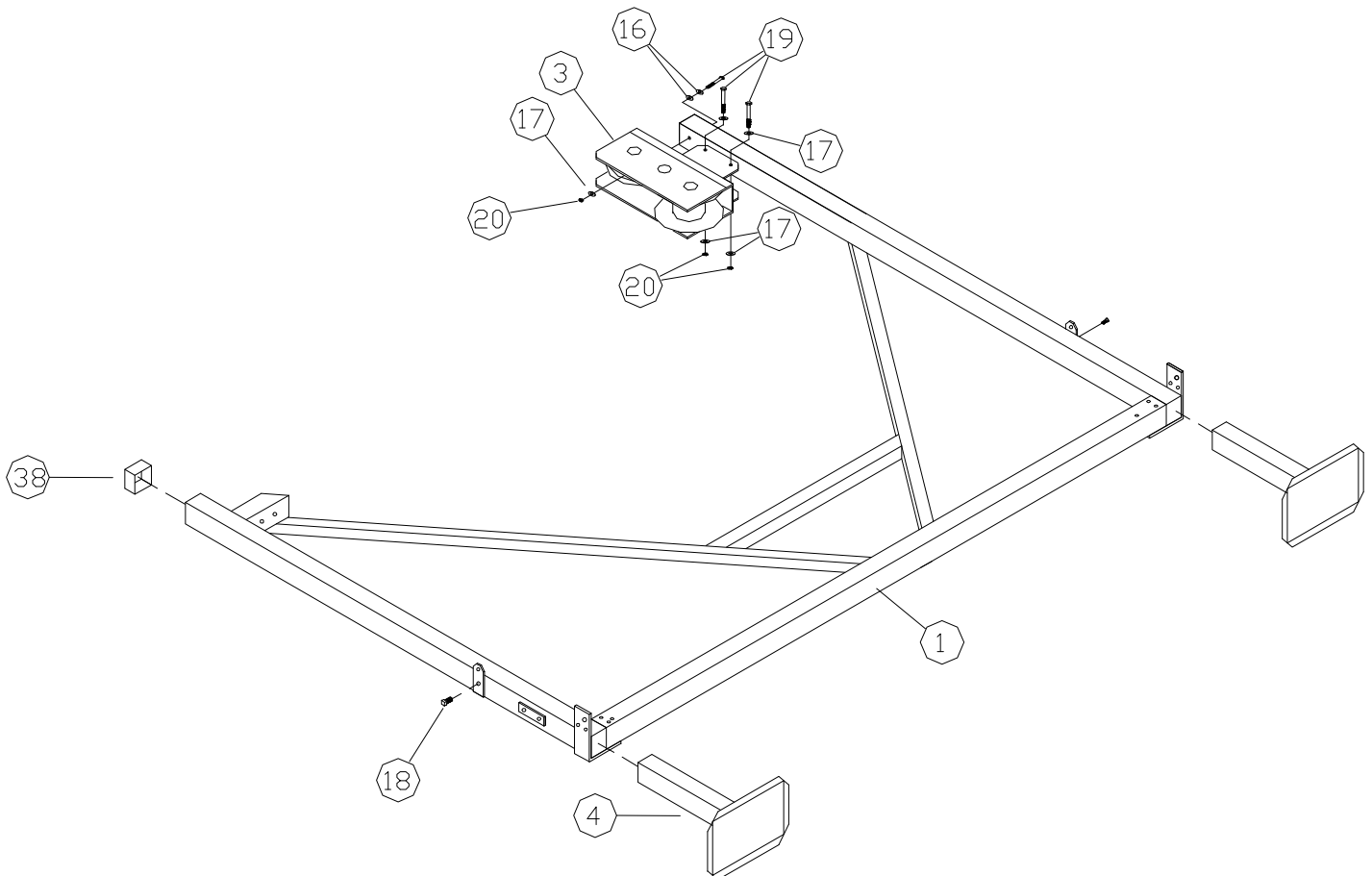


460A 46113V, 461A 46120V, & 461AL 46120VL
ALUMINUM VERTICAL 4600 LB LIFT
INCLUDES SCREW LEG ASSEMBLY INSTRUCTIONS

Thank you for purchasing our product!
***Please read these instructions and follow them step by step.**

STEP 1. Separate and group like parts and fasteners together. Locate the winch side member with the longer upright tube and diagonal braces (**Ref. # 1**). Lay this side member on its side with the corner angles up. Locate the chain drive winch (**Ref. # 3**). And remove the outside guard. Slide the winch onto the longer upright tube of the winch side member making sure the winch hub is down. Bolt the ears of the winch together with 3/8" x 4 1/2" bolts, washers, and nuts (**Ref. # 19, 17, 20**) making sure the top hole in the winch is lined up with the hole in the upright tube. Tighten the bolts in the ears at this time. If installing a canopy, place the canopy mounting bracket into the upright tube (see canopy instructions). Finish mounting the winch to the upright by placing a 3/8" washer (**Ref. # 17**) against the top hole in the winch and two larger fender washers (**Ref. # 16**) against the top hole on the tube side. Secure in place with a 3/8" x 4 1/2" bolt and nut (**Ref. # 19 & 20**).

If not installing a canopy, place a square plastic cap (**REF. # 38**) onto the top of the other upright tube. Side the leveling legs (**REF. # 4**) into the side member uprights. Secure in place with 1/2" x 1" set screws (**REF. # 18**)

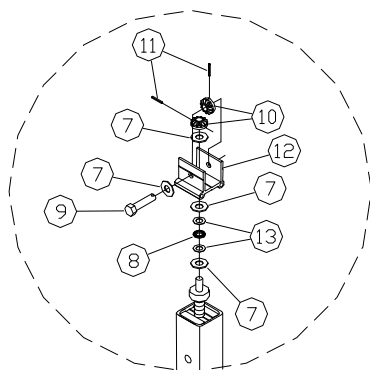
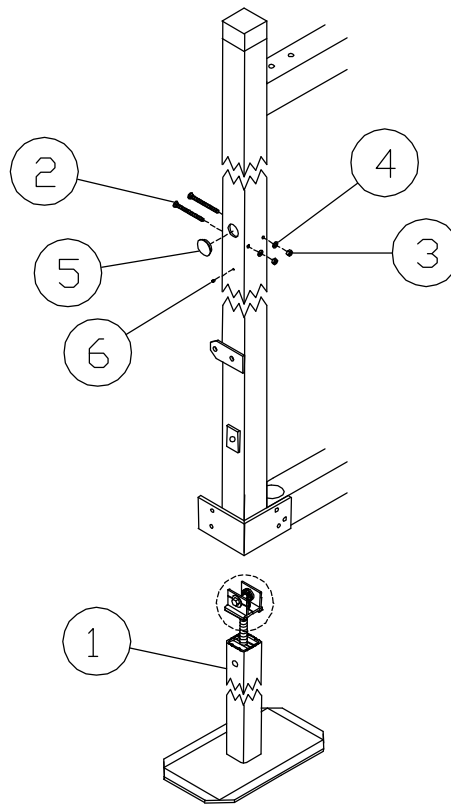


LIFT SCREW SYSTEM LEGS

Thank you for purchasing our product!

***Please read these instructions and follow them step by step.**

STEP 1. Grease the top gears on the leg assembly. Slide the leg assemblies into the uprights of the lift side making sure that the bolt head on the leg jack drive shaft (REF. NO. 9) will line up with the big hole in the lift upright and the grease access hole in the leg will line up with the grease zerk hole in the lift upright. Bolt the legs in place with 5/16 carriage bolts, washers, and nuts (REF. NO. 2, 4, & 3) making sure that the carriage bolt heads are toward the inside of the lift. Pound the grease zerk (REF. NO. 6) into the small hole below the adjustment hole. Insert a 1 3/8" cap (REF. NO. 5) into each large hole in the lift upright.



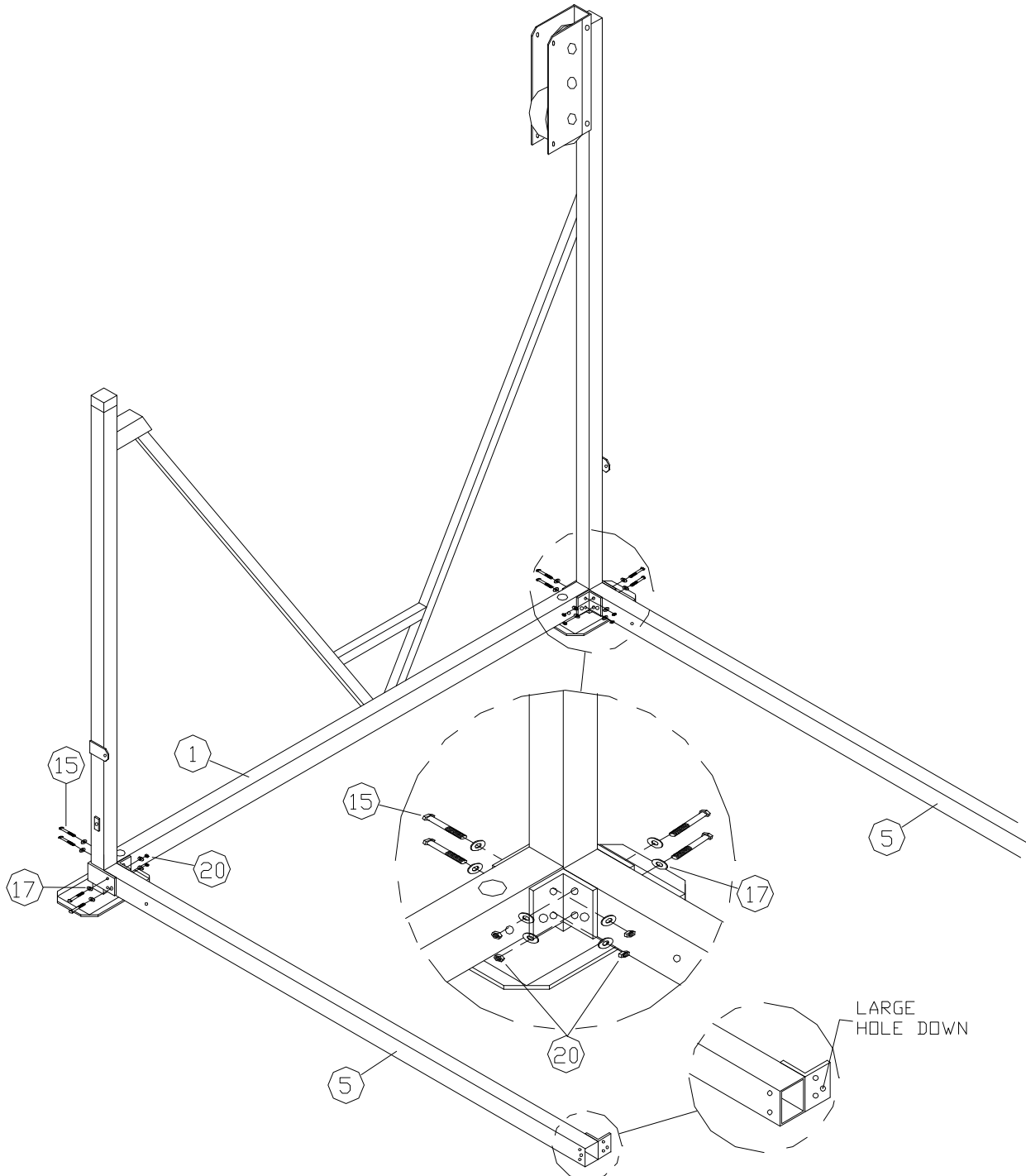
REF. #	PART #	DESCRIPTION	QTY
1	75H	LEG ASSEMBLY (3000-4000)	4
	76H	LEG ASSEMBLY (4600)	4
2	5209	5/16" X 3 1/2" CARRIAGE BOLT (3000-4000)	8
	5210	5/16" X 4" CARRIAGE BOLT (4600)	8
3	5054	5/16 NUT	8
4	5068	5/16 WASHER	8
5	3831	1 3/8 CAP GRAY	4
6	5011	3/16 GREASE ZERK	4
7	5203	1/2" STAINLESS STEEL WASHER	12
8	5250	THRUST BEARING	4
9	5192	1/2" SS LEG JACK DRIVE SHAFT	4
10	3196	BEVELED GEAR	8
11	5236	3/16 X 1 ROLL PIN	8
12	50420	2.47" GEAR YOKE (3000-4000)	4
	50422	2.97" GEAR YOKE (4600)	4
13	5252	WASHER THRUST BEARING	8

USE AND MAINTENANCE

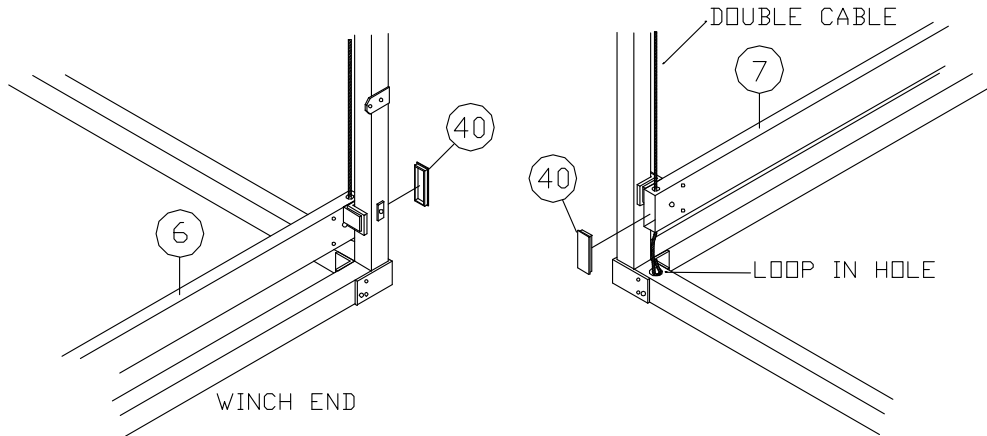
Adjust the height of the lift by turning the bolt head on the leg jack drive shaft with a 3/4" socket and ratchet or a 3/4" socket in a cordless drill. Clockwise will lower the lift, and counter-clockwise will raise the lift. **Do not use an impact wrench, as the hammering effect will cause extra wear on the gears and drive shaft.** Each fall when the lift is removed, adjust the leg so it is all the way into the lift. Grease with a non-petroleum based lubricant. Lower the leg 12 inches and grease again. Adjust the leg all the way down then all the way up; this will help distribute the lubricant onto the entire shaft. **WARNING – The watercraft must be removed from the lift before any height adjustments are made with the legs.**

STEP 2. Locate the two 3 1/2" x 3 1/2" x 112 1/2" bottom cross tubes (**REF. # 5**). Using two people stand the side member up on it's leveling legs. With one person balancing the side member, bolt the bottoms cross tube to the corner angles using 3/8" x 5" bolts, washers & nuts. (**REF. # 19, 17 & 20**). Leave nuts finger tight.

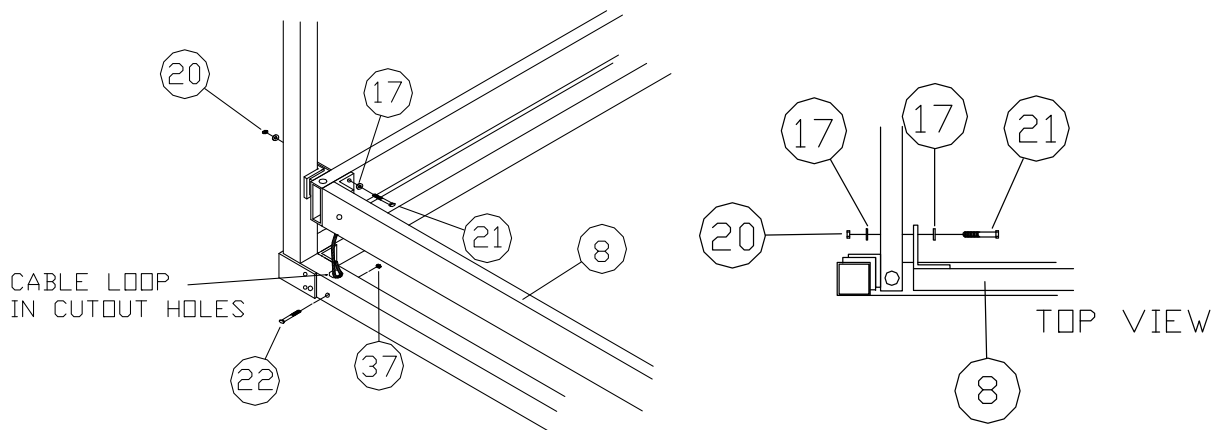
STEP 3. If not installing a canopy top, place the remaining square plastic caps onto the tops of the upright tubes of the anchor side member. Place leveling legs (**REF. #4**) into the anchor side member (**REF. #2**) and secure in place with 1/2" x 1" set screws. Bolt anchor side member up to the ends of the bottom cross tube as done with winch side member. Leave nuts finger tight.



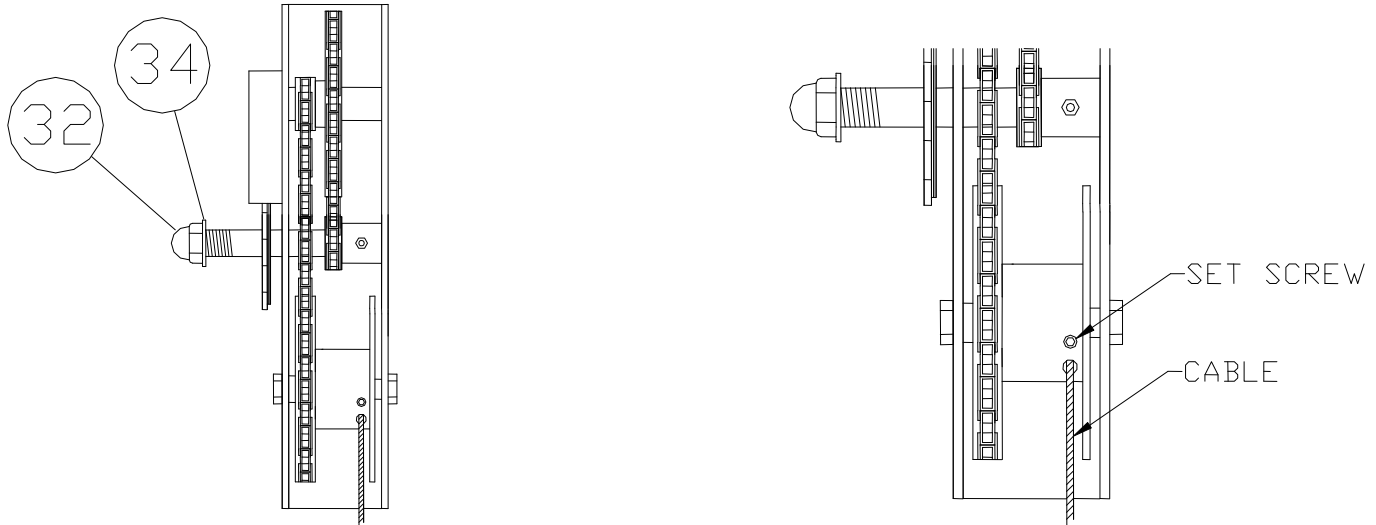
STEP 4. Locate the two 2" x 4 3/4" x 117 1/2" top bed cross tubes. The tube with a single cable protruding from each end is the winch bed cross tube. (**REF. # 6**). The other one with the two cables on each end is the anchor cross tube (**REF. # 7**). From the inside of the lift frame, on the winch end, place the winch bed cross tube across the end of the lift, so that the nylon slide angles are up against the inside corners of the side member upright tubes. Take the anchor cross bed tube and place across the other end of the lift frame so that the bottom loops of the cable are in the cutout holes of the bottom side tube of the side members and the nylon slide angles are against the uprights as on the other bed cross tube.



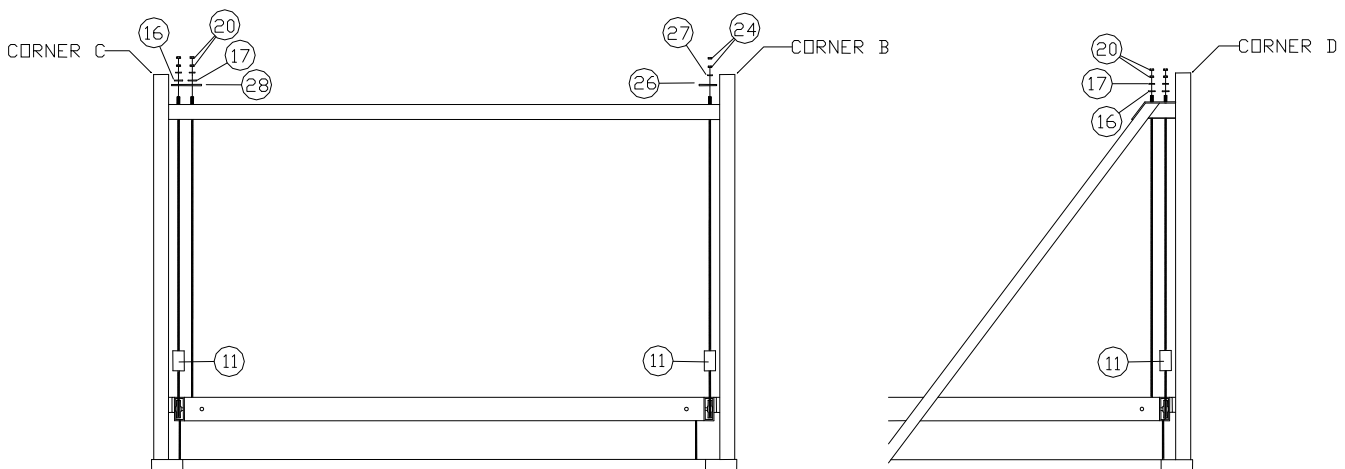
STEP 5. Assembly may be easier if 2" x 4"’s are laid diagonally on end across the bottom four corners of the lift and the bed is assembled on top of the 2" x 4"’s. Take the two 2" x 4 3/4" x 104" side bed tube cable assembly tubes (**REF. # 8 & 9**). With the cable loop end down and toward the winch end of the lift, fasten the end of the side rail tube to the two holes in the bed cross tubes with 3/8" x 3" bolts, washers & nuts (**REF. #21, 17, & 20**). Place cable loops into the cutout holes of the bottom tube of the side members. Secure in place with 1/2" x 4" galvanized bolts, & nuts. (**REF. # 22 & 37**) Secure the cable loops of the anchor bed cross tubes on the other end of the lift with a 1/2" x 5" galvanized bolts, and nuts (**REF. # 25 & 37**). Using a tape measure square the corners of the lift to within 1/4" or less. Tighten all bolts at this time.



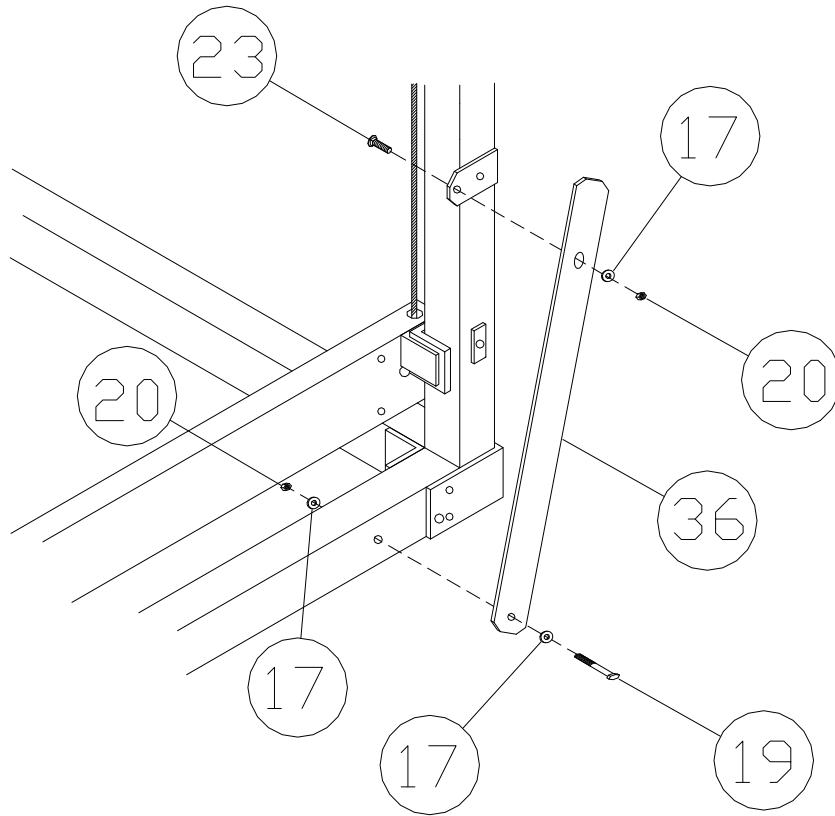
STEP 6. Take the winch nut, washer, (**REF. #32 & 34**) and plastic shipping collar off the winch shaft, if possible lubricate the winch shaft with a light lubricant. Thread on winch wheel (**REF. # 10**) and replace washer and nut. Tighten the winch acorn nut onto the winch shaft. There will be roughly 1/8" clearance between the winch, washer and the winch wheel Turn the wheel clockwise until the set screw that is in the face of the winch drum is toward the front edge of the winch. Loosen the allen head set screw in the face of the drum. Place the cable into the hole in the face of the drum, making sure that the cable goes into the sleeve inside the drum. Tighten the set screw.



STEP 7. As a reference, the corners are marked below on the assembly drawing. At corner B slide a rubber stop tube (**REF. #11**) on to the cable. Fasten the cable stud to the top cross tube of the anchor side member using the 1/4" x 3" x 3" cable support plate, 1/2" washer, and double nut with two 1/2" nuts (**REF. #26, 27 & 24**). At corner C slide a rubber stop tube onto the cable that is closest to the upright tube. Fasten both cable studs to the top cross tube of the anchor side member using the 1/4" x 3" x 6" cable support plate using 3/8" washers, 3/8" fender washers, and double nut with two 3/8" nuts. (**REF. #28, 17, 16, & 20**). At corner D slide a rubber stop tube on to the cable that is closest to the upright tube. Fasten both cable studs to the winch side member at the horizontal stub with 3/8" washers, 3/8" fender washers and double nut with two 3/8" nuts (**REF. # 17, 16, & 20**). While standing on the double cable corner of the lift bed, adjust the nuts on the cable studs until the cables have the same amount of tension and the bed is just off the 2" x 4" 's. Repeat procedure on the other double cable corner. **NOTE: To secure double nuts be sure to tighten the nuts in opposite directions against each other to lock them in position.**



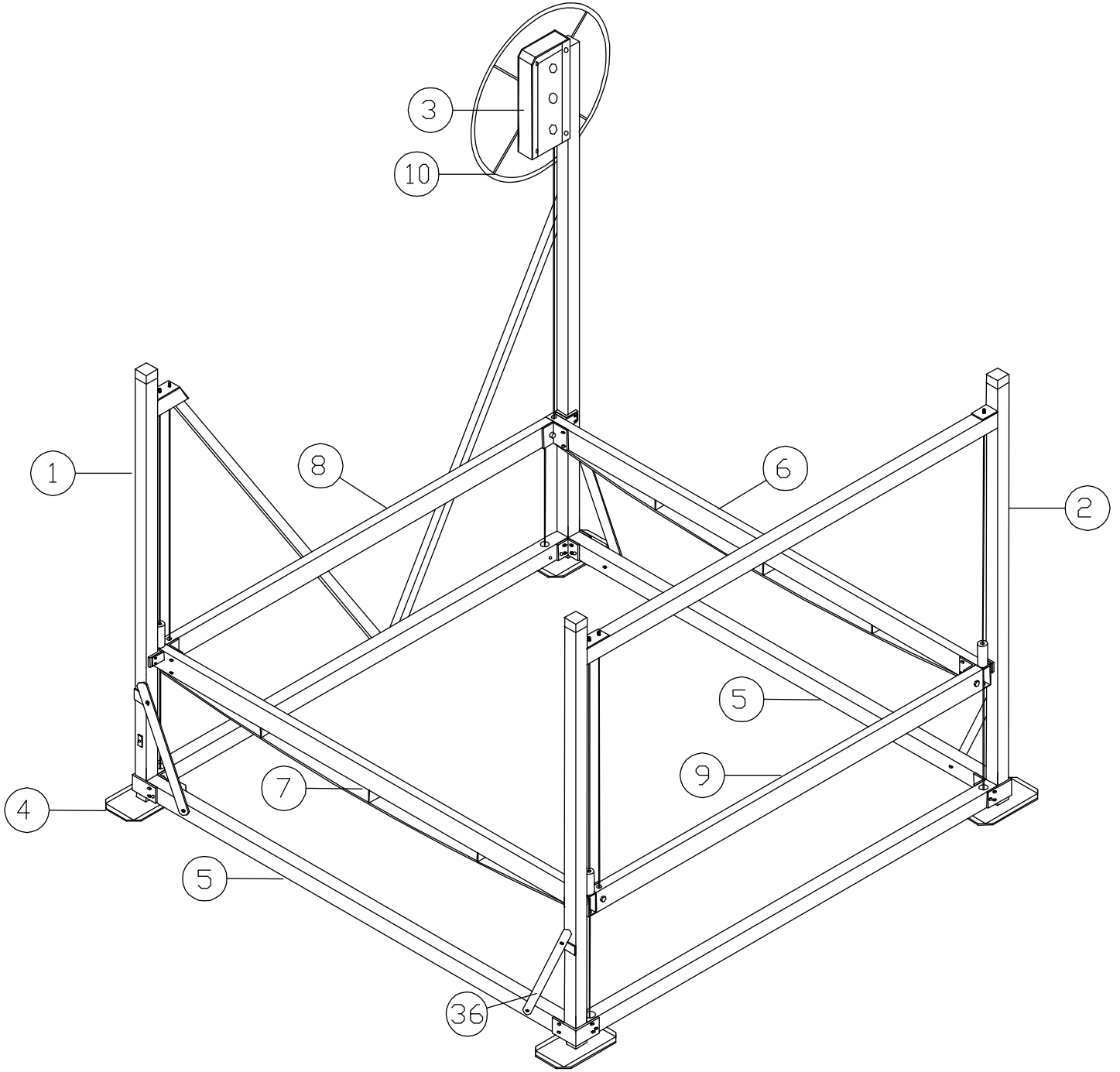
STEP 8. Bolt the four diagonal braces (**REF. # 36**) into the four bottom corners of the lift by placing a 3/8" x 4 1/2" bolt and washer (**REF. #19 & 17**) thru the round hole of the brace and into the hole of the bottom cross tube and finger tighten with 3/8" washer & nut (**REF. #17 & 20**). Place a 3/8" x 1" carriage bolt (**REF. # 23**) into the hole in the tab on the upright and through slotted hole of the diagonal brace, then place a 3/8" washer and nut (**Ref.no.17 & 20**) onto this bolt but leave loose at this time. Tighten the bottom bolts at this time. Check to see if the side upright tubes are parallel with each other. Adjust if necessary by pushing in or pulling out on the tube. When adjusted correctly, tighten the top bolts of braces.



STEP 9. When placing lift in the lake, you must level the lift as close as possible for the lift to operate correctly. When tightening your set screws, finger tighten until tight and then tighten 2 1/2 to 3 1/2 turns after you start feeling resistance with a wrench. When raising your boat, check and see if the bed is rising evenly and that all cables have about the same tension. If lift bed is coming up crooked, check lift for levelness, if lift is level, remove boat and adjust cable nuts to level bed.

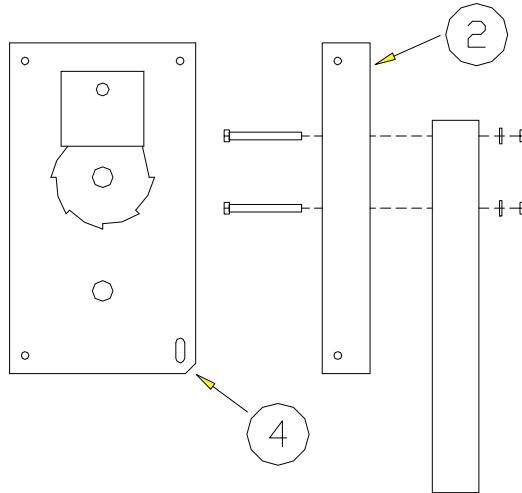
PARTS LIST
460A 46113V, 461A 46120V & 461AL
46120VL

<u>REF. #</u>	<u>PART #</u>	<u>DESCRIPTION</u>	<u>460A 46113V</u>	<u>461A 46120V</u>	<u>461AL 46120VL</u>
1	51H	SIDE MEMBER WINCH 4600V	1	1	-
	63H	SIDE MEMBER WINCH 4600VL	-	-	1
2	52H	SIDE MEMBER ANCHOR 4600V	1	1	-
	64H	SIDE MEMBER ANCHOR 4600VL	-	-	1
3	3H	WINCH 3026 W/PLATE	1	1	1
4	58H	LEVELING LEG	4	4	4
5	53H	BOTTOM CROSS TUBE 46113V	2	-	-
	67H	BOTTOM CROSS TUBE 46120V	-	2	2
6	55H	WINCH END BED CROSS TUBE 46113V	1	-	-
	66H	WINCH END BED CROSS TUBE 46120V	-	1	1
7	57H	ANCHOR CROSS TUBE 46113V	1	-	-
	65H	ANCHOR CROSS TUBE 46120V	-	1	1
8	45H	SIDE BED TUBE RIGHT 4600V	1	1	-
	37H	SIDE BED TUBE RIGHT 4600VL	-	-	1
9	44H	SIDE BED TUBE LEFT 4600V	1	1	-
	38H	SIDE BED TUBE LEFT 4600VL	-	-	1
10	45F	LIFT WHEEL	1	1	1
11	4513	RUBBER STOP 4"	3	3	3
15	5090	BOLT 3/8" X 5" GR 2	16	16	16
16	5067	WASHER FENDER 3/8"	6	6	6
17	5070	WASHER 3/8"	72	72	72
18	5174	SET SCREW 1/2"	4	4	4
19	5087	BOLT 3/8" X 4 1/2"	7	7	7
20	5056	NUT 3/8"	45	45	45
21	5084	BOLT 3/8" X 3"	8	8	8
22	5222	BOLT GALV 1/2" X 4"	2	2	2
23	5193	CARRIAGE BOLT 3/8" X 1"	4	4	4
24	5058	NUT 1/2"	2	2	2
25	5223	BOLT GALV 1/2" X 5"	2	2	2
26	30005	WINCH CABLE SUPPORT PLATE 3" X 3"	1	1	1
27	5071	WASHER 1/2"	1	1	1
28	30007	CABLE SUPPORT PLATE 3" X 6"	1	1	1
32	3027	WINCH NUT	1	1	1
34	5072	WINCH NUT WASHER 5/8"	1	1	1
36	30009	DIAGONAL BRACE	4	4	4
37	5052	NUT GALV 1/2" OVERSIZED	4	4	4
38	3824	CAP 3 1/2" SQUARE	3	3	3



CHAIN WINCH MOUNTING INSTRUCTIONS

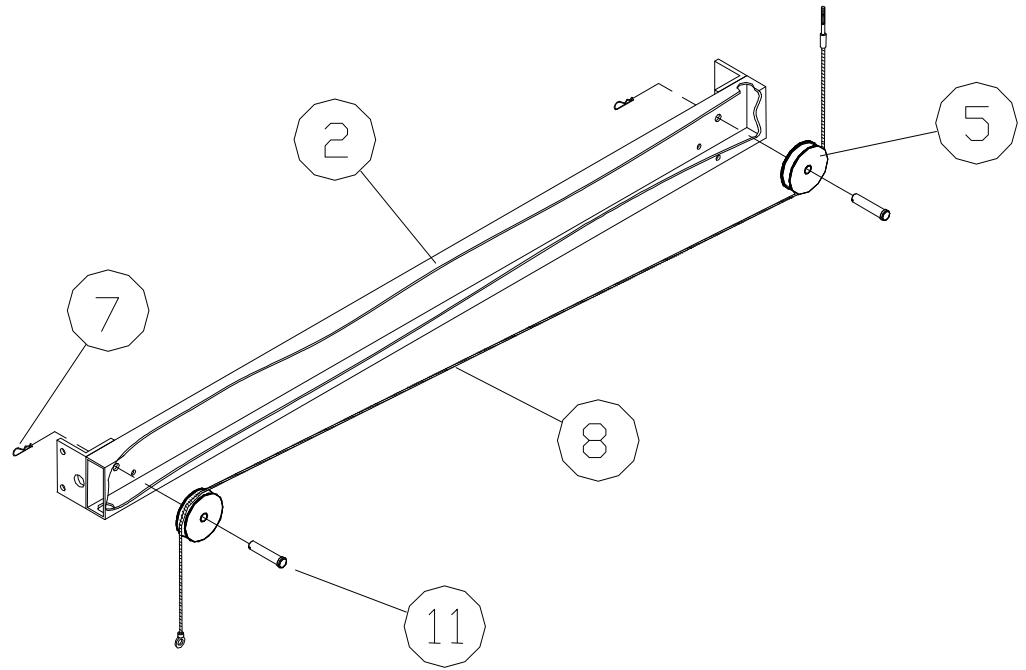
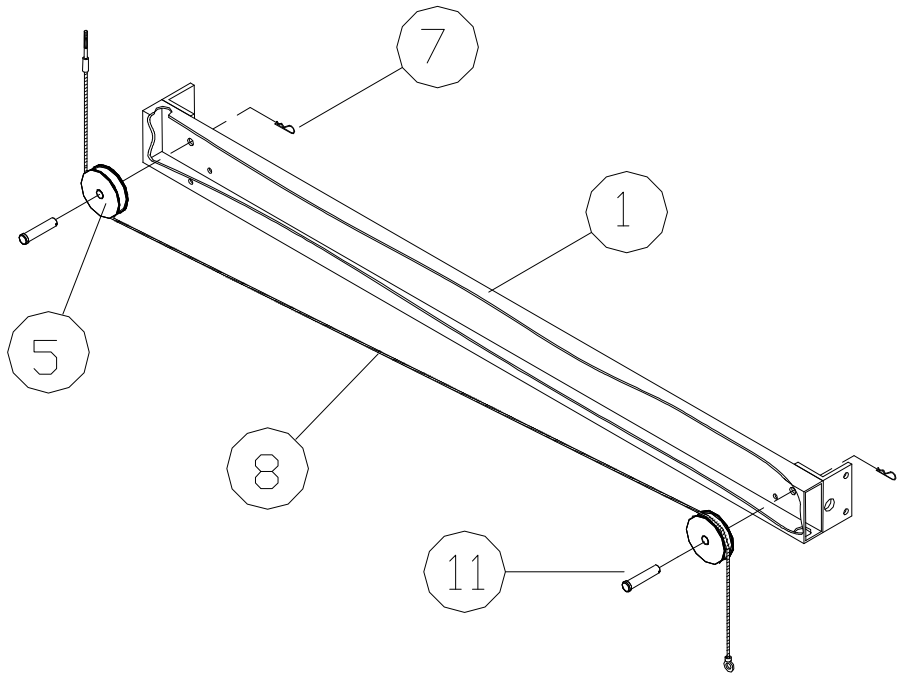
STEP 1. Because of the hole placement on the winch, it maybe easier to remove the back mounting channel (**REF. # 2**) and bolt it to the inside of the lifts upright first and then re-bolt the winch assembly (**REF. # 4**) to the back mounting channel.



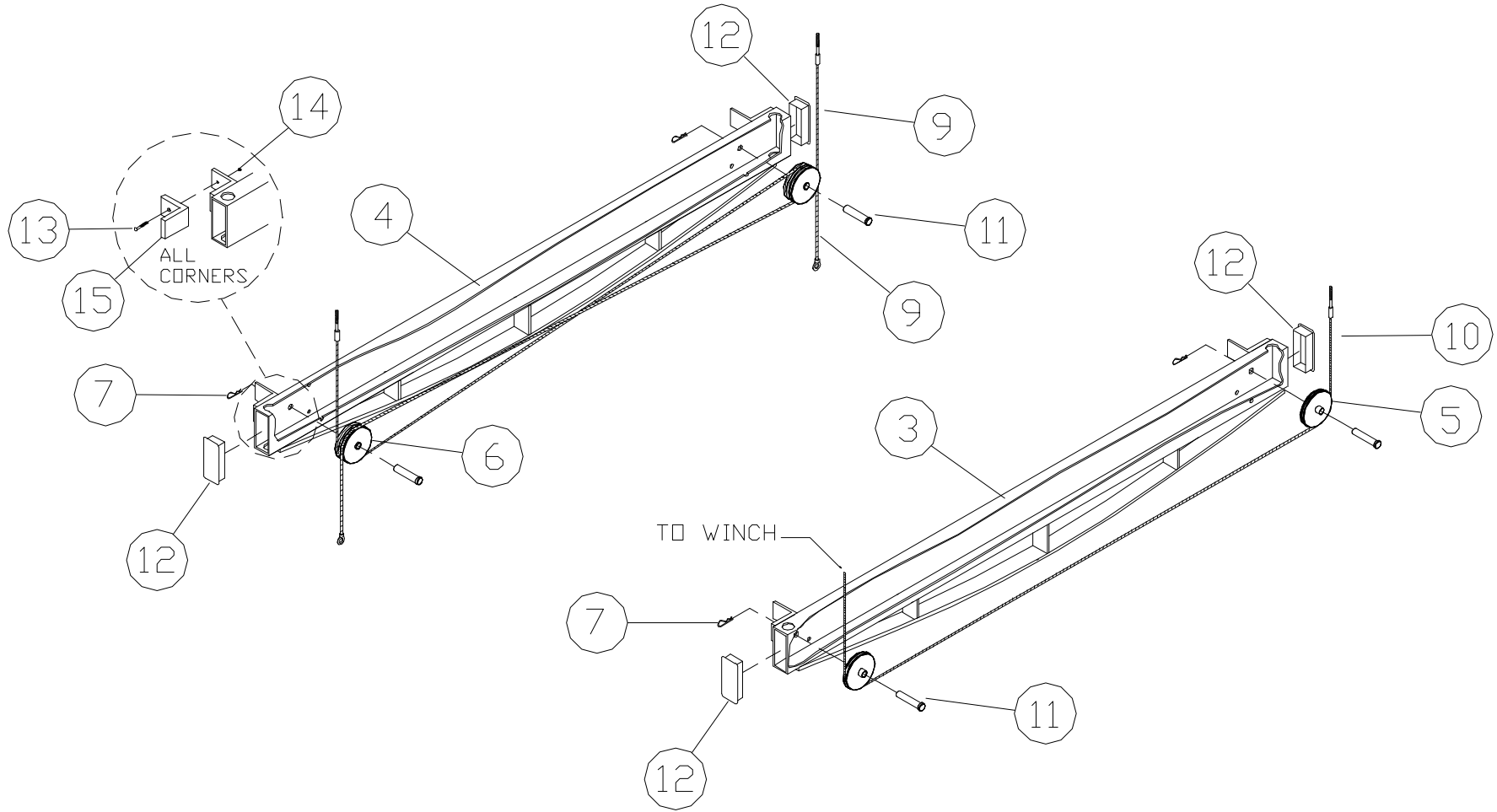
46113V, 46120V, & 46120VL TOP BED ASSEMBLY PARTS LISTS

Ref.no.	Part no.	Description	46113V	46120V	46120VL
1.	20H	Side Bed Tube Left 4600V	1	1	-
	19H	4600VL	-	-	1
2.	21H	Side Bed Tube Right 4600V	1	1	-
	18H	4600VL	-	-	1
3.	54H	Winch End Bed Cross Tube Sgl Cable 40113V/46113V	1	-	-
	10H	40120V/40120VL/46120V/46120VL	-	1	1
4.	56H	Anchor End Bed Cross Tube Dbl Cable 40113V/46113V	1	-	-
	11H	40120V/40120VL/46120V/46120VL	-	1	1
5.	3316	4" Nylon Single Pulley	6	6	6
6.	3317	4" Nylon Double Pulley	2	2	2
7.	5092	Hitch Pin 1/8"	8	8	8
8.	3042	Cable SS 1/4" x 177"	2	2	-
	3115	Cable SS 1/4" x 196 1/4"	-	-	2
9.	3041	Cable SS 1/4" x 191.5"	2	-	-
	3116	Cable SS 1/4" x 198 3/4"	-	2	2
10.	3114	Winch cable 290"	1	1	1
11.	5045	Clevis Pin SS .625" x 2.5"	8	8	8
12.	3827	Cap 2" x 4.7" End Cap Vertical Upright	4	4	4
13.	4994	Machine Flat Head 1/4" x 7/8" Screw	4	4	4
14.	5053	Locknut 1/4" Keps	4	4	4
15.	30016	Plastic Slide Angle .50" x 3" x 3" x 2.5" UHMW	4	4	4

3000V/4000V SIDE BED TUBE LEFT AND RIGHT



4000V WINCH & ANCHOR CROSS TUBE





IMPORTANT BOAT LIFT SAFEGUARDS

The boat lift system must be assembled, installed and operated correctly or mechanical failure causing injury or death may occur. Be sure that all persons operating the lift are familiar with the correct operating procedures and safety guidelines.

CAUTION - Keep all body parts inside the boat when entering or exiting the boat lift. Do not try to manually guide the boat into position.

CAUTION – Keep clear of chains, cables, and all moving parts when operating the lift.

CAUTION – On lifts that have a chain drive winch, the cover must be in place while operating.

CAUTION – Never allow anyone to swim around or climb on the lift structure at any time.

CAUTION – Do not operate the lift with people inside the boat.

CAUTION – Never exceed the rated capacity of the lift as this may cause excessive damage to the lift. Do not allow people to sit in a boat that is on the lift as this may cause to lifts capacity to be exceeded. An uncovered boat can fill up with water and cause the capacity of the lift to be exceeded.

CAUTION – Before any adjustments are made to the lift, or any work is done, the boat must be removed and the bed must be fully lowered.

CAUTION – Winches are pre set from the manufacturer and do not need adjusting.

CAUTION – If using a winch with a remote control, the operator must be close enough to the lift to be sure that no one is around or on the lift, and to be sure that the lift is operating properly

CAUTION - After installation the lift must be leveled in order to operate properly. If the lift is not leveled properly there will be excessive stress on isolated areas causing failure or damage to the lift.

Before installing the lift each year inspect the cables, pulleys, and all moving parts for wear. Immediately replace any part that has excessive wear. Check the brake pad in the winch, if it is worn down to 1/16” thick, cracked, or glazed over, replace it immediately. Check all the bolts to make sure they are tight. On vertical lifts the cables may stretch and will need to be tightened so there is equal tension on all the cables.