



**Guangzhou ACRDOCK Company Limited**

**ADD:** No. 16, Donghuan 3rd Road, Sha Chong, South District,  
Zhongshan City, China

**Tel:** 0086-760-88385970, 88263785 **Fax:** 0086-760-88386570

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# Pontoon Install Manual

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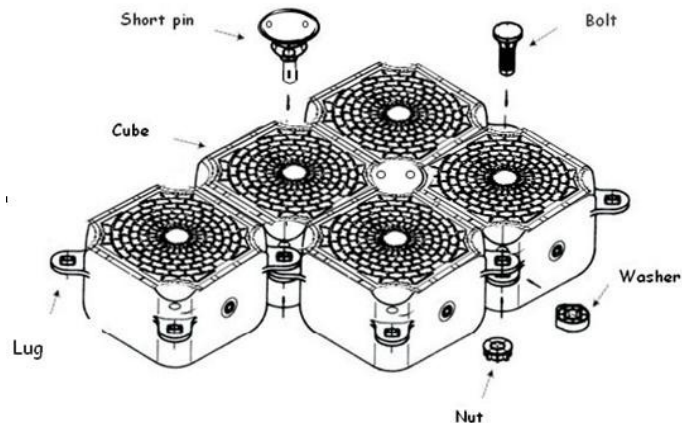
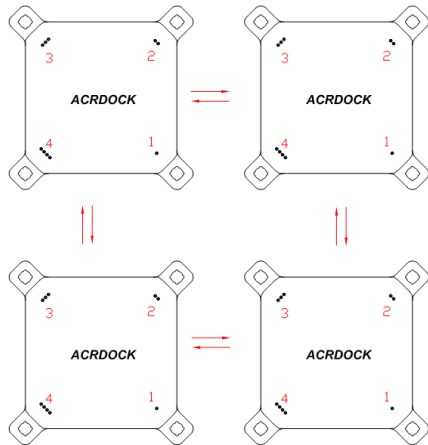
**Guangzhou ACRDOCK Company Limited**

**Edited by: Yannick Hoo**

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The main features of the Modular Float System (plastic pontoon) are the four fixing **lugs** around the cube and the **short pin** in the middle which holds the four lugs coming together when we assemble 4 **cubes**. In this module system way, we can expand the assembled surfaces to any form, any size as we wish. The Modular Float System can also be used for 2 or 3 layers of pontoon fixing with **long pin**.

Please note the lugs no.1 to 4 as below:

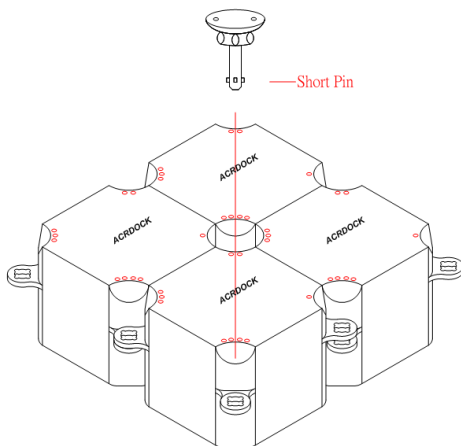


### 1. How to Install the cubes:

Please note the **lugs No. 1 to 4** as below, install the **cubes** according to 1,2,3,4 lugs, then we can get the cubes coming together and expand the cubes to the size as we wish.



### 2. How to install the short pin:



Please put the **short pin** in the middle and through the 4 lugs, use the stainless steel **torque wrench** turn 45° to lock the short pin:

**Step1:** Put the short pin into the lugs.

**Step 2:** Please note the holes of the pin, unlock.

**Step 3:** Put the torque wrench into the holes.

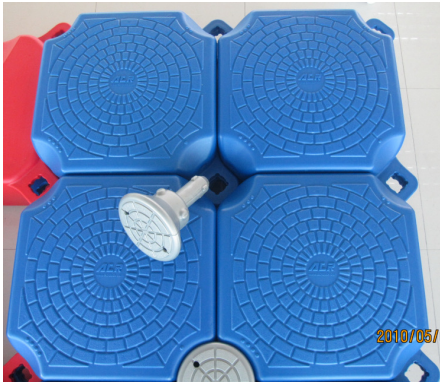
**Step 4:** Turn 45° to lock the short pin.

**Step 5:** Take the torque wrench out.

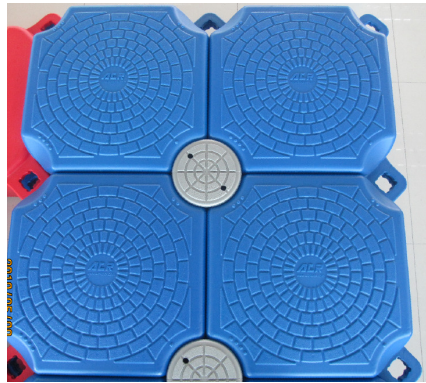
**Step 6:** Please note the holes of the pin, locked.

**Video:** <http://acrdock.com/Html/NewsView.asp?ID=147&SortID=25>

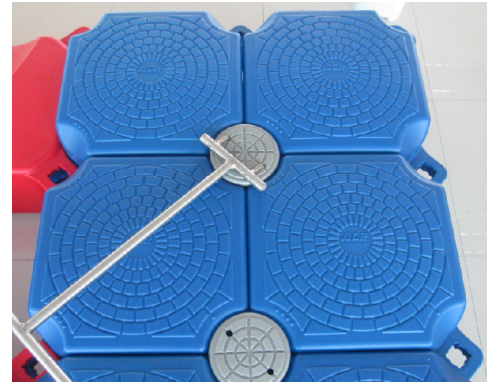




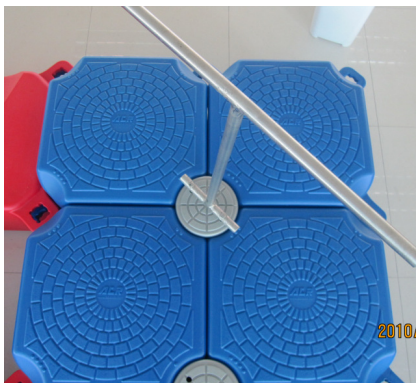
step1



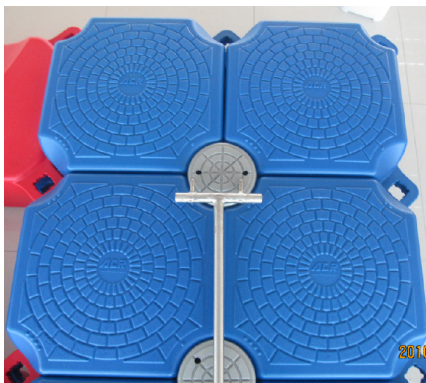
step 2



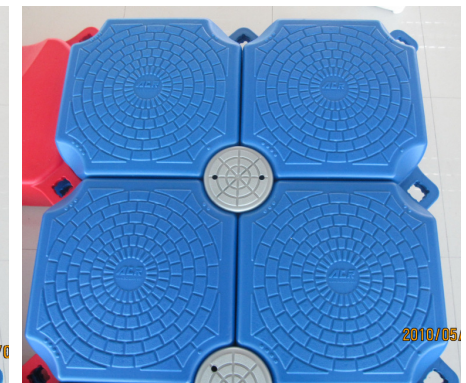
step 3



step 4



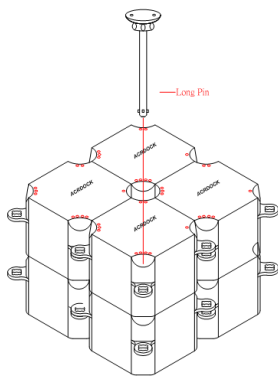
step 5



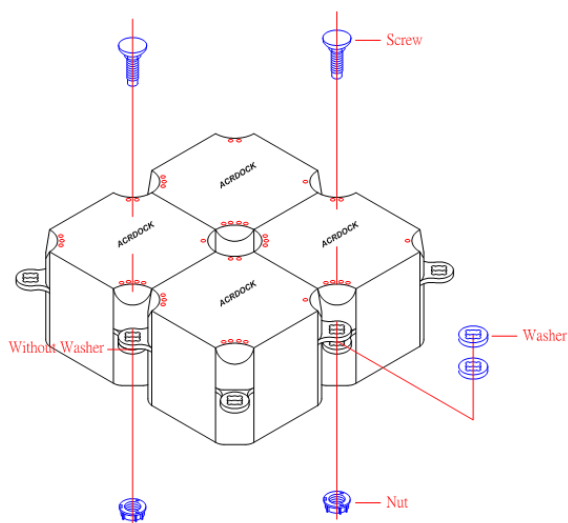
step 6

### 3. How to install the long pin:

Please put the **long pin** in the middle of the double layers and through the 4 lugs, use the stainless steel **torque wrench** turn 45° to lock the short pin. ***It's almost the same as the steps of the short pin installation.***



### 4. How to install the short screw & nut:

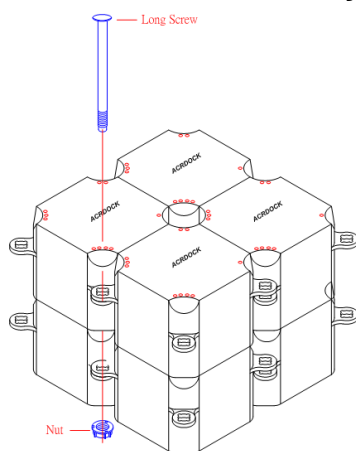


Please put the **screw** through the lugs on sides and lock the **nut** with stainless steel **nut wrench**, please note there is space between No.1 and No.4 lugs, put 2 pieces of washers to fill the space; it doesn't need washers for lugs if there is no space between them.



### 5. How to install the long screw & nut for double layers:

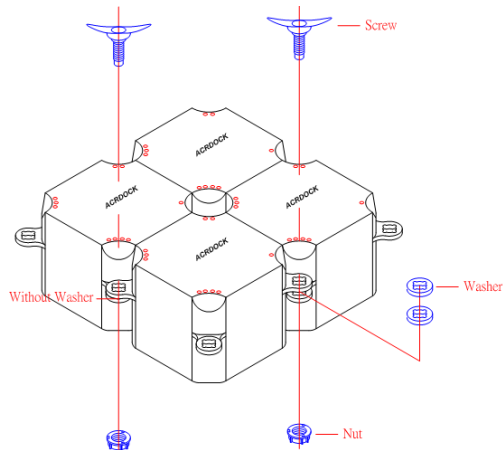
Please put the **long screw** through the lugs of the double layers cubes on sides and lock the **nut** with stainless steel **nut wrench**. **It's almost the same as the short crew and nut's installation.**





## 6. How to install the cleats:

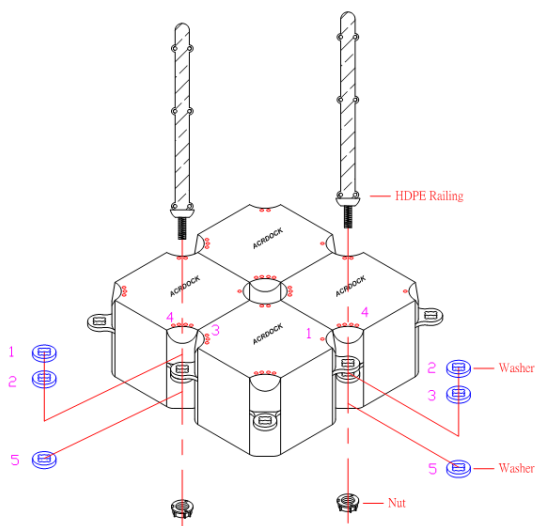
Please put the **cleat** through the lugs on sides and lock the **nut** with stainless steel **nut wrench**. *It's almost the same as the short crew & nut's installation.*



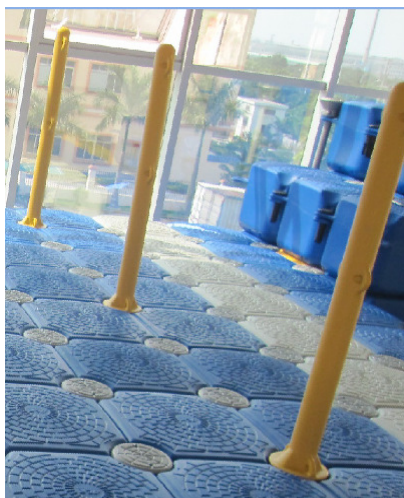
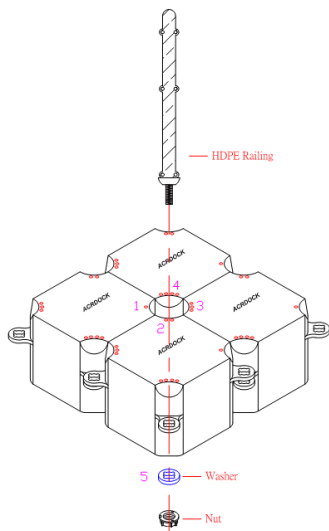
## 7. How to install the HDPE railings:

**7.1 On sides:** please put the **railing** through the lugs on sides and lock the **nut** with stainless steel **nut wrench**, please note each railing should get 3 pieces of **washers** *according to the lugs' number* then we can lock the railing tighten; please note the rings of the railings should be on the same line.

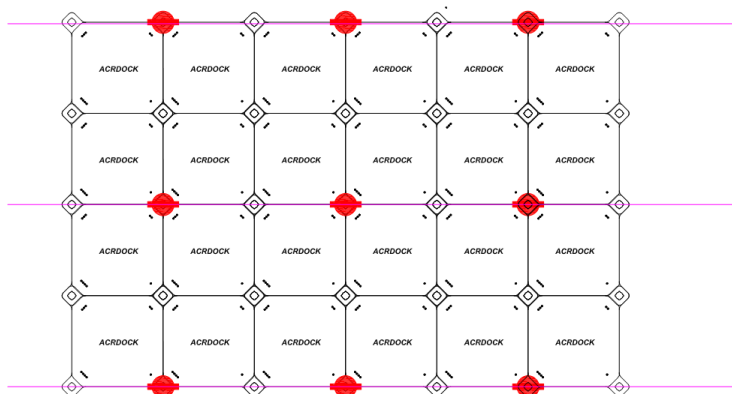
**7.2 In middle:** Please put the **railing** through the lugs of cubes and lock the **nut** from the bottom of the cubes. We may need to use steel sleeve to lock the nuts. Please note we need put 1 piece of **washer** before lock the nut; and please note the rings of the railings should be on the same line.



**HDPE Railings on sides**



HDPE Railings in middle



The rings are on the same line

### 8. How to fill the cubes with water:

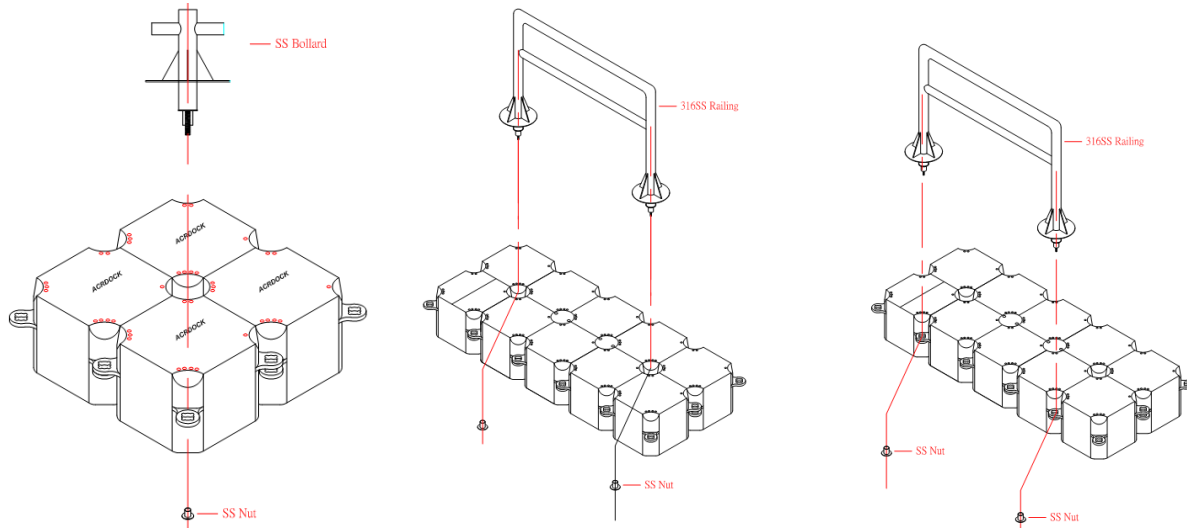
Please find the **hole** of the cube, on the side of the **Lug 1 and 4**, open the **cover** with the stainless steel **flooding key**, fill water into the cube.





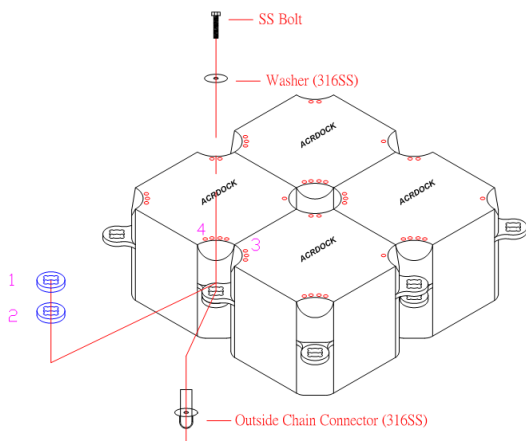
### 9. How to install the stainless steel bollards/cleats/railings:

Please put the stainless steel **bollard/cleat/railing** through the lugs of cubes and lock the **stainless steel nut** from the bottom of the cubes. We may need to use steel sleeve to lock the nuts.

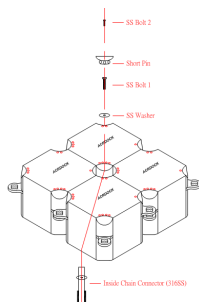


### 10. How to install the stainless steel chain connectors:

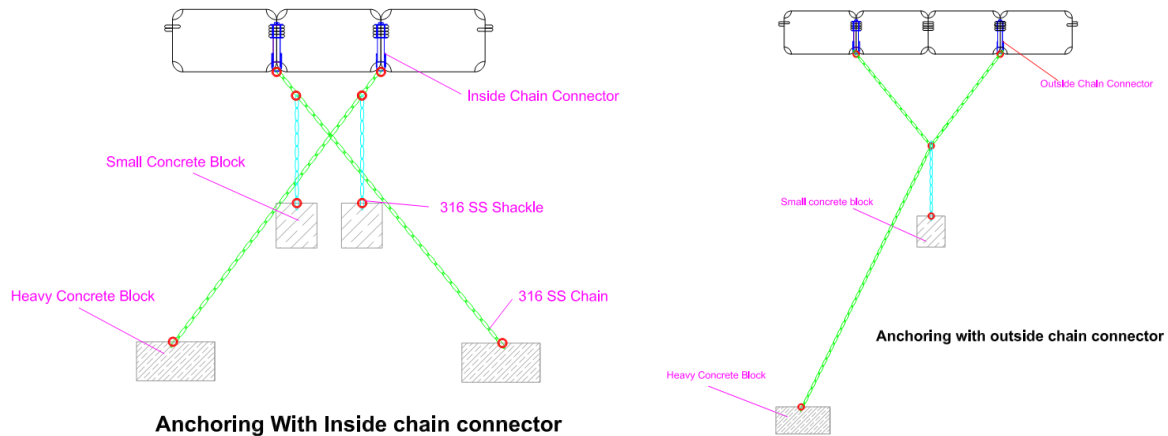
**10.1 Outside Chain Connector:** Please put the **outside chain connector** through the lugs of cubes and lock the **stainless steel washer** and **bolt** from the top. Please note we need 2 pieces of **HDPE washers** to fill the space between the outside chain connector and lugs.



**10.2 Inside Chain Connector:** please put the **inside chain connector** through the lugs of cubes from the bottom, and locks it with **stainless steel washer** and **bolts 1**, cover the **short pin** on it and lock with **stainless steel bolt 2**.



## 11. How to fix the pontoon by anchors and chain (Anchoring Plan):



**11.1.** Please note **anchoring plan** is good for the site location where **gets waves**.

**11.2.** The anchors could be **heavy concrete blocks** or **steel anchors**, which should get suggestion from **local fishing men** as they know the site location very well and good at anchoring work.

**11.3.** The **diameter of the chain** should be more than 10mm, or we can get suggestion from local fishing men too.

**11.4.** The **length of the chain** should match with the water depth and tide data on the site location which should get suggestion from local fishing men.

**11.5.** Please note there is **one** inside chain connector with **one** chain, and **two** outside chain connectors with **one** chain.

**11.6.** If we need use concrete anchors, we would fabricate them on site location, and **pre-set** stainless steel **connectors** in the blocks which are for **anchoring shackles**.

**11.7.** If we need use concrete anchors, we would make the heavy concrete block to be **at least** 500kg/pc, and the size could be 1x1x0.5m; we would make the small concrete block to be more than 80kg/pc, which the size could be 0.4x0.4x0.3m.

**11.8.** Please note the **total weight of the heavy concrete** blocks should be at least 2 times than the total weight of all the pontoons.

**11.9.** Please note that we need anchors **on both sides** of the pontoon, at least **each 10m** needs one couples of heavy concrete blocks (or other kinds of anchors such as steel anchors.)

## 12. How to fix the pontoon by piles (Piling Plan):

**12.1** Please note **piling plan** is good for the site location where there is almost **no wave**.

**12.2** Please note the **small piles** are good for **small docks** and the highest water depth should be less than 3m. Our small pile is stainless steel grade 316 pile, length is 6m, diameter is 44.5mm, and thickness is 3mm.

**12.2.1** Please note the small piles should be **into the sand at least 2m**, and extend about **1m above the mean tide level** to prevent floats from floating over the pile tops during wave conditions.

**12.2.2** Please note we need at least **a couple of small piles** for each **8m** to fix the pontoon/dock.

**12.3** Please note the **large piles** are good for **large project** such as yacht club or dock for big boats. Normally our projects used **400mm to 600mm diameter** piles.

**12.3.1** Please note the piles could be **wooden piles, PHC (concrete) piles or steel tube piles**, which should get suggestion from **marine engineering company**.

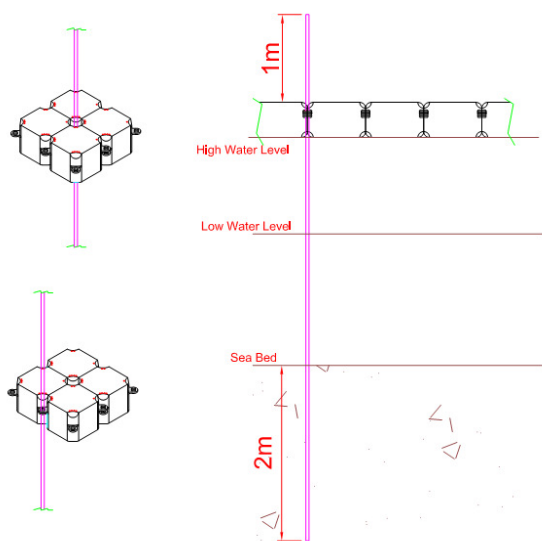


**12.3.2** Please note as an engineering project, you need **considering** the site soil conditions, water depths, pile spacing and applicable lateral loads, which should get suggestion from marine engineering company too.

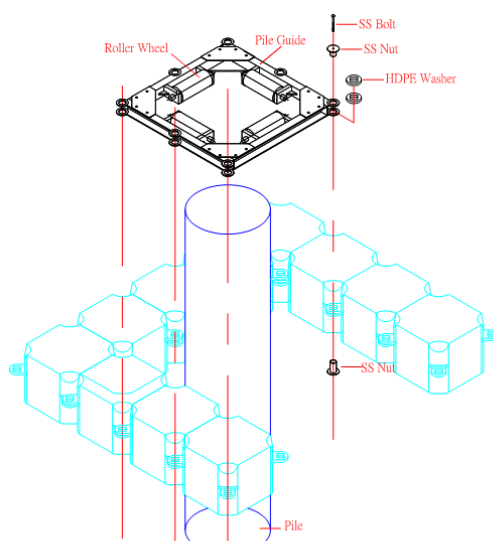
**12.3.3** Please note the **length of piles** depending on the site location: means should long enough for the highest high water level, and also into the rock at least 1m which means you need have a specific geotechnical report for the site location. The pilings shall extend a minimum of 1.5m above the mean tide level to prevent floats from floating over the pile tops during storm surge conditions.

**12.3.4** Please note the **size of the pile guides** should be match with the diameter of piles. The size could be customized.

**12.4** Please note if the waves are **higher than 0.5m** then it's not good to use piling plan to fix the dock. For some yacht clubs we need breakwater to protect the docks and boats.



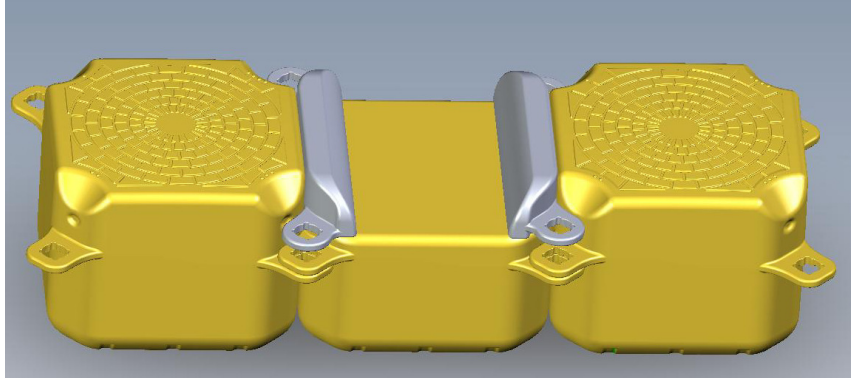
Small Piles into the lugs directly



Large Pile into Pile Guide

### 13. How to install the jet ski dock (small cube):

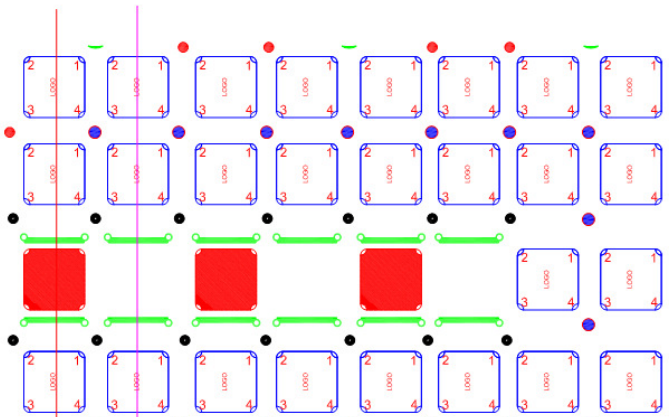
Here we'd like to introduce the **Jet Ski dock of small cube's** installation, take a 4x2m Jet Ski dock for example as below:



**13.1** Fill the **2 lines of cubes** with water, please note the **first line of cubes** should be filled with about 70 litres water (about 28cm of the cubes), and **second line of cubes** should be filled with about 35 litres of water (about 14cm of the cubes).

**13.2** Put all the **cubes together** according to the plan; please note the **numbers of lugs**.

LEGEND & Quantity		
LEGEND	ITEM	QUANTITY
	50x50x40cm Cube	26 pcs
	50x50x30cm Cube	3 pcs
	Short Pin (small)	9 pcs
	Long Screw&Nut for Jet Ski Dock	14 sets
	Short Screw&Nut	9 sets
	HDPE Cleat	9 sets
	Ramp/Bumper	12 pcs
	Washer	40 pcs
	Torque Wrench	1 set
	Flooding Key	1 set
	Nut Wrench	1 set



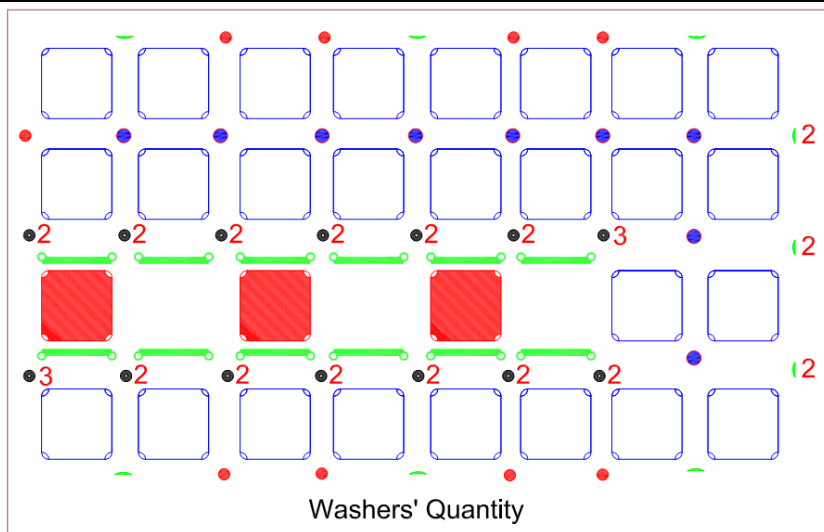
This second line of cubes should be filled with water, about 35 litres.

This first line of cubes should be filled with water, about 70 litres.

**13.3** Lock all the **short pins**.

**13.4** Put the **long screws & nuts for the ramps** at the right points; please note the lugs of the ramps, the right lug is higher than the left lug of each ramp; please note the **washers**' quantity, we need the washers to make the ramps on the same level.





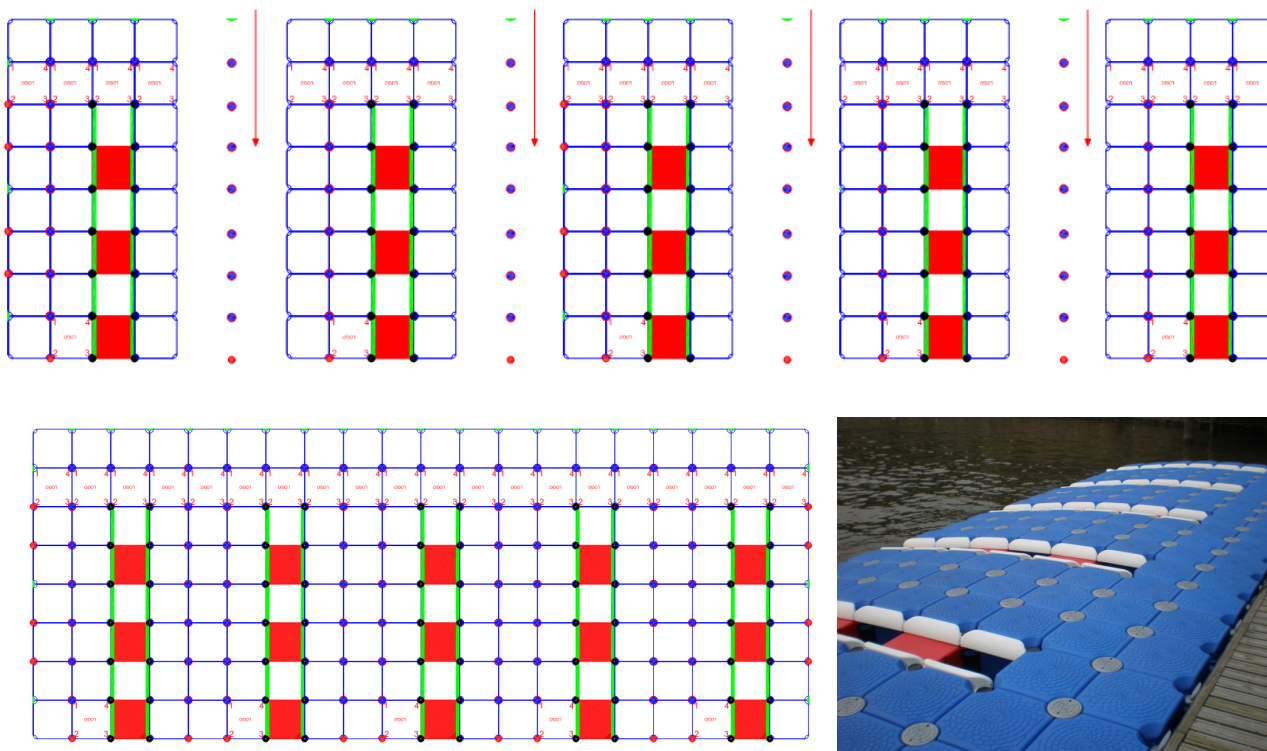
**13.5** Lock all the **long screws & nuts** with stainless **steel nut wrench**. Please note how to put the **washers** in order to keep all the ramps on the same level. Photos for reference as below:



**13.6** Lock all the **short screws & nuts** and **cleats** on sides. One Jet Ski dock done.



**13.7** If you need install **several Jet Ski docks** together as one pontoon dock, you can install each Jet Ski dock on shore at first, and then push into water and connect all the docks together.



#### 14. Remark:

- 14.1** Please note this manual is a **guideline** for the pontoon's installation, sometimes maybe different which should get suggestion from us in advance.
- 14.2** Please note for easier installation, we would like to **install** the small docks **on shore** at first, then push into the water and connect them together on water, it's similar with the **13.7**.
- 14.3** This manual was edited by Mr. Yannick Hoo from ACRDOCK, if have any question please contact via [yannickhe@yahoo.cn](mailto:yannickhe@yahoo.cn) or [yannickhe@acrdock.com](mailto:yannickhe@acrdock.com), and mobile number 0086-159-0202-5660.
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**2010-05-25**