Qingdao Waysail Ocean Technology Co., Ltd

Started as a marine mooring equipment manufacturer in 20 years ago, and now we has developed into a supplier of supplying turnkey solutions to marine and aquaculture industries. We can design and supply whole sets of Mooring System, Net Pens and relative equipment for marine & aquaculture projects.



Project design, "one-stop" products, professional service and solutions.
It' s our Waysail OceanTec Job to provide clients the Optimal Solutions in time and within budgets.

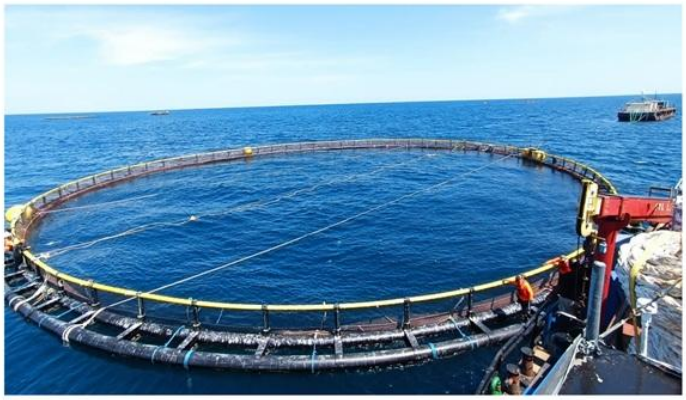
WAYSAIL

www.qdwaysail.com
TEL: +86 15063990849

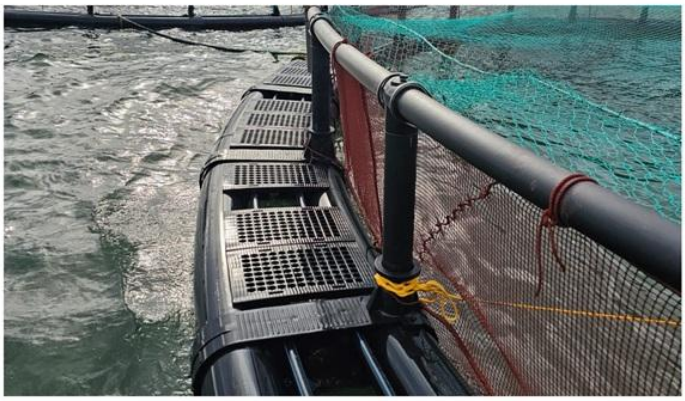


Fish Cage Specification

Circumference	30m-50m	40m-60m	60m-80m	80m-120m	100m-140m	140m-200m
Floating Pipe Size	Φ200mm	Φ250mm	Φ315mm	Φ400mm	Φ450mm	Φ500mm
Bracket Type	L200 Type	L250 Type	L315 Type	L400 Type	L450 Type	L500 Type
Upright Pipe Size	Φ110mm	Φ125mm	Φ125mm/Φ140mm	Φ160mm	Φ160mm	Φ180mm
Handrail Pipe Size	Φ90mm	Φ110mm	Φ110mm/Φ125mm	Φ140mm	Φ140mm	Φ160mm









Floating Fish Cage

Fish Cage Composition

The main floating pipe consists of two HDPE pipes with a diameter(Φ) of ≥200mm, which are hot melt butt fusion welded into a fully enclosed circular ring. The inner and outer pipes are connected and fixed by HDPE I-shaped frames. The handrail pipe is made of one circular, hollow polyethylene plastic pipe, which is butt fusion welded into a circular ring.

The I-shaped frame is a one-piece structure formed by a double holes HDPE bracket, an upright pipe, and an equal-diameter tee butt fusion welded with upright pipe. The double-hole HDPE bracket is a special pipe fitting for anti-wind and wave cage frame, manufactured by mold pressure injection molding, with a minimum thickness of ≥20mm at its thinnest point. The I-shaped frames are evenly distributed along the perimeter of the cage frame, with a spacing of 1.5m to 2.0m.

Pins and Stoppers are provided as assembly accessories. Pins are used to secure the connection between the upright pipe and the bracket, as well as to fix the tee and the handrail pipe. Stoppers are thermally welded to both sides of the bracket to secure the bracket in place. Walkway pedals are provided as an option, depending on customer design.



HDPE100 Pipe

SDR9/2.0MPa		SDR11/1.6MPa		SDR13.6/1.25MPa		SDR17/1.0MPa		SDR21/0.8MPa		SDR26/0.6MPa	
Size	Weight	Size	Weight	Size	Weight	Size	Weight	Size	Weight	Size	Weight
20×2.4	0.141	20×2.3	0.132	-		-		-		-	
25×3.0	0.222	25×2.3	0.169	25×2.3	0.17			-		-	
32×3.6	0.338	32×3.0	0.283	32×2.4	0.23	32×2.3	0.22			-	
40×4.5	0.526	40×3.7	0.437	40×3.0	0.36	40×2.4	0.29	40×2.3	0.28	-	
50×5.6	0.814	50×4.6	0.676	50×3.7	0.56	50×3.0	0.46	50×2.4	0.37	50×2.3	0.36
63×7.1	1.284	63×5.8	1.074	63×4.7	0.887	63×3.8	0.728	63×3.0	0.582	63×2.5	0.489
75×8.4	1.810	75×6.8	1.501	75×5.6	1.258	75×4.5	1.027	75×3.6	0.832	75×2.9	0.677
90×10.1	2.611	90×8.2	2.170	90×6.7	1.806	90×5.4	1.478	90×4.3	1.192	90×3.5	0.98
110×12.3	3.889	110×10.0	3.236	110×8.1	2.671	110×6.6	2.208	110×5.3	1.796	110×4.2	1.438
125×14.0	5.029	125×11.4	4.191	125×9.2	3.447	125×7.4	2.816	125×6.0	2.31	125×4.8	1.867
140×15.7	6.315	140×12.7	5.231	140×10.3	4.323	140×8.3	3.537	140×6.7	2.89	140×5.4	2.352
160×17.9	8.231	160×14.6	6.869	160×11.8	5.659	160×9.5	4.626	160×7.7	3.795	160×6.2	3.086
180×20.1	10.400	180×16.4	8.682	180×13.3	7.174	180×10.7	5.862	180×8.6	4.77	180×6.9	3.865
200×22.4	12.873	200×18.2	10.707	200×14.7	8.814	200×11.9	7.243	200×9.6	5.915	200×7.7	4.791
225×25.2	16.292	225×20.5	13.565	225×16.6	11.194	225×13.4	9.175	225×10.8	7.486	225×8.6	6.022
250×27.9	20.051	250×22.7	16.696	250×18.4	13.789	250×14.8	11.264	250×11.9	9.168	250×9.6	7.468
280×31.3	25.189	280×25.4	20.926	280×20.6	17.291	280×16.6	14.149	280×13.4	11.56	280×10.7	9.324
315×35.2	31.870	315×28.6	26.505	315×23.2	21.906	315×18.7	17.929	315×15.0	14.561	315×12.1	11.86
355×39.7	40.504	355×32.2	33.634	355×26.1	27.777	355×21.1	22.797	355×16.9	18.489	355×13.6	15.024
400×44.7	51.391	400×36.3	42.721	400×29.4	35.257	400×23.7	28.858	400×19.1	23.541	400×15.3	19.046
450×50.3	65.056	450×40.9	54.143	450×33.1	44.653	450×26.7	36.572	450×21.5	29.811	450×17.2	24.088
500×55.8	80.205	500×45.4	66.784	500×36.8	55.157	500×29.7	45.198	500×23.9	36.82	500×19.1	29.722
560×62.5	100.615	560×50.8	83.703	560×41.2	69.165	560×33.2	56.594	560×26.7	46.076	560×21.4	37.297
-		630×57.2	106.020	630×46.3	87.45	630×37.4	71.717	630×30.0	58.245	630×24.1	47.25
-		710×64.5	134.724	710×52.2	111.11	710×42.1	90.987	710×33.9	74.165	710×27.2	60.097
-		800×72.6	170.883	800×58.8	141.027	800×47.4	115.433	800×38.1	93.931	800×30.6	76.184
-		900×81.7	216.333	900×66.2	178.611	900×53.3	146.031	900×42.9	118.981	900×34.4	96.353
-		1000×90.2	265.547	1000×72.5	217.591	1000×59.3	180.507	1000×47.7	146.987	1000×38.2	118.888
-		-		1200×88.2	317.31	1200×67.9	248.738	1200×57.2	211.521	1200×45.9	171.413



HDPE Cage Bracket

HDPE Brackets are sized according to the pipe’ s diameter, such as 315mm double holes bracket will be used for cages with two floating pipes of OD315mm.

Injection molded brackets are made by feeding polyethylene plastic into a heated barrel, where it is mixed and then injected into a mould, where itcools and hardens. Injection molded brackets are solid components, and so are very robust, but heavier than those produced by rotational moulding.

Our factory is a professional manufacturer of the plastic injection products with 6000tons of injection molding machine. Over the past few years, we have been dedicated to the production of fish cage brackets, marine leisure platform brackets, Tees, Walkway padels and other pipe fittings.
on customer design.

Name	Photo	Size (mm)
Double Holes Bracket		200*110
		250*125
		315*125/140
		400*160
		450*160
		500*180
Tees		110*90
		125*110
		140*125
		160*140
Walkway Padel		315/400 (47mm*66mm)
		450/500 (47mmX98mm)
Stopper		400/450/500
Pin		/

Bird Net Support Wheel

The larger size helps to increase the surface area supporting the top net thus reducing any point loading.

Main flotation ring made from Φ180mm PE pipe.Minimal movement makes them ideal for large diameter pens.

Utilizes electrofusion process and control.
Modular design with the option to increase circumference.

Circumference	30m	42m
Diameter (m)	9.6m	13.4m
Flotation Pipe Size	180mm	180/250mm
Number of Uprights	10	14
Upright Pipe Size	125mm	125mm
Top Ring Pipe Size	125mm	125mm
Height	2.6 meters	3 meters



Mooring System

The fish cage mooring system is a square shaped grid system held on the sea bed with an array of mooring lines. It is a dynamic system used for keep the farm in a fixed position and to avoid transfer of excessive forces to the cages.

The mooring system consists of two main groups of components, the mooring lines and the grid system. The mooring lines include anchor, anchor chains, ropes, buoys and connection shackles. The grid system includes frame rope, mooring rope, connection plate, bridle ropes and connection shackles. In a grid system, the cages are moored aggregation in modules. System design depends on the number of cages that will be moored, as well as the number of mooring lines.



Stingray Anchor



Anchor Chain



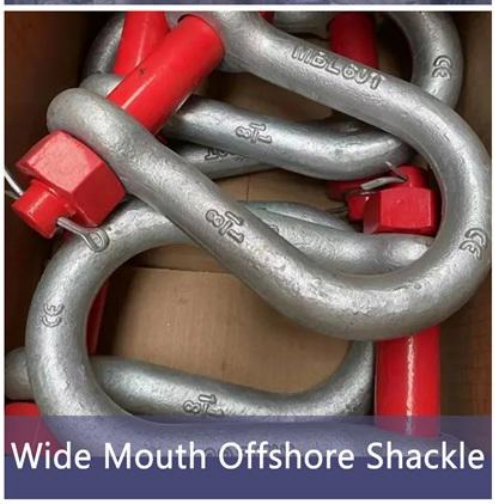
Mooring Rope



Mooring Connection Plate



Mooring Connection Ring



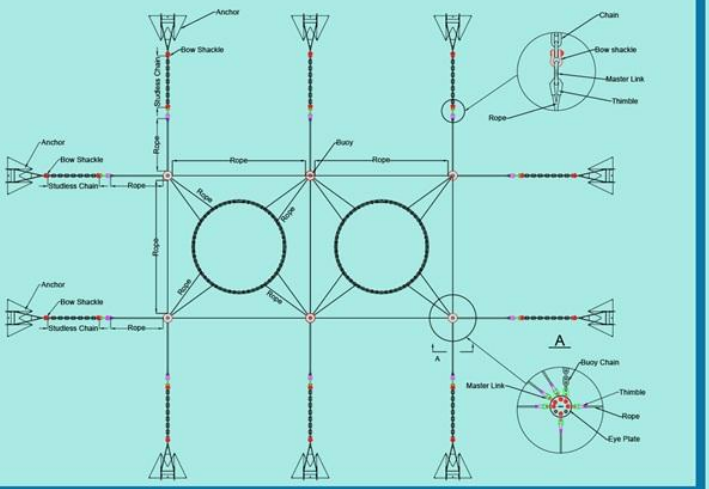
Wide Mouth Offshore Shackle

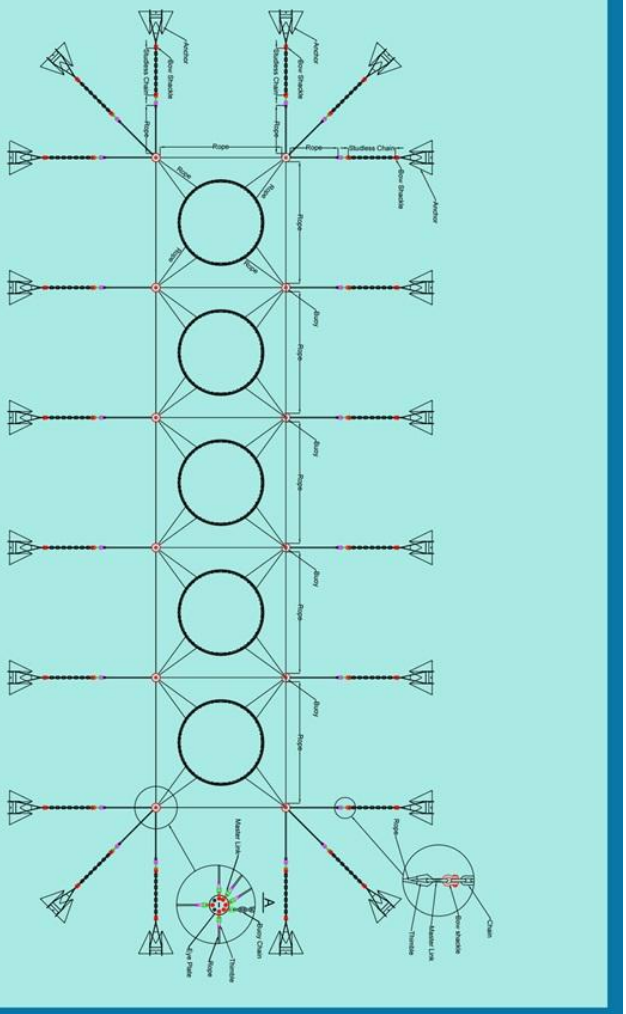


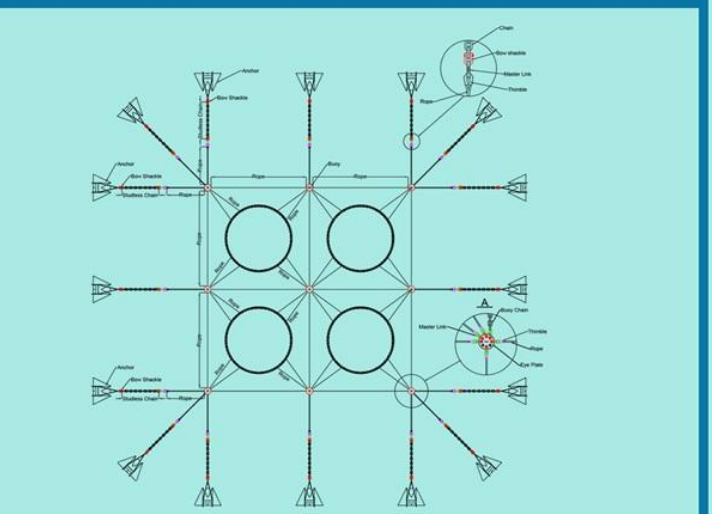
EPS Foamed PE Buoy

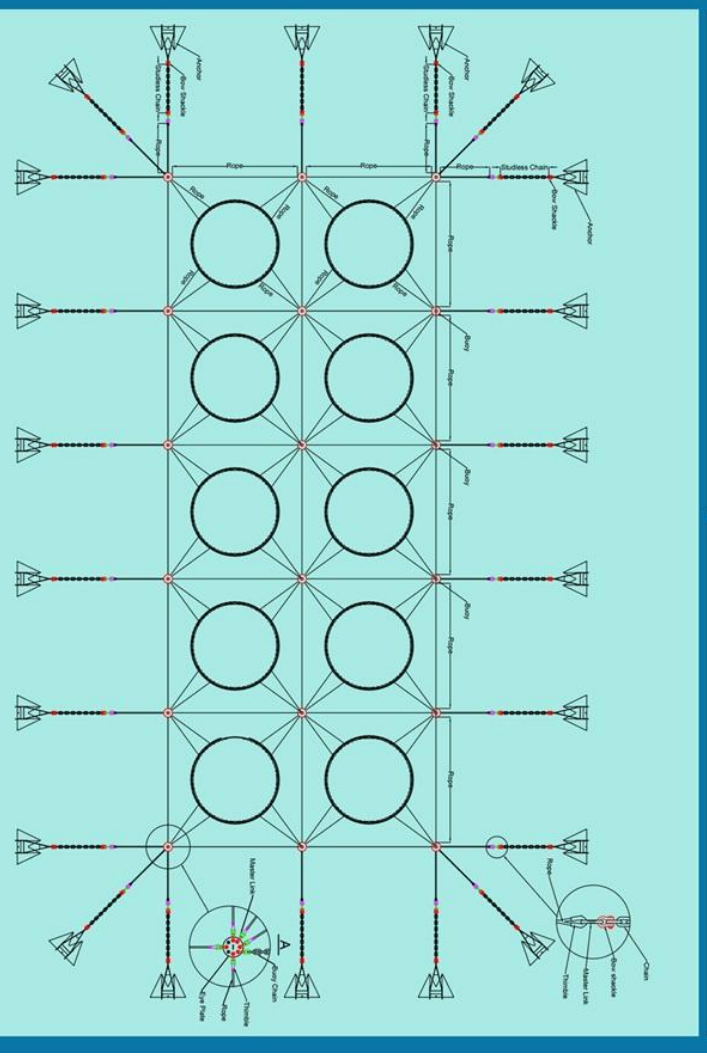


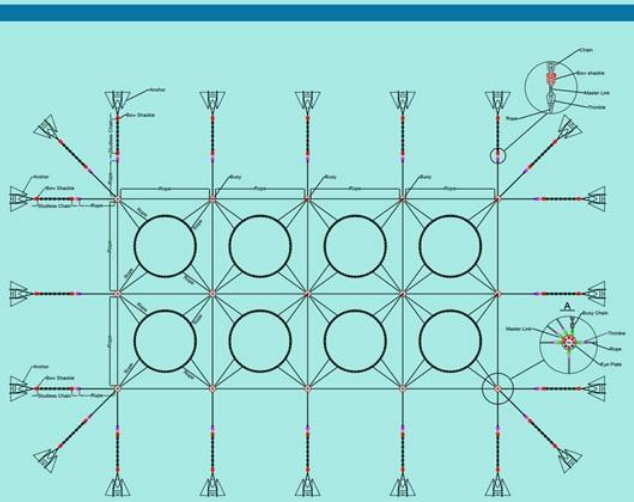
Deepsea Floating Buoy

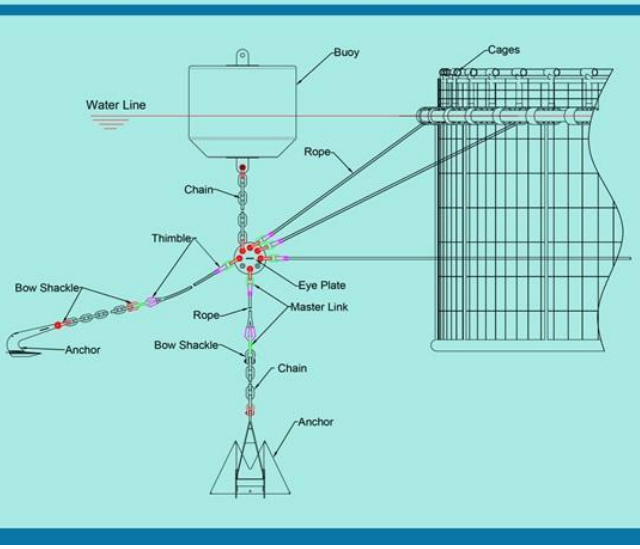

Anchor
Bow Shackle
Studless Chain
Rope
Buoy
Chain
Bow shackle
Master Link
Thimble
Buoy Chain
Eye Plate
A


Anchor
Bow Shackle
Studless Chain
Rope
Buoy
Chain
Bow shackle
Master Link
Thimble
Buoy Chain
Eye Plate
A


Anchor
Bow Shackle
Studless Chain
Rope
Buoy
Chain
Bow shackle
Master Link
Thimble
Buoy Chain
Eye Plate
A


Anchor
Bow Shackle
Studless Chain
Rope
Buoy
Bow Shackle
Anchor
Master Link
Thimble
Buoy Chain
Eye Plate
A


Anchor
Bow Shackle
Studless Chain
Rope
Buoy
Chain
Bow shackle
Master Link
Thimble
Buoy Chain
Eye Plate
A


Buoy
Cages
Water Line
Rope
Chain
Thimble
Eye Plate
Bow Shackle
Master Link
Rope
Anchor
Bow Shackle
Chain
Anchor



TYPICAL PROJECT CASES

DEEP-SEA AQUACULTURE CAGE MOORING SYSTEM

End User: North America Offshore Ocean Fish Farmer
Supply Description: Three Catenary Anchor Legs to a central riser. Each mooring leg consists of 5Ton Drag Embedment Anchor, 70mm Anchor Chain, Lower Mooring Line, Upper Mooring Line, Shackles, Delta Plate and Mooring Ring.

CIRCULAR FISH CAGE BUILT

End User: South America Fish Farmer
Supply Description: 50m x 15m fish cage netpens, consisting of outer and inner floating pipes Φ450mm, Sink Pipe, double collars injection HDPE bracket 450mm, Φ160mm upright pipe, Φ160 x 140mm tees, pedals, netting, cordage, floating buoy, towing lines.





MARINE CYCLONE MOORING SYSTEM

End User: Western Australia Offshore Project Constructor
Supply Description: Generally, the anchors, mooring lines and connectors make up a mooring system. The cyclone moorings involved in the doing project were 15PCS x 5Ton High Holding Power Anchors, 150Tons of 76mm Anchor Chains and Fittings, Mooring Rings.

OFFSHORE(MARINE) FLOATING PV

DEEP-SEA AQUACULTURE CAGE MOORING SYSTEM

End User: South Asia Ocean Floating PV Constructor
Supply Description: Four mooring legs for each panel model, and each mooring leg consists of screw anchor, long link chains, double braided polyester ropes, mult-eyes connection plate, buoys and relative connections shackles, and other connectors.





Seaweed Farming Mooring Rig Deployment

End User: Ocean Seaweed Farmer in Western Europe
Supply Description: Braided polypropylene rope spliced with thimble and steel ring at each end, 3 ply twisted rope, 12 holes connection plate, floating buoys, plough anchors, open link chains, shackles. The whole set of mooring system for kelp farming.

YOUR RELIABLE PARTNER

Deliver solutions and services to the marine and aquaculture industries, from single components to complete marine & aquaculture projects.

WAYSAIL

Welcome to Contact Us

青岛威赛欧海洋科技有限公司
Qingdao Waysail Ocean Technology Co., Ltd

Address: No. 60 Wangsha Road, Chengyang District, Qingdao City, China.
Tel/WhatsApp: +86 15063990849
Email: sales@qdwaysail.com
Website: www.qdwaysail.com