



Cottage Docks

Clean. Simple. Classic.
Affordable.



Tip-In Dock System

Instructions

Bestmade Products Inc.



www.BMP-Inc.com



Tip In Dock Instructions

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1. Dock Assembly and Set-Up

1.1 Quick Start

Your Bestmade Docks have been designed to be very simple and straight forward to assemble. Each dock has an aluminum frame, (2) cedar, Surestep, or PVC deck panels, and either 2 or 4 dock legs with foot pads. Use this Quick Start diagram to get set up very quickly.



Image 1

The following tools will be needed for dock installation...

- 4 ft level
- Combination wrench - 3/4"
- Combination wrench - 9/16"
- Combination wrench - 1/2"
- Utility gloves
- Marine grade anti-seize (recommended for use on all fasteners)

1.2 Installing Dock Legs

The next step is to install the leg holder set bolts and nuts. As we can see in Image 2, the 1/2" hex nut slides into the leg holder channel and the 1/2" x 1-1/4" long hex bolt spins into the nut. There are a pair of set bolts and nuts used on each dock leg.

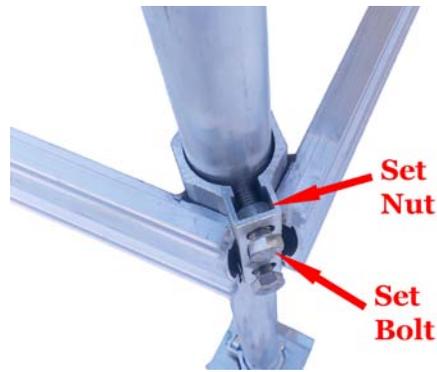


Image 2

As we can see in Image 2, the dock leg slides through the leg holder and is secured with the set bolt. To adjust the dock leg up and down, simply loosen the pair of set bolts, raise or lower the dock, and then re-tighten. Using a 3/4" wrench, a good rule of thumb to ensure the set bolts are tightened properly is to spin 1 complete turn past hand tight when the leg has been pushed up against the back of the leg holder.

In most dock systems, the first dock section (closest to shore) is considered a free-standing section and uses 4 legs. All additional dock sections as the system goes from shore out into the water use 2 legs, as they essentially share the previous section's legs by close proximity. The exception to the 2 leg rule on subsequent dock sections is when dock orientation changes. For example, suppose a system was 4 dock sections long with the first 3 sections creating a straight dock of 4' wide by 24' long. If the 4th dock section of the system was turned 90 degrees and centered on the end of the 24' (creating a "T" layout), this 4th dock section would need 4 legs.

1.3 Positioning Hinges

To connect one dock section to another without getting into the water we will use the tip in hinge system. The tip in hinge "hook and pin" system (Image 3) consists of (4) hinge plates per dock connection. There is (1) hook right plate, (1) hook left plate, and (2) pin plates.

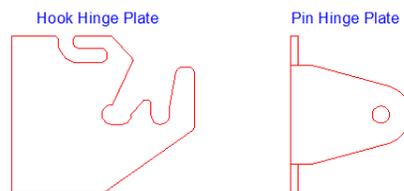


Image 3

All dock systems are installed by starting with the first dock section right at shore and working out into deeper water installing one dock section at a time using the previously installed sections as a walkway. If there is a dock connection to be made, there will be a hinge set to make the connection. Hence, there would typically not be a hinge placed at

the very start where we first step onto the dock, or at the very end of the dock where no further sections are to be joined.

For a given dock connection, the hook hinge plates will always be placed on the end of the installed section closest to shore while the pin hinge plates will be placed on the beginning of the next section to be joined.

To position the hook and pin hinge plates on the frames we'll use the track system. Each hinge plate is connected to its frame by using (2) 5/16" x 5/8" long carriage bolts, washers, and jam nuts. (1) carriage bolt slides into the upper track, (1) slides into the lower track, and then the hinge plate is secured between the dock frame and the washers with jam nuts.

Start by ensuring that the dock frame is right side up. To do this, check to see that the recessed decking area is on the top side of the dock as shown in Image 4.

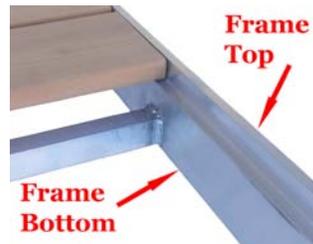


Image 4

Positioning Hinges on Straight Docks

When placing the hook right and hook left hinge plates, the hooks should always be pointing upward toward the sky (Image 3). Be sure the dock frame is not upside down when positioning your hook hinge plates. Each hook plate has been manufactured with a "tick mark" on the top and bottom that will line up with the frame edge (Image 5). By taking care to line up the "tick mark" with the frame edge, we can be ensured that the hinge spacing will be correct.

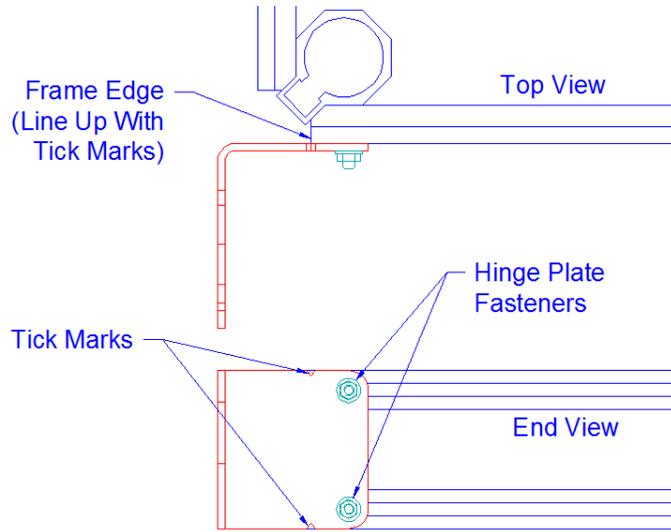


Image 5

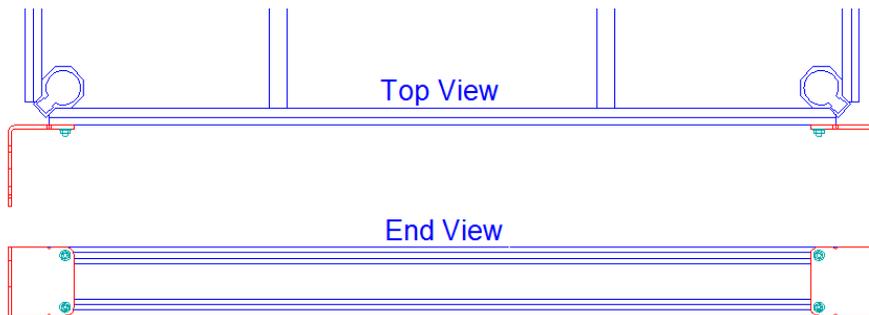


Image 6

Likewise, the pin hinge plates have also been manufactured with a "tick mark". Once again, we will position the pin hinge plates so that the top and bottom "tick marks" line up with the frame edge as shown in Image 7. Because the pin hinge plates are symmetrical, there is no designated right and left version like with the hook plates, so orientation is not important.

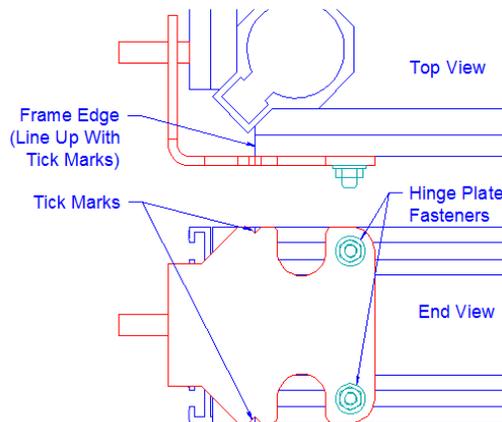


Image 7

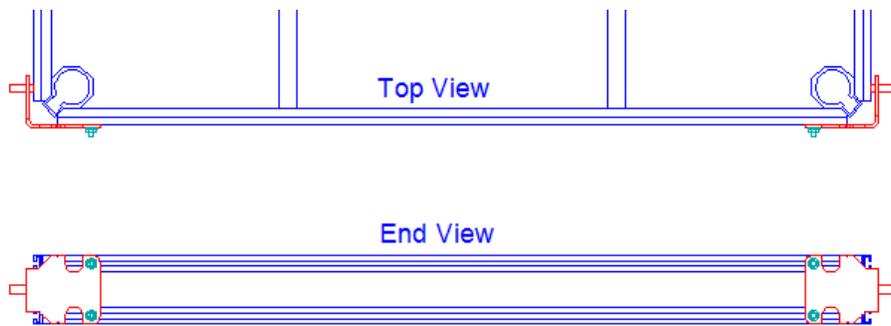


Image 8

Positioning Hinges When Changing Dock Orientation - Wider to Narrower

The "tick mark" method of positioning the hinge plates works well for all straight dock connections (for example a straight 3 section dock where all sections are connected end-to-end.) Working from shore outward into the water, if the dock system A) goes from a wider dock to a narrower dock (example a 6ft wide dock to a 4ft wide dock) or B) changes direction (example a "finger dock" that comes off the side of a dock section) we must manually measure the placement of the hook hinge plates.

Looking at scenario A first, let's suppose that we had a straight dock system that was 6ft wide. If for the last section we wanted to add a section that was narrower at 4ft wide, the distance between the hook hinge plates would have to be set up for use with the pin hinge plates on the last dock section of 4ft wide dock. When outfitting the end of the 6ft wide dock with the hook hinge plates, we would need to measure the distance between the "tick marks" to fasten them in the correct position (Image 9).

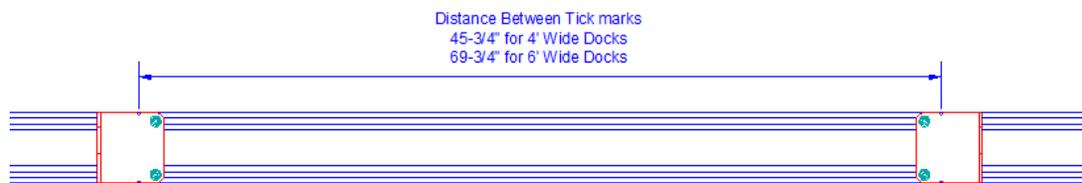


Image 9

* When connecting from an 8ft or 6ft wide dock to a 4ft wide dock the hook plate distance between "tick marks" should be 45-3/4".

*When connecting an 8ft wide dock to a 6ft wide dock the hook plate distance between "tick marks" should be 69-3/4".

Looking at scenario B, the same rules apply. Let's suppose we had a straight dock system consisting of 3 dock sections 8ft long each (24ft total) with dock1 being closest to shore, dock2 in the middle, and dock3 at the end. If we wanted to run a 4ft wide "finger dock" off the side of dock2, we'd need to mount a hook hinge set to the side of

dock2. The distance between "tick marks" of the hook hinge plates mounted to dock2 would need to be set to match the pin hinge plates on the 4ft wide "finger dock".

Positioning Hinges When Changing Dock Orientation - Narrower to Wider

Working from shore outward into the water, whenever A) dock width goes from narrower to wider or B) dock section orientation will change from end-to-end to side-to-side, a Tip Adapter must be used.

Looking first at scenario A, let's suppose we were creating a "T" dock layout using 2 sections of dock, with dock2 being turned 90 degrees and centered on the end of dock1 (Image 10).

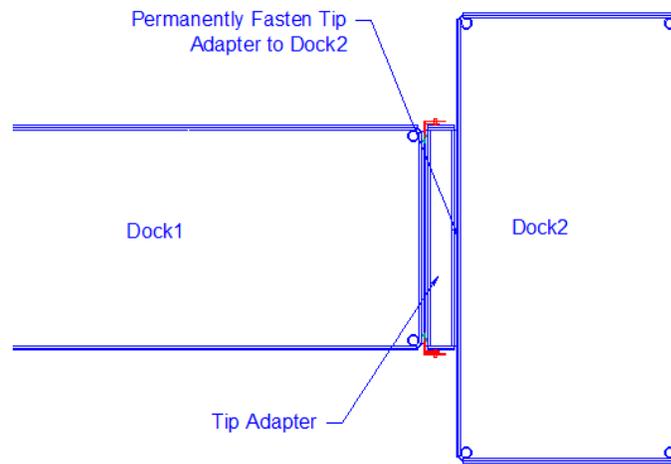


Image 10

On the end of dock1, the hook hinges would be placed normally by the "tick mark" method. Because the pin hinges would not be able to properly mount to dock2, we need to use the Tip Adapter. The shore side of the Tip Adapter will get the pin hinges by fastening the plates via the track system with the back end of the pin being flush with the Tip Adapter (Image 11), while the water side of the Tip Adapter will fasten permanently to dock2 via (3) 5/16 x 1-3/4" long carriage bolts, washers, and nuts. The (3) carriage bolts will slide in the lower track of dock2 and connect through the 3 holes in the Tip Adapter (Image 11).

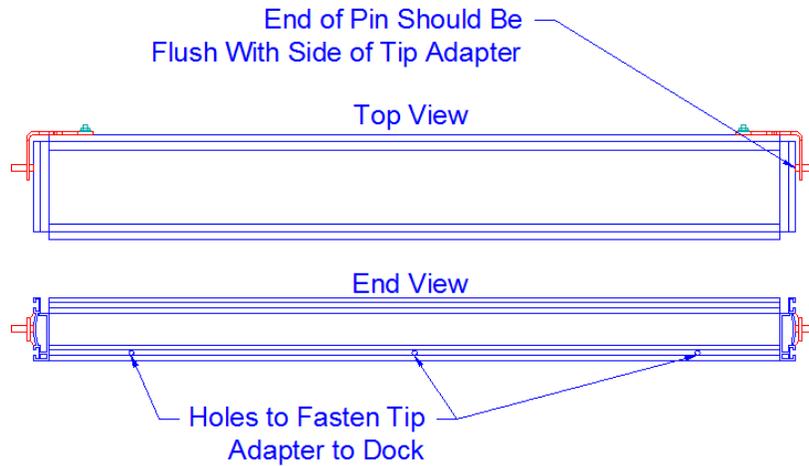


Image 11

Looking at scenario B, Let's suppose we were creating a 3 section dock system where dock3 was placed parallel and next to dock2. In this scenario, dock2 would get a tip adapter to create room for the hinge connection on dock3 (Image 12).

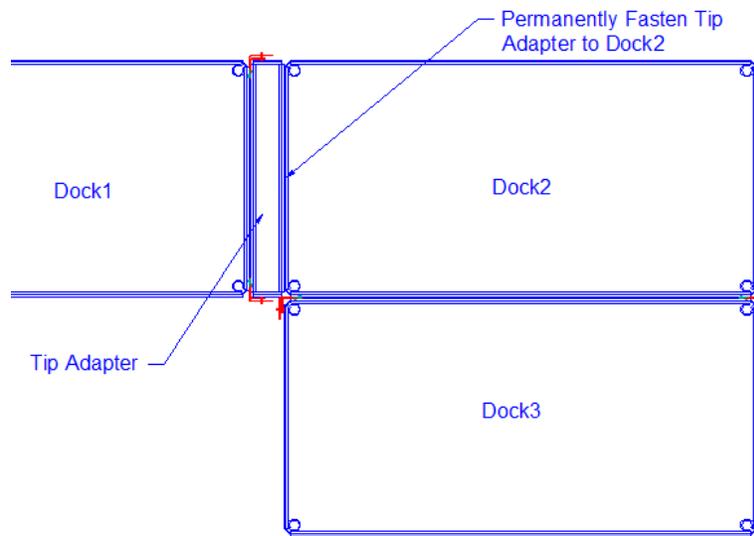


Image 12

1.4 Installing Foot Pads

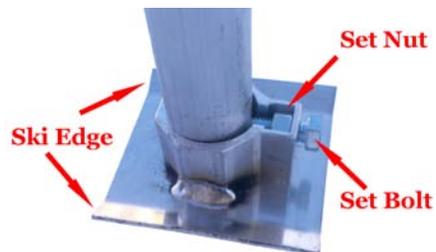


Image 13

In Image 13, we see the foot pads. On soft lake bottoms, dock legs will begin to sink under the weight of the dock. To minimize this effect, you will be provided with foot pads as required. To install the foot pad, simply slide it over the bottom of the dock leg and tighten the set-bolt. The foot pad has a "ski edge" on each end. This is to allow the dock to more easily exit the soft material on the lake bottom. When removing the dock at season's end, the docks are removed one at a time in the reverse order in which they were installed. To remove a section, the dock hinge is unlocked, the frame is lifted slightly, and the dock is dragged backward so it can be carried back to shore via the remaining dock sections. The "ski edge" should be lined up with the direction in which the dock was installed so it can easily ride up out of the silt or mud lake bottom. For example, on a straight dock that runs north/south, the "ski edge" should also be lined up north/south.

1.5 Installing Cross Braces

As water depths get deeper, dock sections can become a bit wobbly. To mitigate wobble, Bestmade Products provides cross braces as required.

A cross brace consists of (1) aluminum cross bar, (2) tie clamps, and (2) 3/8" carriage bolts and nuts (Image 14). The cross brace is designed to go across a section from low to high at an angle (Image 15). When installing a cross brace on shore for the first time, tighten the tie clamp on the low side but leave the tie clamp on the top side installed but loose until the dock has been leveled in the water. The reason for this is that lake bottoms are often uneven. Legs cannot be adjusted independently if both tie clamps are tight. Once the dock is leveled the tie clamp on the top side can be tightened.



Image 14

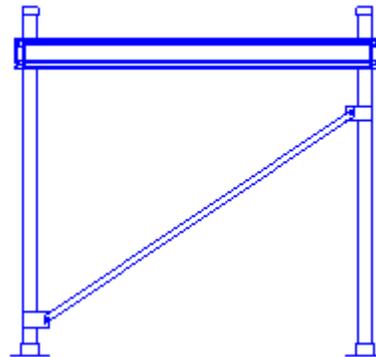


Image 15

It's good practice to alternate orientation of cross braces from section-to-section. For example, if a dock system consisting of 4 dock sections had cross braces on dock sections 3 and 4, dock section 3 might have the low side tie clamp on the left side while dock section 4 would have the low side tie clamp on the right side.

1.6 Installing Docks into the Water

Before installing your Bestmade docks, the annual inspection procedure should be followed per section 4.2 of this text. This includes checking for rotted, cracked, split, or broken members, along with a thorough inspection of all fasteners to check for excessive corrosion or stripped or jammed threads. The deck panels should also be inspected for defects of any kind, including broken, split, or unsecured boards, and fasteners should be checked for proper and sufficient lubrication.

1. Once sections 1.2 through 1.5 have been completed, dock sections may be installed into the water. For first time installation, all leg heights and cross braces should be positioned by best estimates based on where they will be on the water. This can be done on shore. Dock frames should be high enough out of the water as to avoid waves hitting them with regularity. For example, if a lake has 1ft maximum wave heights, the dock frame should be more than 1ft out of the water.

2. Place the first dock section, without the decking installed, into the water. On most shorelines, the first dock section is a 4 leg section and does not tip from any previous sections. These sections can usually be "pushed" into place by sliding the dock section along the lake bottom. Place it in its desired location, level, and tighten all set bolts (as well as the top side of any cross braces).

3. Once the frame is leveled and the dock legs have been tightened, place the deck panels into the frame and secure to the frame with the provided decking clips.

Most standard dock sizes have (2) deck panels per section of dock. Deck panels can be made out of cedar, poly panels (Surestep), or PVC. Each deck panel is secured to the frame via a pair of deck clips. Deck clips should be used on the center of the 2nd boards on opposite corners for cedar and PVC panels (Image 16). For Surestep panels, deck clips should be placed roughly 10" from the panel ends on opposite corners. Image 17 shows a deck clip in use on a cedar deck panel.

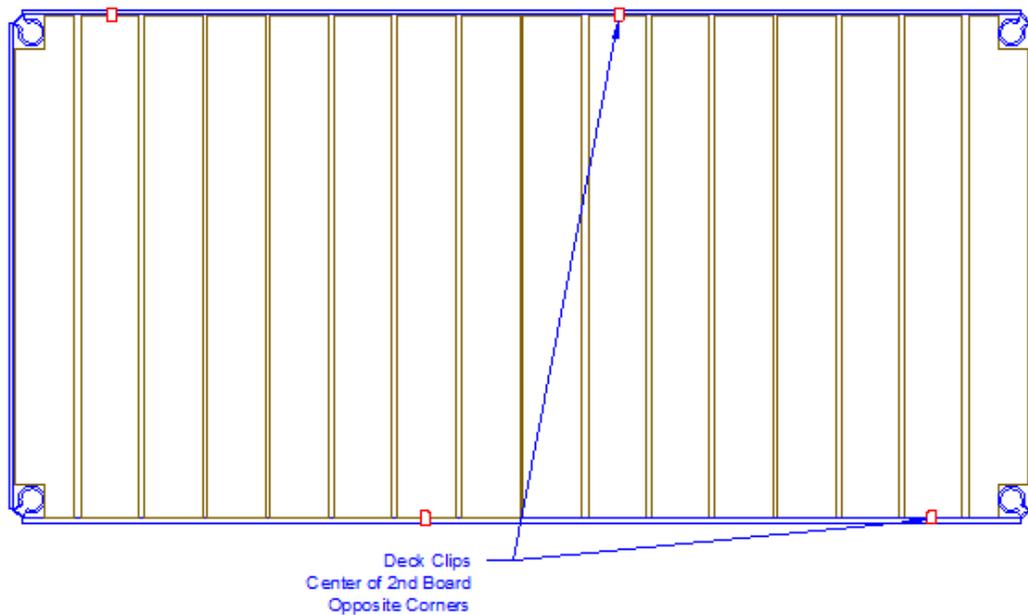


Image 16



Image 17

For 6ft wide dock sections using the Surestep deck panels, there are (4) panels used of 3ft wide each as opposed to the typical (2) at 6ft wide each for docks decked with cedar. Therefore, there is a need to also secure the deck panels in the center of the frame.

As seen in Image 18, the Surestep deck panels are also to be secured at 2 locations in the center of the dock as shown via the center rail decking clip assemblies. These assemblies will be used between the panels and through the pre-drilled holes on the center rail of the dock frame. A larger washer will be used on the top side of the assembly with a large washer and wing nut used to secure under the dock frame center rail. Sequence becomes important on these panels in order to be able to access the center rail decking clip assemblies. For installation, panels 1 and 2 should be installed,

then the first assembly, then panels 3 and 4, then the second assembly. Reverse order during removal.

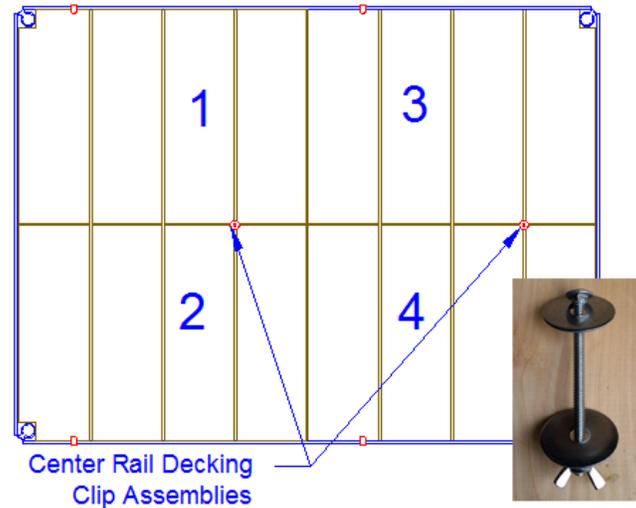


Image 18

** Decking clips will not be able to enter the track at a location that has the upper set bolt installed in the leg holder. Hence, for a 4 leg section the upper set bolt will have to be loosened or completely removed to allow the decking clip to enter the track. **

Once the deck panels are installed, any unused leg holders can be covered with a black vinyl cap as seen in Image 19. Round vinyl caps can also be installed on the top of all legs.



Image 19

4. Carry subsequent dock sections down the dock, working from the shore to the farthest sections of the dock using previously installed sections as a walkway. Dock sections are secured to one another via the tip in hinges installed in Section 1.2. Each hinge connection is 2 position. There is a "tip" position (Image 20) for use in tipping the docks into the water, and a "locked" position (Image 21) to secure the sections together for the season.



Image 20

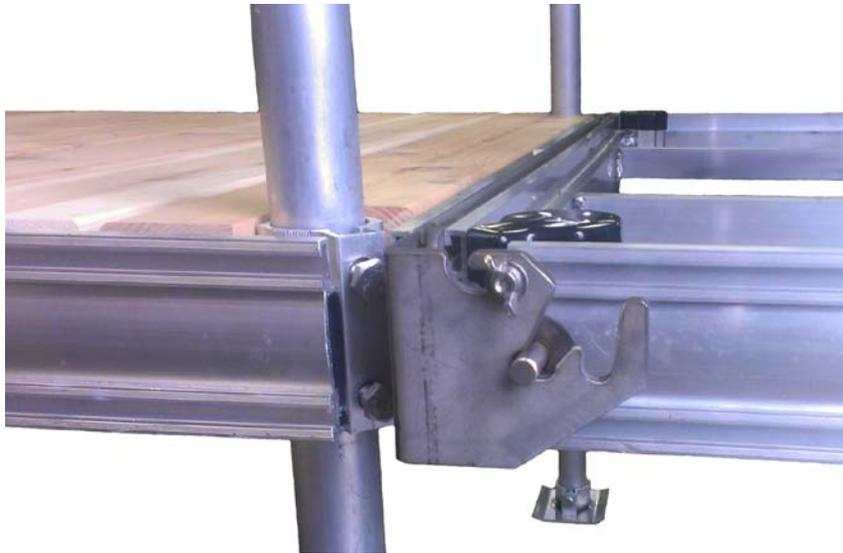


Image 21

To Install subsequent sections, carry them to the last installed dock and place the dock frame upside down with both the hook hinges and pin hinges pointing out into the water (Image 22).



Image 22

Next, lift the dock frame upward and engage the pin hinges into the "tip" position of the hook hinges (Image 23 and Image 24).



Image 23



Image 24

Being sure that the pin hinges are properly engaged in the "tip" position, gently tip the dock frame into the water (Image 25 and Image 26).



Image 25



Image 26

If the dock is level, pull back the frame to the lock position and slide the locking bolts into the upper track system and engage with the locking groove in the hook hinge (Image 27). The locking bolts consist of a 5/16" x 2" long carriage bolt, washer, and wing nut. Each hinge set gets a locking bolt, hence each dock connection gets (1) locking bolt on both the right and left side.

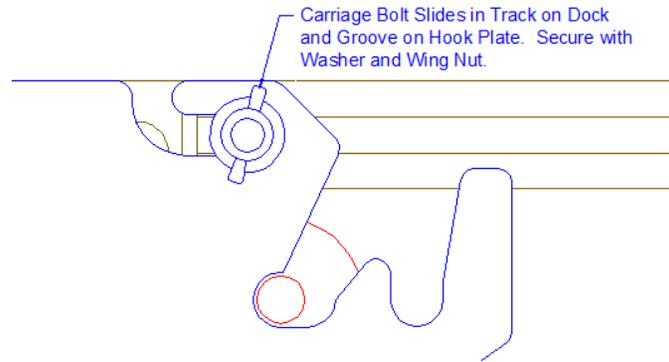


Image 27

If the dock frame is not level after tipping in, the section must be removed, have the legs adjusted, and then tipped in again. For most applications, the legs will need very little adjustment year-to-year. Fine adjustments to the dock level can be made via a dock leveling tool. For first time set up there is usually a fair amount of trial and error unless specific water depth measurements are known and transferred to the dock leg height.

Repeat steps 3 and 4 with subsequent sections until the dock is complete.

5. In soft lake bottoms, your dock may settle in the first 1-2 weeks. When this occurs, the dock should be leveled. To level the dock, loosen the set bolts on a given leg holder and raise or lower the section, then re-tighten the set-bolts.

****IMPORTANT NOTE**** Only loosen the set bolts on 1 leg holder at a time! Loosening all the set bolts at the same time would cause the dock to collapse. You should not be standing on docks when any set bolts are loosened without the use of an appropriate leveling tool.

6. For removal, reverse steps 4 through 2. When removing a dock section, first remove the decking, then remove the locking bolts, and finally pick up and drag back to pick up the frame and carry it back to shore (Image 28 and Image 29).



Image 28

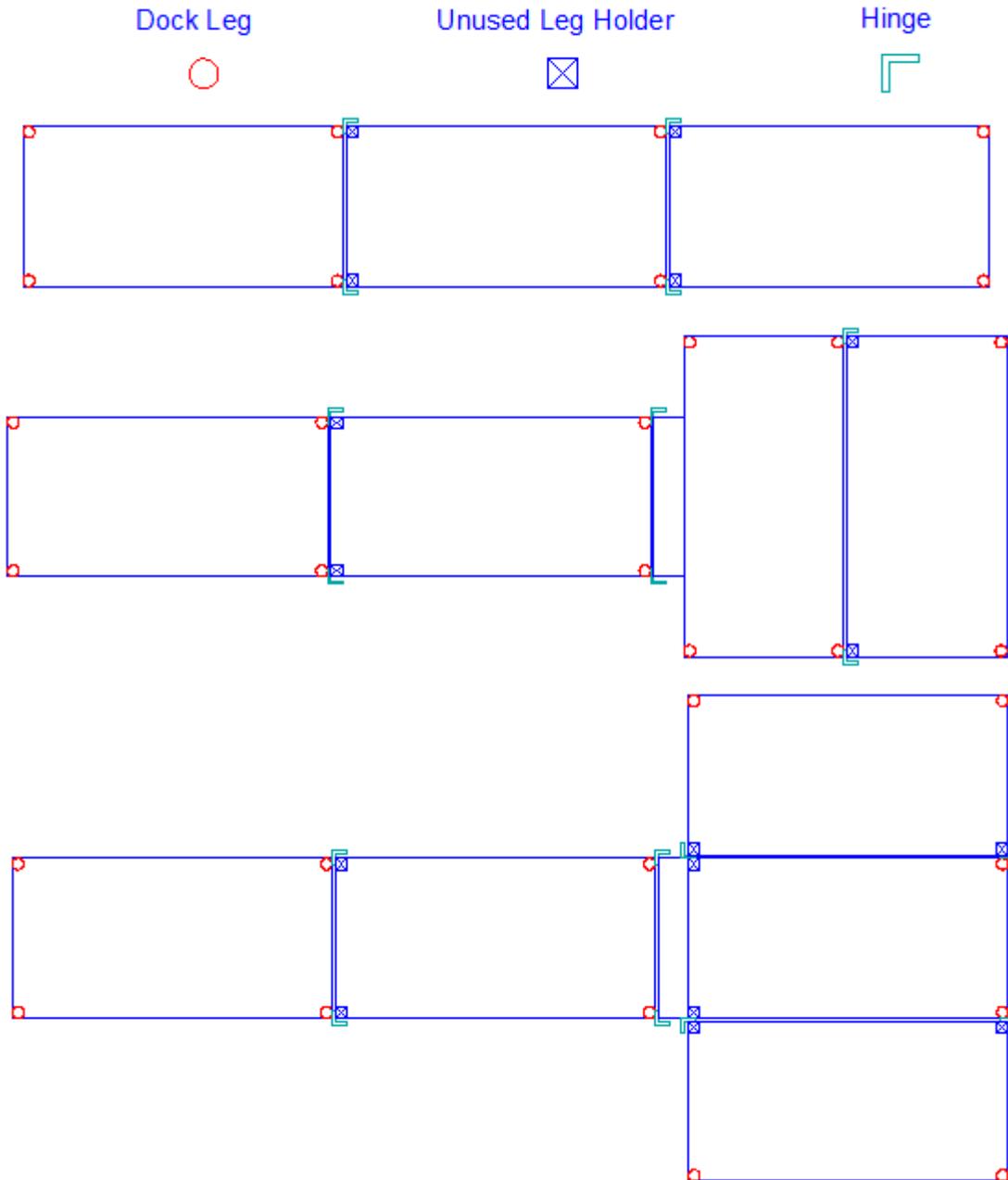


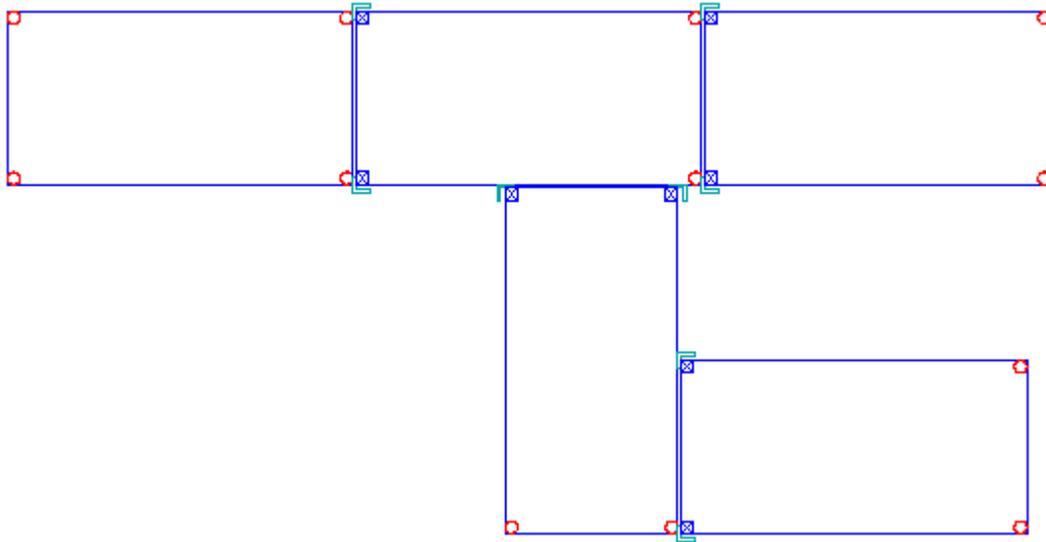
Image 29

It is best to store decking in a dry area out of the weather. Frames, legs, hinges, foot pads, caps, and cross braces don't need to be removed from the frame each year. Sections can be stacked on shore as individual units without decking.

1.7 Sample Layouts

The majority of customers will use some variation of the following layouts. Use this as a reference for how to position dock legs and hinges.





2. Safety

2.1 Safety Introduction

Your Bestmade Docks were designed to provide a lifetime of safe and enjoyable use. However, even the most carefully developed products are not without their limitations. As such, this safety section has been introduced to not only educate the owner about the proper use of their product, but also to introduce warning signs of a potential dock malfunction. This entire document should be read thoroughly and any questions or concerns about the safe use of your docks should be addressed to Bestmade Docks directly.

2.2 Safety Definitions

The safety messages outlined in this document are in place to alert dock owners and users of potentially dangerous situations. If a situation or item is addressed in this text in regards to a safety concern, it is in place to prevent the possibility of damage of equipment, mild or severe personal injury, or even death. General safety practices as outlined in this text should be performed at all times.

2.3 Personal, Operating, and Installation Safety

Do not walk, stand on, or use the docks under any of the following conditions:

- The dock shows signs of damage.

- The dock is not in its fully assembled state.
- Leg holder set bolts are not fully tightened.
- All bolts and nuts are not fastened securely per Bestmade Docks' specifications.
- The dock has been modified or repaired by an individual unauthorized by Bestmade Docks.
- The weather is severe including, but not limited to, excessive rain, wind, or waves.
- The dock has ice, snow, or other potentially hazardous conditions on its walking surface.

Additional Safety Recommendations:

- Never use the docks beyond the rated maximum weight capacity, as specified in this document.
- Do not allow anyone to swim under or near the dock at any time.
- Before allowing anyone to use the docks, be certain they fully understand the proper procedure for safe use.
- Keep people and pets clear during removal and installation of docks.
- Check the dock periodically as specified in the general maintenance section of this document for excessively corroded or rotted members, or any other condition in which safe use of the dock has been compromised.
- Wear heavy leather gloves when handling the docks during removal and installation, or during any adjusting. Insufficient hand protection when handling the docks can cause serious personal injury.
- Do not attempt to make any adjustments to the docks while they are in use.
- Never use the docks under the influence of drugs, alcohol, or medication.
- Dock maintenance schedule must be followed to avoid possible equipment failure or personal injury. See the maintenance section of this text for more information. Failure to perform proper maintenance can result in equipment damage or failure.
- Do not exceed the maximum torque rating on all bolts as specified in this document.
- Do not exceed the maximum weight rating on the docks.
- Never allow children to be on, near, or in the vicinity of the docks unsupervised. Failure to do so could result in serious personal injury or death.
- Never add additional equipment or products to the docks without prior authorization by the Bestmade Docks.

2.4 Mooring and Docking Watercraft

Often times one of the primary functions of a lake front dock is to tie or secure a watercraft to the dock for mooring purposes. If done correctly, your Bestmade Docks can certainly handle the pressures exerted on the docks by a light watercraft being tied on directly. Since the docks are installed in a variety of locations, with varying water

levels, wave heights, and wind directions, Bestmade Docks can neither specify safety limitations, nor take responsibility for damages or personal injury associated with any improperly moored watercraft. The best choice is to avoid securing a watercraft to the dock directly, and instead place the watercraft on a properly sized hoist.

3. Specifications

3.1 Specifications Introduction

Your Bestmade Products dock has been engineered to perform at a high level over the lifetime of the product. To ensure the docks are used in the correct way, and for reference, the following specifications have been made.

3.2 Specifications Table

Specifications List	4'x8' Dock	6'x8'Dock
Frame Weight *	80 lbs	90 lbs
Width	4 feet	6 feet
Length	8 feet	8 feet
Maximum Recommended Depth of Water	7 feet	7 feet
Number of Deck Inserts per Section	2	2
Deck Insert Weight **	40 lbs	60 lbs
Fully Assembled Dock Section Weight	160 lbs	210 lbs
Capacity	750 lbs	750 lbs

*Approximate frame weights will vary based on length and quantity of legs. The weights listed in the table were presuming (4) legs at 5ft long each.

**Deck insert weights can vary dramatically with material choice and condition.

3.3 Rated Load Capacity

The maximum rated capacity for any one section of dock in its installed position, whether connected to other docks or not, is 750 lbs. Exceeding this maximum rated weight limit could result in equipment failure which could lead to personal injury or death.

4. Inspection and Maintenance

4.1 Inspection and Maintenance Introduction

To ensure your Bestmade Dock performs at an exceptional level for the lifetime of the product, and to prevent compromising the safety of the dock, the following preventative maintenance should be performed.

4.2 Annual Inspection

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

1. Check and torque all bolts to the proper specification listed in the fasteners section of this manual.
2. Check the docks for rotted, cracked, split, or broken members.
3. Check all parts of the frame and deck thoroughly for defects of any kind.
4. Lube all leg set bolts as needed with a good quality marine grade anti-seize.

4.3 Storage Procedure

When storing your docks, use the following procedure:

1. Protect your docks as best as possible from airborne fallout, chemicals, tree sap, ice, or other weather hazards.
2. Never use the docks to lift or hang any auxiliary equipment such as boating hardware.
3. Do not allow anyone to swim, wade, or play near the stored docks at any time.