



# AQUA POWER

Technologies

MANTA Float Bridle Installation & Removal

MK1.0

# Summary

S.Etherington | 05/06/2024 | MK1.0

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## Overview

This deployment procedure relates to the installation and removal of MANTA's float bridles. The bridles couple MANTA's float in four radially equispaced places to the four points of the farms grid cell.

## Version

MK1.0 05/06/24      Initial release of procedure.

# Bridle Detail

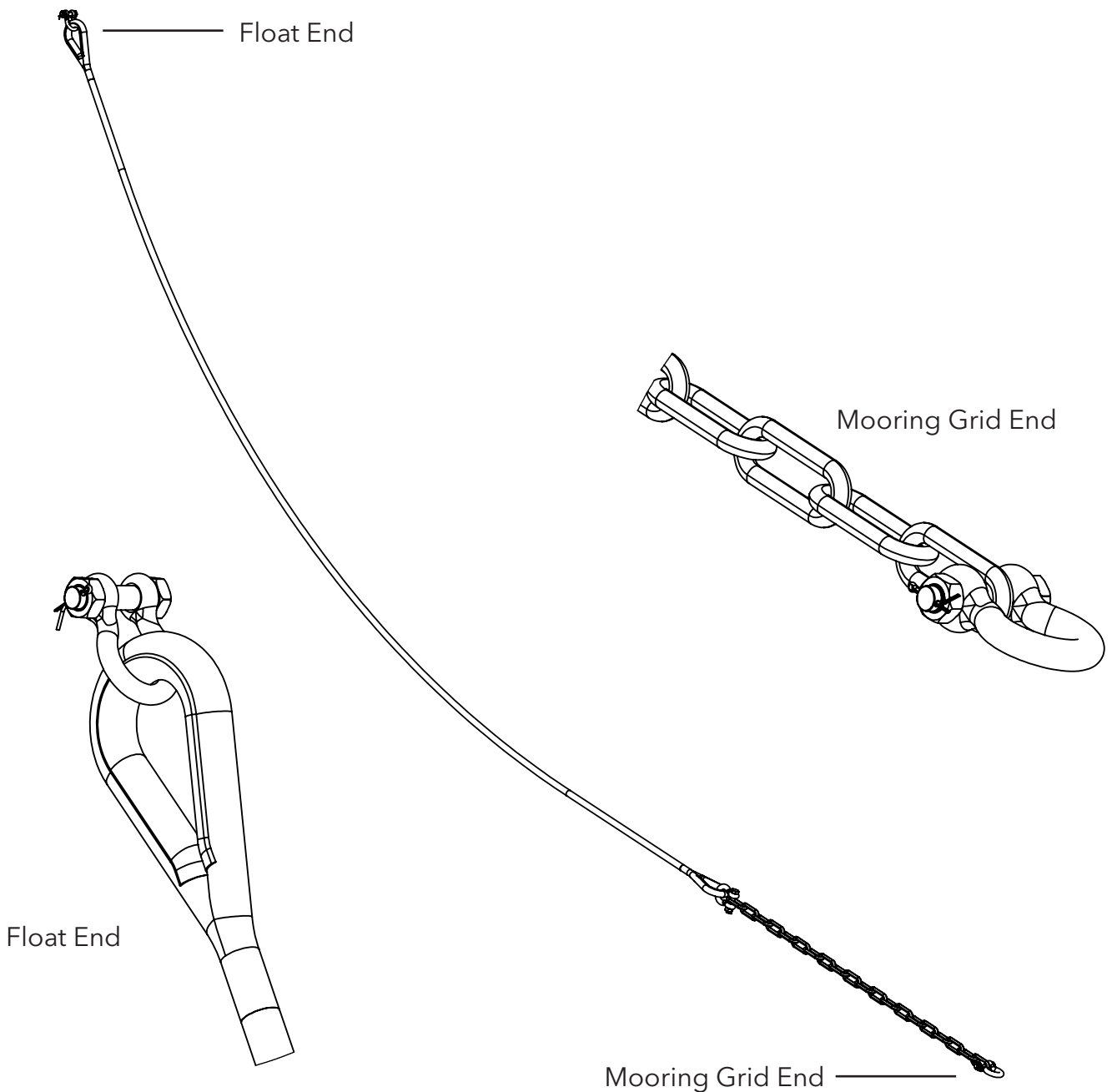
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Shown below is one of the four bridles which is shackled to the float and the grid in four equispaced locations. When the float is installed, the float end of the bridle connects to the floats 16mm short link stainless steel mooring line, of which there are four. The mooring grid end connects to the grids mooring plate, of which there are four.

If the float is not installed, the float end connects to one of the four tails found on the temporary float assembly, which is used to ensure the bridles are correctly positioned when the float is not installed.



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# Temporary Float Assembly Detail

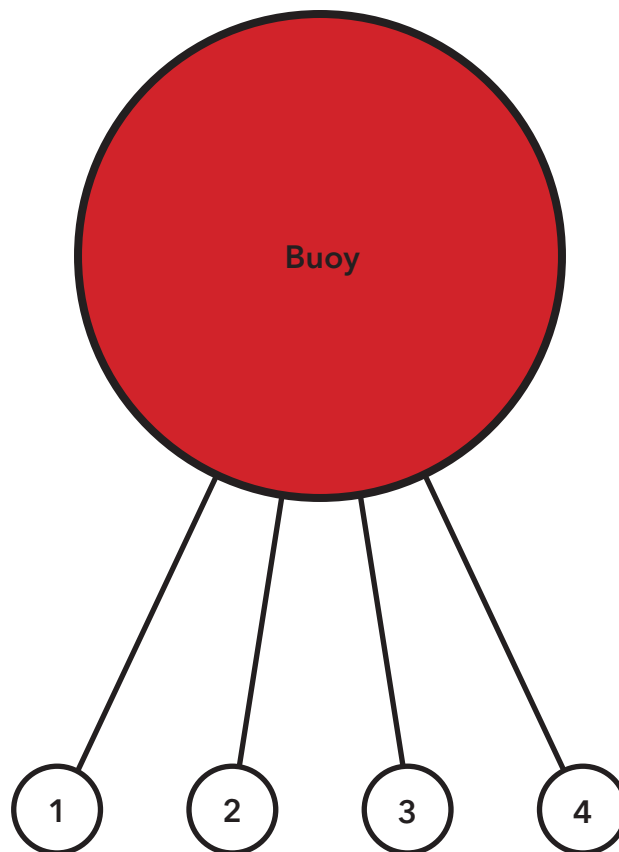
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Shown below is the temporary float assembly, which is used when MANTA's float is not installed within the grid. The purpose of the temporary float assembly is to tether the bridles centrally to avoid any abrasion of the bridles on the grids mooring lines, to avoid the bridles drifting in opposite directions, and to ensure the bridles do not sink.

The temporary float assembly consists of a buoy, and four tails with quick release carabine hooks. The carabine hooks can be quickly attached to the float end of the bridles. Below the carabine hooks are labelled 1,2,3, and 4.



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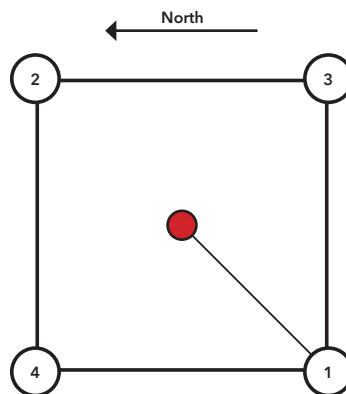
# Bridle Installation Procedure

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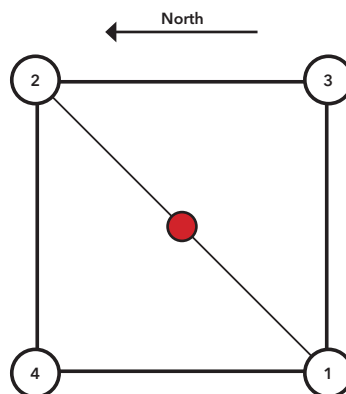
## Step 1

Attach the mooring grid end of the first bridle to the South West mooring grid plate, or to the mooring grid plate which is pointing into the predominant wave direction. Attach the float end of the first bridle to carbine hook 1 on the temporary float assembly. The deployment should look as follows.



## Step 2

Attach the float end of the second bridle to carbine hook 2 on the temporary float assembly. Now, attach the mooring end of the second bridle to the opposite mooring grid plate to mooring grid plate 1. The deployment should look as follows.



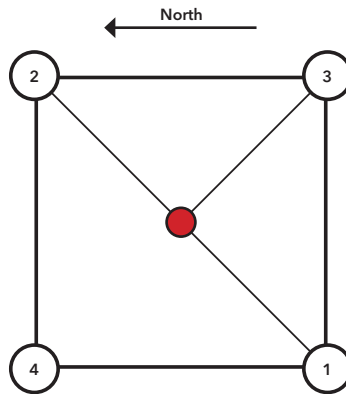
# Bridle Installation Procedure

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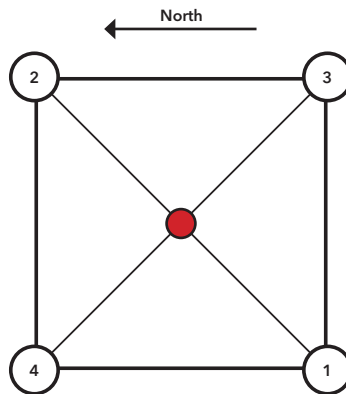
## Step 3

Attach the mooring grid end of bridle three to either mooring grid plate 3 or 4. In this example mooring grid plate 3 has been used. Attach the float end of bridle three to carbine hook 3 on the temporary float assembly. The deployment should look as follows.



## Step 4

Attach the mooring grid end of bridle four to the remaining mooring grid plate. In this example mooring grid plate 4 is the remaining mooring grid plate. Attach the float end of bridle four to carbine hook 4 on the temporary float assembly. The deployment should look as follows.



## Complete!

The installation of the bridle lines is now complete. The bridle lines should now all be fastened to the appropriate mooring grid plates, and fastened via the carbine hooks to the temporary float assembly.

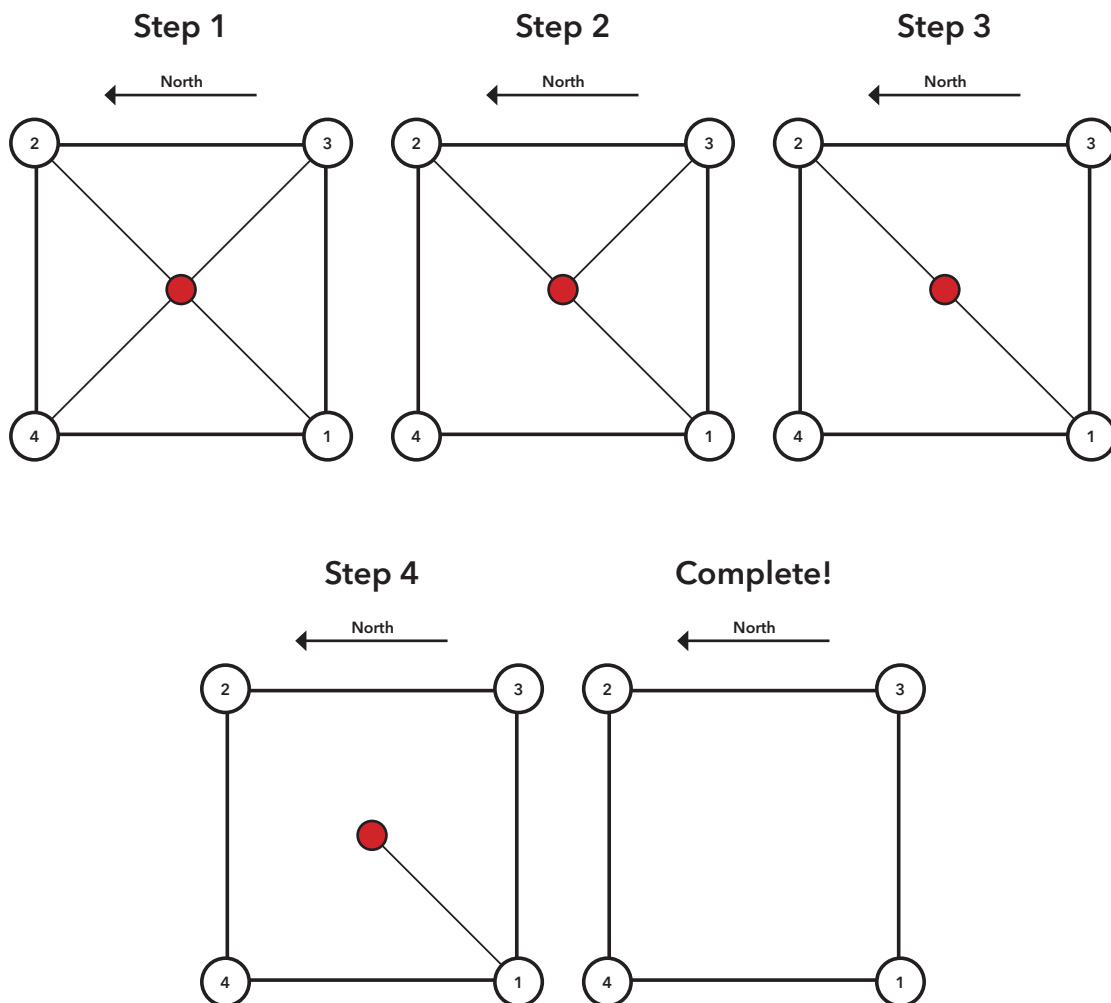
This deployment should be used to ensure the correct position of the bridles when the MANTA converter, and the MANTA float are both offsite.

# Bridle Removal Procedure

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The removal of the bridles from the grid follow the exact same instructions for the installation, but in reverse. This procedure will be required when completely decommissioning the site. The following diagrams represent the removal procedure.



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