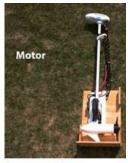# MARKSETBOT

# SETUP GUIDE

Congratulations on joining the MarkSetBot revolution!  By using MarkSetBot, you are choosing the Botter Way to run races.  You're helping to move race administration and sailing to a new, more efficient, environmentally friendly, and technological platform.  You have also invested in a product and a company focused on growing sailing.  Reach out to us at support@marksetbot.com or https:// marksetbot.zendesk.com with any questions, concerns, or comments.

This document, along with the [video series](#) will guide you through the process of setting up and activating your Bot.

Make sure you keep all of the shipping materials sent with your Bots so you can ship them back at the end of your lease or event.

## What is in the Boxes:

62" x 17" x 10" box
- • Minn Kota Electric Trolling Motor
- • Minn Kota propeller
- • ProNav upper unit
- • ProNav lower unit
- • Air pump

18" x 17" x 12" box
- • Pelican Box
- • Smartphone - This is the "brain" of the Bot
- • USB-C Charger
- • Lithium-ion battery

35" x 20" x 9" box
- • Hull with tow bridle

35" x 20" x 9" box
- • Inflatable topside
- • Pump

# Assembling and Using the Bot:

## Inflating the Pontoons

- It is best if the Bots are assembled on a grassy area or smooth surface to minimize the likelihood of damaging the inflatable components
- Plug the pump's electrical connector into the waterproof connector on top of your Pelican box.  Place the circular end of the black air tube on the circular side of the pump and push down until it is secure
- Set the pump to 20 kPa
- Remove the valve cap on one of the Pontoons
- Push the tab so that it is in the outward position
- Place the slotted end of the black air tube on the valve and turn clockwise to secure
- Press the button on the pump. Once the Pontoon is full (the pump will turn off automatically), remove the tube and replace the cap.
- Repeat this step with the other Pontoon

## Inflating the Deck

- Reset the pump's pressure to 40 kPa
- Remove the cap on a Deck, verify the tab is in the outward position, insert the black tube to the valve and press the button on the pump. Once the Deck is full (the pump will automatically turn off), remove the tube and replace the cap.
- After you have the hull inflated, it is easiest to undo the pump from the battery, but keep the pump close by because you will need it later
- Make sure that the on/off button is facing the same direction as the valves on the deck/pontoons
- Pick up the battery and place it into the open slot
- Push down on the battery until it is all the way into the slot
- If your hull has battery straps, secure them to hold the battery in place

## Placing the Motor

- First you need to find the motor with the serial number that MATCHES the serial number on the battery
- Next, remove the motor from its wooden cradle
    a) Pull out the faspins that are securing the motor at the top of the cradle
    b) Grab the motor shaft and pull straight up to pull it out of its tracks
    c) NOTE: Use your foot and step on the bottom of the wooden cradle to make this step easier
- Bring the motor to the deck and align the tracks on the motor to the tracks on the deck
- Slide the motor until the holes on the tracks on the motor are aligned with the holes on the deck
- Push the faspins through the holes and turn the rings so they are underneath the motor

## Raising the Motor

- Check that the positive and negative connectors are no longer wrapped around the motor and are free and clear and won't get tangled

- Push on the front black lever to release the motor, pulling it straight out then push on that top black lever to pull the motor to a vertical position
- Pull straight up on the motor shaft until it locks into place (once you hear it click it is in position)
- You will use the front black lever to lower and raise the motor every time you are deploying, towing or bringing your Bots onto a dock (remember to only lower the motor when you are ready to deploy the Bots, the motors must be up anytime you are towing)

## Connecting the Motor to the Battery
- Once you have the motor upright you can connect it to the battery
- Remove the caps from the battery connectors, then place the corresponding side from the motor to the battery.
- Make sure that they are fully plugged in.
- Then, take the caps and plug them into each other to keep them free and clear and avoid anything getting tangled.
- Push the button at the front of the battery to turn the Bot on.

## Placing the Topside
- Place the topside on the deck and unroll it so that it goes over the front.
- Make sure that you have the valves on the topside facing the same direction as the valves on the pontoons and deck.
- With the topside facing the right direction, start to unfold it.
- Then, grab the side closest to the motor and lift the topside over the motorhead (be careful that it clears the motorhead and doesn't get tangled or stuck as it comes down)
- From there you will gently pull the topside so that the valves are in line with the valves on the deck and that the four corners fit loosely around the four corners of the grey deck.
- Connect the four buckles that are in each corner (it is easiest to do this before you inflate the topside)

## Inflating the Topside
- Once you have the topside placed in position, you're going to reconnect the pump.
- Unscrew the valve covers on all of the valves of the topside.
- Push the tabs so that they are all in the outward position.
- Grab the slotted end of the black tube and place it in the valve of the bottom topside ring and turn clockwise to secure.
- Change the setting on the pump to 15 kPa, press the black button and let it inflate.
- Then going to repeat this process on the other rings.
- Once the topside is fully inflated, screw the valve covers back on

## Using the App
- You will need to use the MarkSetBot app. The app is available from the Apple Store, Google Play Store and Windows Store.

- New users must register and create an account.
- You can do this one of two ways; you can hit the button that says register as a new user and then type in and email and create a username, or you can use one of your existing social network sites to create an account (we recommend using a social network log in because it is one less password that you have to remember).
- Whichever way you choose to register is the way you will log into the app. Once you have logged in you will get brought into the app and you will see terms and conditions.
- Once you accept the terms you are brought into the main page of the app.
- Across the top of the screen is the main menu.
- On the left side of the screen you will see circles representing the Bots. All of your marks will be listed on the left side of the app.
- They can be 4 different colors; gray means that the Bot offline (either because it cannot connect to internet or because you cannot connect to internet), red means the Bot is turned on but hasn't connected to Bluetooth or GPS yet, yellow means the Bot is in the process of getting a GPS lock, and finally green means that it is fully connected.
- At the bottom of the Bot menu is the routes and waypoints button. This will allow you to see all of the waypoints you have created and create routes for your Bots to travel.
- When you click on a mark a menu at the bottom of the screen will pop up.
- An easy way to think of the two menus is that the top menu applies to all of the Bots and the bottom menu applies to the specific Bot you clicked on.
- If the icon is red or yellow, you can click on the Bot on the left and see in the bottom menu what is connected and what is not.
- On the top menu you will see navigate, anchor, stop, layout, refresh and menu.
  a) Navigate will cause all of the Bots to move to the location you have them set to and then automatically "anchor" once they get to that spot.
  b) Anchor causes all of the Bots to anchor and hold position wherever they are at that moment, whether they are at their set location or not (it is important to know that if you hit navigate you do not have to hit anchor, the Bots will anchor automatically.)
  c) Stop will turn off the props on every single Bot, once Bots are off they are no longer holding position but are just drifting.
- Now looking at the bottom menu you will see that it is almost the same as the top menu. Navigate, anchor and stop all do the same things but will only apply to the specific Bot you have clicked on.
- Looking back at the app screen you will see a map.
- You will always show up on the screen as a circle labeled "Me", whether you are on the RC boat, on the dock, or in a different country.
- You will also see two different colored circles that correlate to the Bots in your organization, pink and orange.
- Orange is where you want the Bot and pink is where the Bot actually is. When a Bot is in position, those circles are at the same location (helpful hint is that the orange dot will appear where the Bot was last anchored so if you can't see the orange dots, try zooming out until you find them).
- To bring the orange dot to you on the screen a trick is to launch the Bots in the water and then hit anchor, this will bring the orange dot to wherever you are at that moment.

- When you navigate or anchor a Bot for the first time after opening the app you will get a message alerting you that the prop is about to engage. You hit accept and then you will see a message that the Bot has successfully received your command.
- There are a couple ways to move a Bot. The first way is to manually drag and drop the orange circle where you want the Bot to go.
- Once you have moved the orange dot or dots to their desired locations you can either hit navigate at the top to move all the Bots or navigate on the bottom to move just the one specific Bot.
- A more advanced option is to use the layout feature in the top menu. This will pull up a separate menu that allows you to input information regarding wind direction and course length to build a specific course.
  a) Next to the various fields are the measurement units used. At the bottom of the screen there is an option to auto-pin the marks.
  b) If you choose to autopin, then the orange dots will automatically go to their specific locations. This does not mean that they will automatically start navigating but you won't have to drag and drop the orange circles. *In order for the Bots to go to their intended locations you must assign them roles*.
  c) If you choose to not autopin, then the course layout diagram will appear on your screen but you will have to manually drag and drop the orange circles to their correct locations.
- Head back to the main app screen and hit menu on the top menu. From there you will click on Configure Bots.
- This will bring you to a screen where you can give each Bot a two-character name and assign it a specific role on the racecourse, for example: windward, leeward left, start, etc.
- Then you will hit "save all" in the bottom left and your marks are now assigned roles
- Now when you create a layout and hit autopen, the Bot you have assigned to be the windward mark will pin itself to the top of the course (you still must hit navigate for the Bots to move.)
- The app automatically refreshes data information every 15 seconds but if you want to see where the location of the Bots or other users you can tap the refresh button.
- To see specific information about each Bot you can click on its pink dot on the map screen. That popup will show you what percentage the prop is spinning at, the speed and direction of the Bot, how far away it is from the waypoint or set location, distance from RC (remember that is you). This is helpful If you are tracking a specific Bot as it moves because you can see how fast it is going and how far away from its intended location it is.
- If you are having trouble with your Bots, there are a couple problem solving tools available by tapping the battery button for a specific Bot.  That will let you RESETCOMPASS or RESETPRONAV. RESETCOMPASS is used to remotely clear the compass calibration data on the Bot.  It can be safely used while a Bot is anchoring.  RESETPRONAV restarts the entire GPS unit.  This takes between 60 seconds and 10 minutes.  During that time period, the Bot will drift.  You should only use this option if a Bot isn't anchoring correctly.  The green circle on the left will turn red and then yellow as it acquires a GPS lock, and then it will turn green when it is ready.

## Testing the Bot

- The last step to take before you are ready to launch your Bots is to test them and make sure everything is set and working properly.

- To test your Bot, you will click on the specific Bot then in the bottom menu you will hit remote. This will bring you to the manual remote screen. This screen will allow you to manually drive the Bots by moving the motor head left or right and adjusting the speed of the prop.
- First, test the steering system by tapping Left 90 followed by Right 90
- Next, make sure that the prop is free and clear of the deck and that when you turn it on it won't hit or puncture anything.
- Finally, you will test the prop by hitting go and then up a couple times. The prop will start spinning and at the top of the screen you will see what the prop speed is. Slowly hit up until the prop is spinning at 100%. Then you will hit stop.
- Once you have successfully tested your Bots, you are ready to launch them.