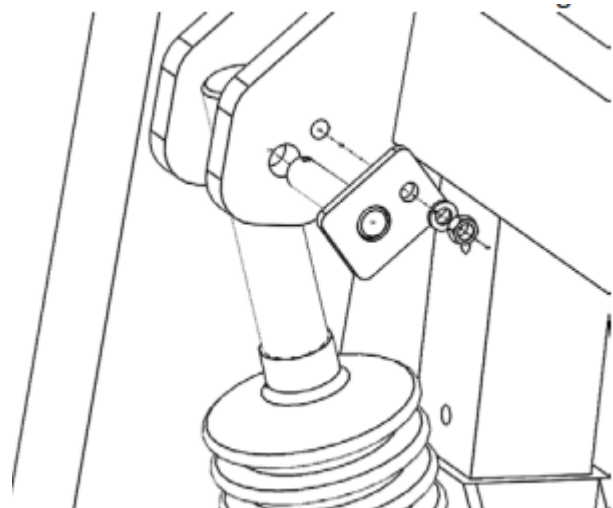


Figure 13

MOUNT V-BUNK SUPPORT

Note: This step only applies to the 18K capacity Tornado Boat lift. When assembling the 15K Capacity lift, please skip to the next step.

1. Align the 1" holes of the H-Frame(s) with the corresponding holes on the V-Bunk Support, resting the V-Bunk Support on top of the H-Frame(s) as shown in Figure 14.
2. Insert one (1) 1/8" Cotter Pin into one (1) 1" Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
3. Attach a Flat Washer to the open end of the Hinge Pin.
4. Insert the Hinge Pin through the hinge plate as shown in Figure 15.

Note: Please a Lollipop Washer between the hinge plate and the V-Bunk Support on both sides as you slide the Hinge Pin through.

5. Insert one (1) Flat Washer and one (1) 1/8" Cotter Pin into the protruding end of the Hinge Pin, bending the tines of the Cotter Pin outward and apart, securing the Cotter Pin within the Hinge Pin.
6. Repeat this step five (5) more times, twice for the other H-Frames and three times for the other V-Bunk Support.

PARTS REQUIRED TO MOUNT V-BUNK SUPPORT

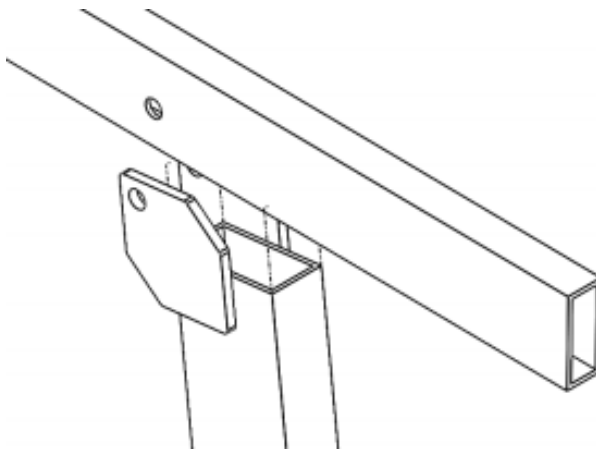


Figure 14

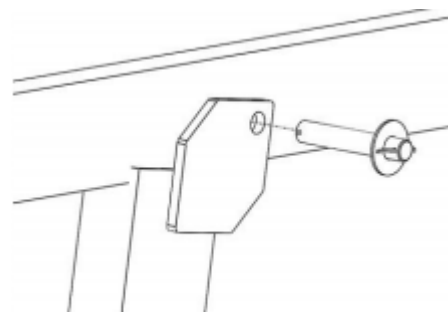


Figure 15

ATTACH V-BUNK**

Note: This step only applies to the 18K capacity Tornado Boat lift. When assembling the 15K Capacity lift, please skip to the next step.

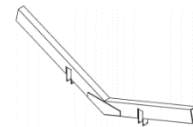
1. Align the bracket of the V-Bunk so it is resting on top of the V-Bunk Support.
2. Attach one (1) 3/8" Flat Washer to two (2) 3/8" Hex Bolts and insert the Hex Bolts into the corresponding holes on the V-Bunk as shown in Figure 16.
3. Attach one (1) Lock Washer and one (1) Hex Nut to the protruding ends of the Hex Bolts and hand tighten.

Note: It is important not to over tighten Hex Nuts to allow for adjustability.

4. Repeat these steps seven (7) more times, once for the other side of the V-Bunk, and six more times for the other V-Bunks.

Note: Please return to this step when instructed to fully tighten hardware.

PARTS REQUIRED TO MOUNT V-BUNK



V-Bunk (4)



3/8" Flat Washer (32)



3/8" Lock Washer (16)



3/8" x 4-1/2" Hex Bolt
(16)



3/8" Hex Nut (16)

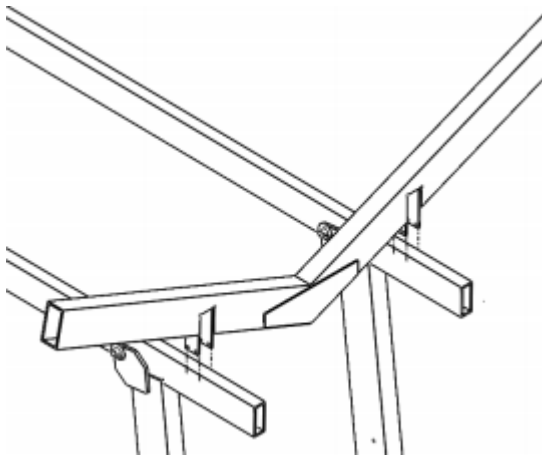


Figure 16

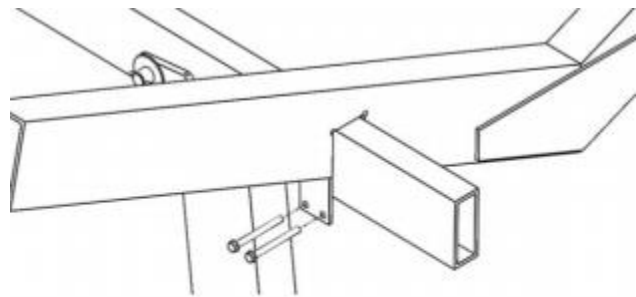


Figure 17

ATTACH V-BUNK BRACKET**

Note: This step only applies to the 18K capacity Tornado Boat lift. When assembling the 15K Capacity lift, please skip to the next step.

1. Align the 1/2" holes of the V-Bunk Brackets so that they are above and below the V-Bunk arm as shown in Figure 18.
2. Attach one (1) 1/2" Flat Washer over two (2) 1/2" Hex Bolts and insert them into the corresponding holes as shown in Figure 18.
3. Attach one (1) 1/2" Lock Washer and one (1) 1/2" Hex Nut over the protruding ends of the Hex Bolts and hand tighten.

Note: It is important not to over tighten Hex Nuts to allow for adjustability.

5. Repeat these steps seven (7) more times, once for the other side of the V-Bunk, and six more times for the other V-Bunks.

Note: Please return to this step when instructed to fully tighten

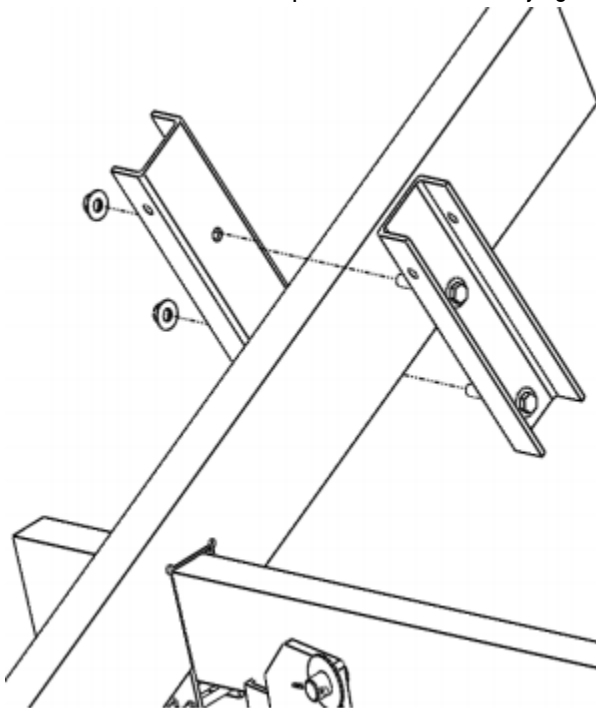
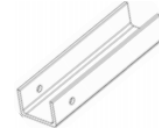


Figure 18

PARTS REQUIRED TO MOUNT V-BUNK BRACKET



V-Bunk Brackets (16)



1/2" Flat Washer (32)



1/2" Lock Washer (16)



1/2" x 4-1/2" Hex Bolt
(16)



1/2" Hex Nut (16)

Note: Before proceeding to the following steps, please revisit steps with asterisks and use a wrench to tighten all hardware that was originally hand tightened. Failure to tighten all hardware as described can cause damage to the Tornado Boat Lift and/or serious injury/death.

MOUNT ALUMINUM MULTI-BUNK

-15K CAPACITY LIFT

1. Align the 3/4" hole in the Aluminum Multi-Bunk with the corresponding mounting hole in the top of the Stern Side H-Frame.
2. Insert one (1) 1/8" Cotter Pin into one end of a 3/4" Hinge Pin. Using Pliers, bend the tines apart and away from each other, securing it to the hinge pin.
3. Attach a 3/4" Flat Washer over the Hinge Pin and insert it into the bunk support as shown in Figure 19-A.

Note: Do not fully insert Hinge Pin through H-Frame until completing next step.

4. Insert a Lollipop Washer between the Bunk and the H-Frame on both sides as shown in Figure 15 before fully inserting the Hinge Pin through the H-Frame and out of the opposite side of the Bunk.
5. Attach a 3/4" Flat Washer and 1/8" Cotter Pin to the protruding end of the Hinge Pin. Using Pliers, bend the tines apart and away from each other, securing it to the hinge pin.
6. Repeat this step three (3) more times, once for the opposite end of the Bunk, and twice for the second Bunk.

MOUNT ALUMINUM MULTI-BUNK

-18K CAPACITY LIFT

1. Align the 3/8" holes in the Aluminum Multi-Bunk with the corresponding mounting holes on the V-Bunk Brackets.
2. Insert one (1) 3/8" Flat Washer over two (2) 3/8" Hex Bolts and insert them into the holes on the Bunk as shown in Figure 19-B.
3. Attach one (1) 3/8" Lock Nut and one (1) 3/8" Hex Nut to the protruding ends of the Hex Bolts and tighten with appropriate wrench.
4. Repeat these steps seven (7) more times, once for the other side of the Bunk, and six more times for the other Bunks.

PARTS REQUIRED TO MOUNT ALUMINUM MULTI-BUNK

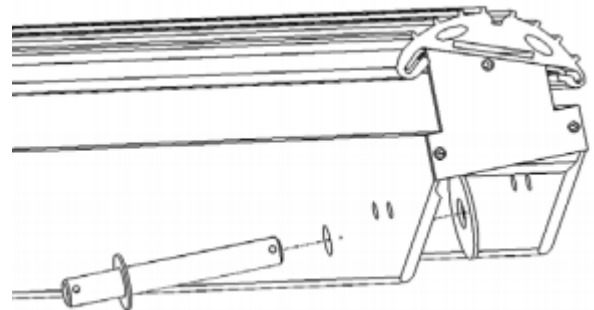
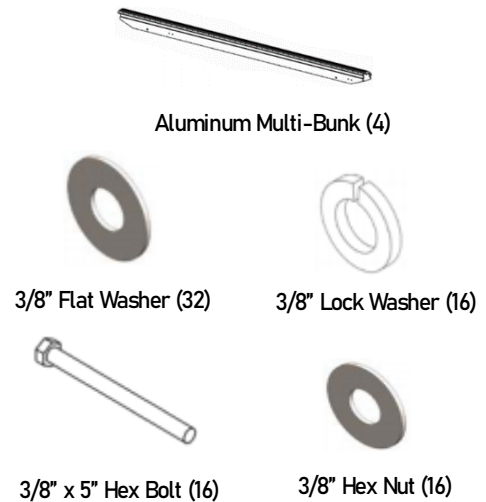


Figure 19-A

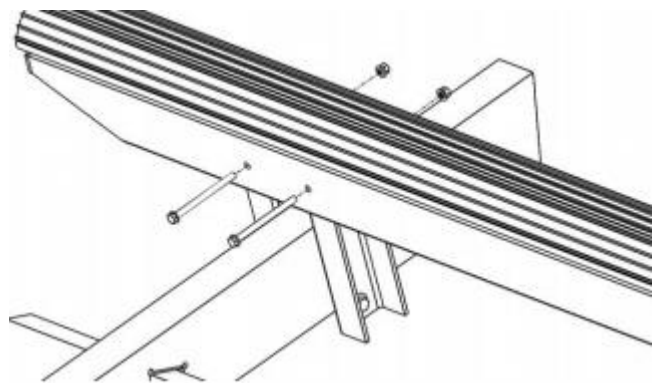


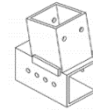
Figure 19-B

ATTACH GUIDE POLE MOUNTING BRACKET(S)

Note: The Guide Pole Mounting Bracket referenced in this step are optional parts purchased with the Tornado Boat Lift. If the Guide Pole Mounting Bracket part was not ordered and included, you may skip this and the following step.

1. Insert the Guide Pole Mounting Bracket into the bottom of the Bunk support as depicted in Figure 20.
2. Align holes in Bunk support and Guide Pole Mounting Bracket, making sure the lower guide adjustment tube is angled upward toward the outside of the lift, and downward toward the inside of the lift as shown in Figure 21.
3. Attach one (1) 3/8" Flat Washer over two (2) Hex Bolts and insert into the corresponding holes in the Bunk support as depicted in Figure 20.
4. Attach one (1) Lock Washer and one (1) Hex Nut to each of the protruding Hex bolts and fasten with appropriate wrench until secure.
5. Repeat this step three (3) more times, once for the opposite end of the Bunk, and twice for the second Bunk.

PARTS REQUIRED TO INSTALL GUIDE POLE MOUNTING BRACKET



Guide Pole Mounting Bracket (4)



3/8" Lock Washer (8)



3/8" Hex Nut (8)



3/8" x 5" Hex Bolt (8)



3/4" Flat Washer (16)

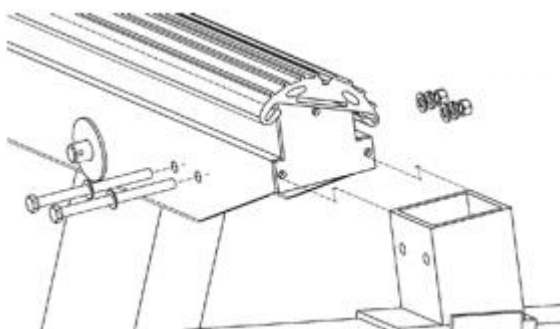


Figure 20

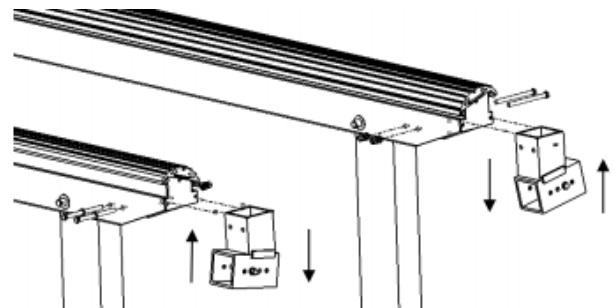


Figure 21

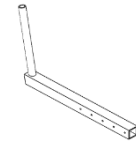
ATTACH GUIDE POLE(S)

Note: The Guide Poles referenced in this step are optional parts purchased with the Tornado Boat Lift. If the Guide Pole part was not ordered and included, you are finished with the Tornado Boat Lift installation.

1. Insert the Guide Pole into the Guide pole Mounting Bracket so that the Guide Pole arm is facing outward and upward as shown in Figure 22.
2. Adjust the Guide Pole to the desired outer dimensions and align the mounting holes accordingly.
3. Attach one (1) Flat Washer to one (1) Hex Bolt and insert into the mounting hole.
4. Attach one (1) Flat Washer, one (1) Lock Washer, and one (1) Hex Nut to the protruding end of the Hex Bolt and fasten with appropriate wrench until secure.
5. Repeat this step three (3) more times, once for the opposite end of the Bunk, and twice for the second Bunk.

Note: It is important to review all the steps in this manual before operating the Tornado Boat Lift to ensure all parts and hardware have been installed correctly. Failure to do this may result in damage to the Tornado Boat lift and/or serious injury/death.

PARTS REQUIRED TO INSTALL GUIDE POLE



Guide Pole (4)



3/8" Lock Washer (4)



3/8" Hex Nut (4)



3/8" x 4-1/2" Hex Bolt (4)



3/8" Flat Washer (8)

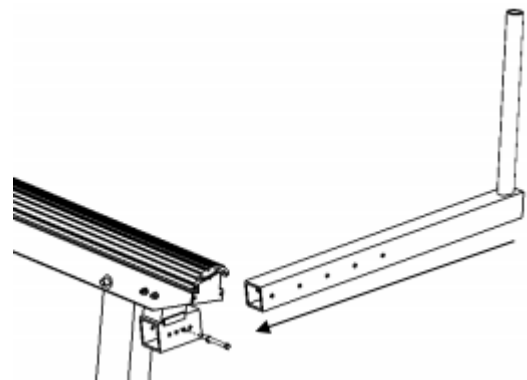


Figure 22



Note: Before launching the Tornado 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 launch and operate the Tornado Boat Lift may cause damage to the lift and/or personal injury/death.

LAUNCHING THE TORNADO LIFT

Note: It is important to determine the appropriate depth to store the lift to efficiently use the maximum lifting height.

Note: It is important to consider how much the water levels fluctuate in the region the lift is stored.

1. After completing all steps in the HYDRAULIC POWER PACK INSTALLATION MANUAL and testing the hydraulics, disconnect the hydraulic hoses from the pump end and connect the hydraulic hoses together to ensure they remain clean while launching the lift.
2. To launch the lift, it is recommended to use flotation devices to maneuver the lift safely and carefully into the desired location, only utilizing properly trained personnel.

Note: It may be necessary to have a certified diver tighten and secure all hardware after lift is positioned into place.

3. After securing the lift in the appropriate location, the hydraulic hoses should carefully be reattached to the pump.

LEVELING THE TORNADO LIFT

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

1. Now that the lift is in its final position, measure the distance from each corner of the lift to the surface of the water. The four measurements should all be within 1-1/2" of each other, otherwise leg adjustments may need to be made.
2. Carefully maneuver the boat by hand to the recommended position on the lift.

Note: Please be aware that the lift may settle during the first several times lifting the boat, thus, take extra precautions ensuring that there are no obstructions and no people near or around the lift or boat.

3. Slowly lift the boat upward, pausing every 6" to ensure the lift is staying level. Continue this process until the boat is fully lifted out of the water.

Note: At any time, the lift may begin settling and becoming unlevel. If this occurs, it is recommended to lower and remove the boat from the lift so that the appropriate adjustments can be made to make the lift level again, repeating these steps as necessary.

Note: It is important to check the level of the lift regularly for the first few months to ensure that the lift is not settling and becoming unlevel. Failure to do this may result in damage to the lift or bodily harm.



REFERENCE NOTES

Tornado Boat Lift (4-Cylinder)

Capacity: 15K / 18K

INSTALLATION PROVIDER: _____ INSTALLATION DATE: _____

INSTALLATION ADDRESS: _____

INSTALLATION CHECKLIST:

STEP	DATE/TIME	INITIAL	NOTES
SAFETY REQUIREMENTS			
PART/HARDWARE IDENTIFICATION TABLE			
MOUNT CROSS BEAM			
ATTACH FOOT PAD			
MOUNT SIDE BEAM			
ATTACH LOWER CYLINDER MOUNT			
MOUNT STERN SIDE H-FRAME			
MOUNT BOW SIDE H-FRAME			
MOUNT MIDDLE H-FRAME			
MOUNT HYDRAULIC CYLINDER(S)			
MOUNT V-BUNK SUPPORT			
ATTACH V-BUNK			
MOUNT V-BUNK BRACKET			
MOUNT ALUMINUM MULTI-BUNK			
ATTACH GUIDE POLE MOUNTING BRACKET			
ATTACH GUIDE POLE			
COMPLETE WALKTHROUGH OF THE "HYDRAULIC POWER PACK OPERATING MANUAL"			

I, _____, hereby verify that all guidelines and procedures were read and followed to the best of my ability.

SIGNATURE : _____

DATE OF COMPLETION: _____