LSS I RAS EQUIPMENT

2025 CATALOGUE

LASWIM


TEES

Contents

About Laswim

Guangdong LASWIM Water Environment Equipment Co., Ltd, established in 1989, is one of the leading enterprise in the aquarium and aquaculture industry in China, and earning recognition as a trusted brand in China.

We are committed to developing and producing life support systems (LSS) and recirculating aquaculture systems (RAS) , and providing sustainable solutions for aquaculture and aquarium. Our 90,000m² R&D and industrial base in the Pearl River Delta Area, along with a team of over 600 skilled employees, reflecting our commitment to quality and innovation.

Our wide range of equipment includes pumps, filtration systems, protein skimmers, sterilization systems, and temperature control systems, etc., are all developed by our technical professionals. The products have won high praise and good markets in the world since their good design and excellent quality.

LASWIM aims to achieve "Make water environment sustainable" and regards all customers and users as close partners. We work closely with our partners to build a smarter ecosystem for water usage, and we invite you to become a part of this trend.

Life support system exhibition area of the company headquarters

PRODUCTION LINE

TYPICAL PROJECT CASES

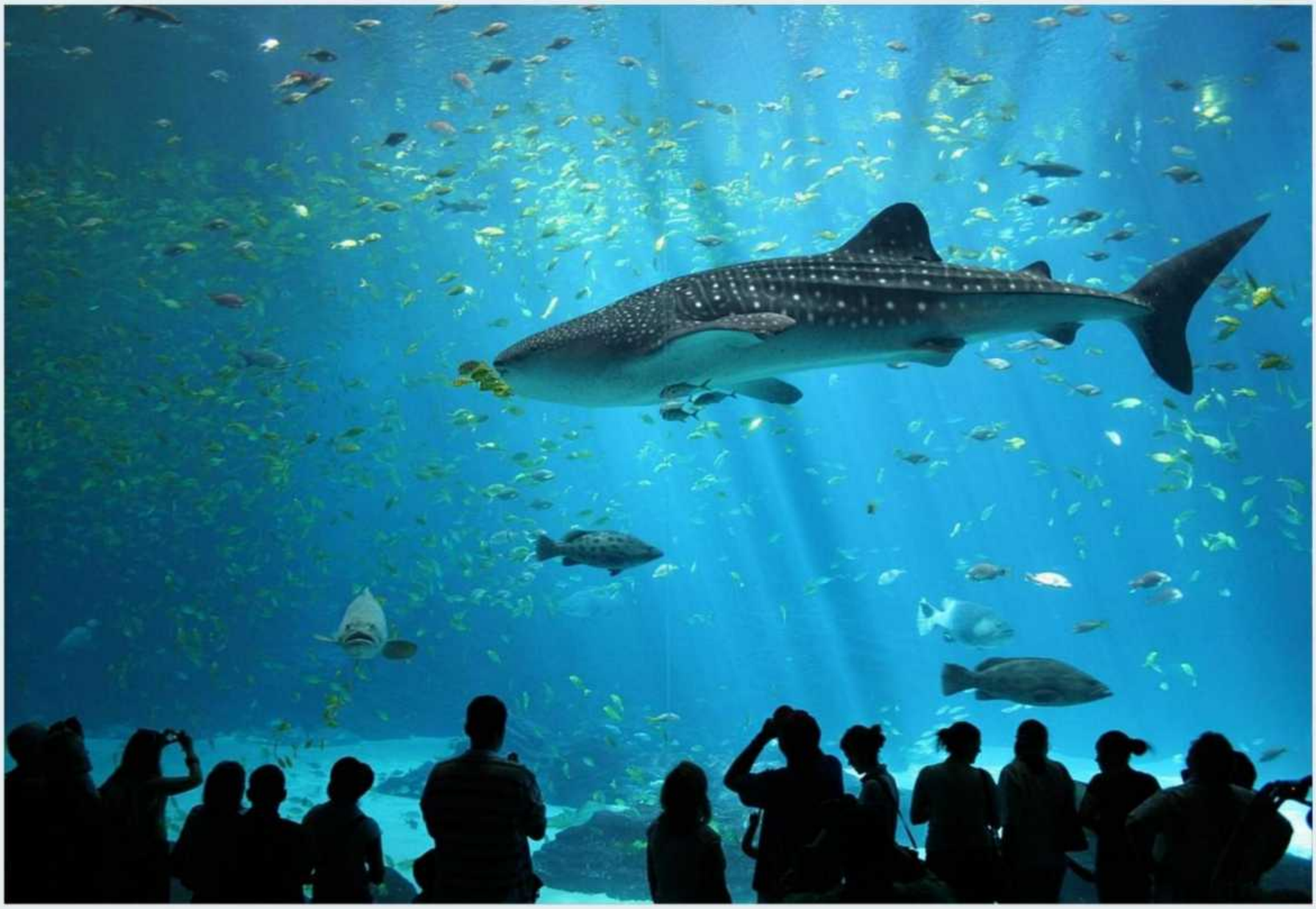
Typical project cases of LSS & RAS

- Nanjing OCT Happy Valley Aquarium
- Xiangyang OCT Fantasy Valley
- Fujian Wuyi Mountain Polar Ocean Park
- Hong Kong Ocean Park
- Marine Ecological Environment Indoor Simulation System of the State Key Laboratory of Xiamen University
- Shanghai Haichang Polar Ocean World
- Changsha Undersea World
- Shandong Rizhao Ocean Park
- Changxing Dragon Dream Marine World in Zhejiang
- Shenzhen Animal Park
- Baotou Ocean World
- Lanzhou Polar Ocean World

AQUARIUM LIFE SUPPORT SYSTEM (LSS)

An aquarium life support system is a combination of equipment used to maintain a healthy, balanced environment in an aquarium where fish can survive and thrive. This system typically includes recirculating pump, filter, heater, air pump/aerator, lighting, disinfecting equipment and other components. All of these components work together to create an optimal habitat for aquatic species within the tank, and keep the water temperature constant, with sufficient oxygen and free of dangerous toxins or bacteria that is right for the marine animals.

As international consumer demand for fish variety increases, life support systems have become more complex, however, when properly designed and maintained, this life support system helps to provide the right water quality, temperature, turnover and clarity for the animals, so that the grow rates are enhanced and animals' health improved!

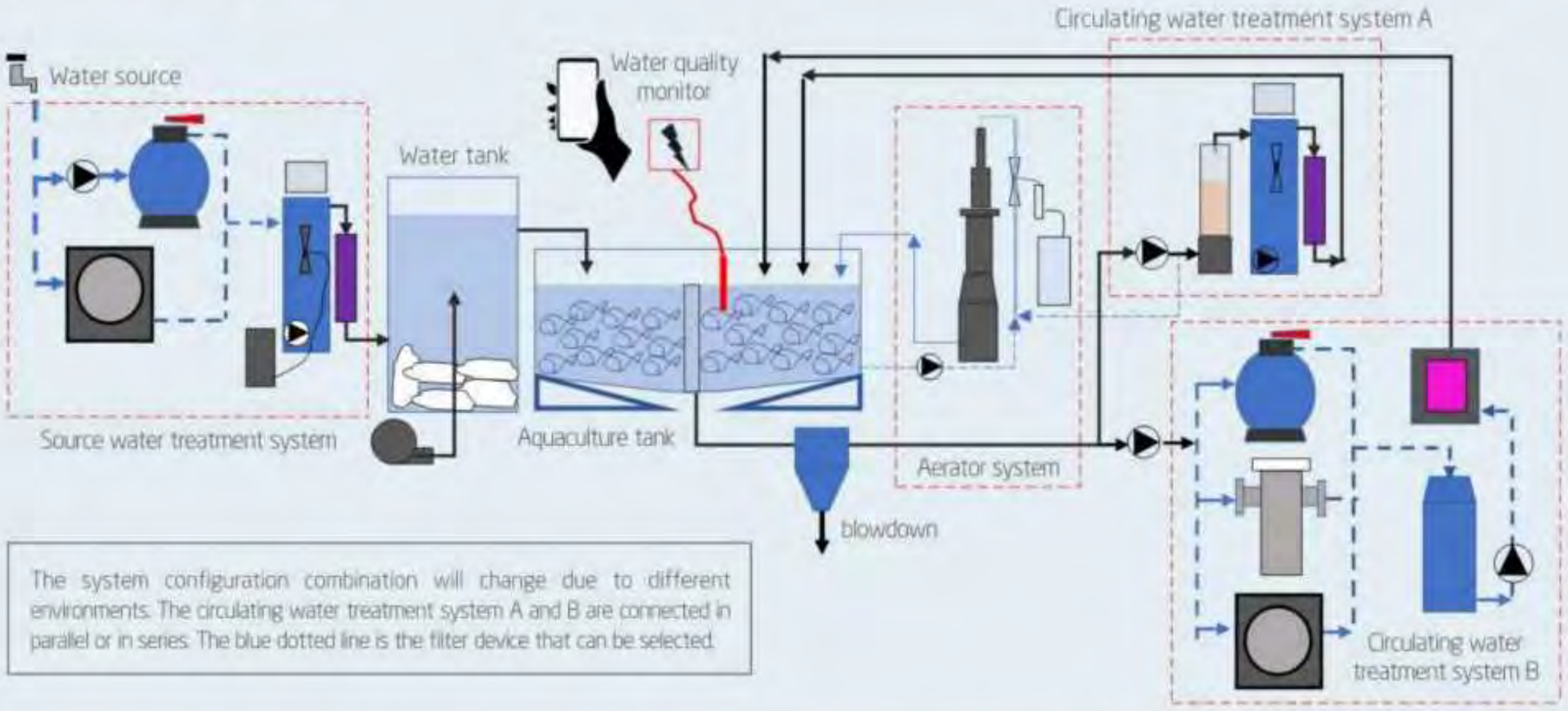


RECIRCULATING AQUACULTURE SYSTEM (RAS)

RAS is an advanced type of land-based fish farming technology which provides the solution to feed tomorrow's population while being responsible for the environmental resources. RAS is an integrated system and it is the direction of the current aquaculture, thereby achieving sustainable and green aquaculture development.

RAS uses a closed-loop water circulation system to maintain a controlled water environment, thus to reduce pollution, increase production, optimize quality and sell off-season. The system can be applied to both fresh water and sea water, and achieve the best temperature and stable year-round regardless of weather or environmental conditions.

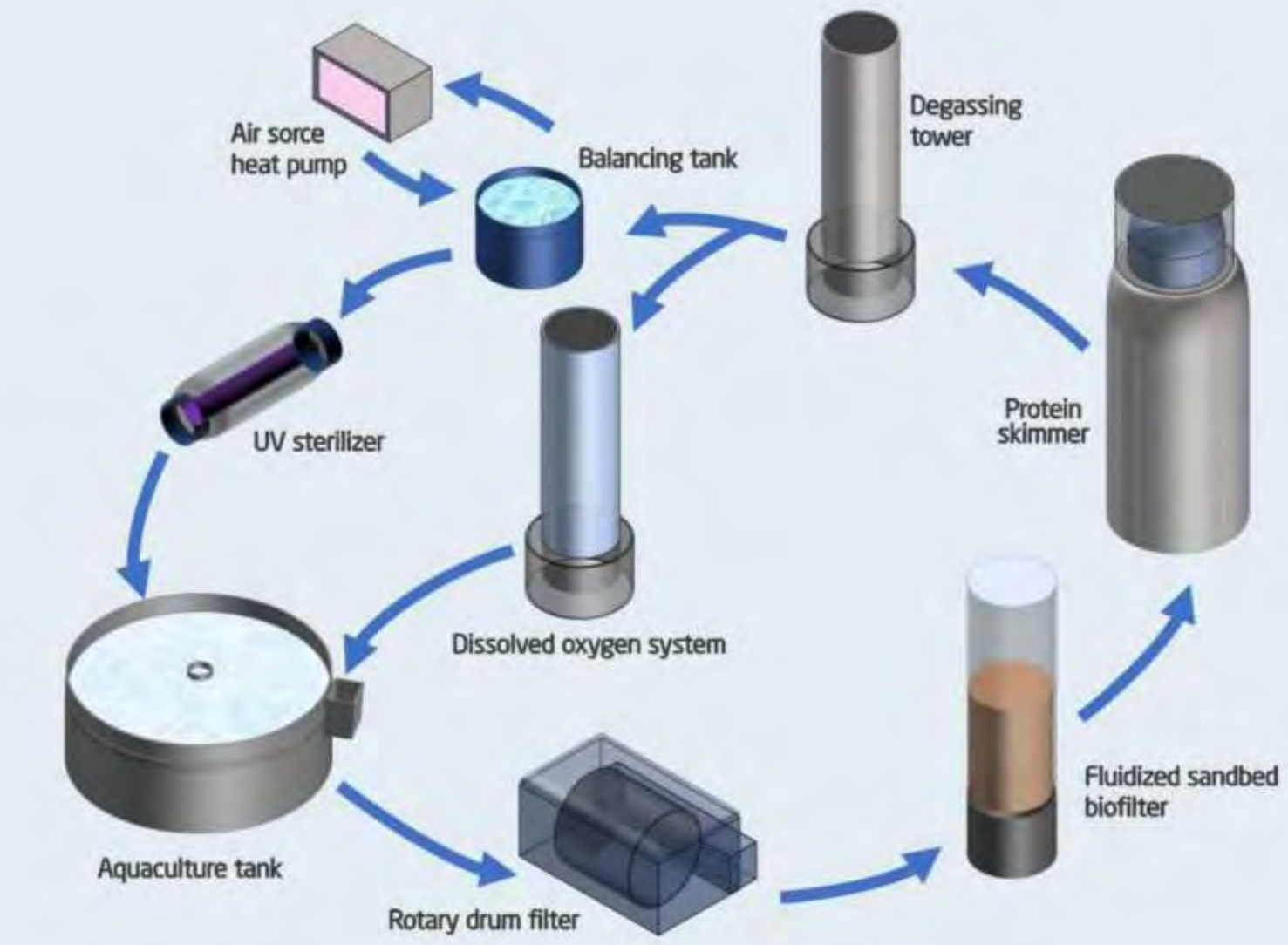
RAS equipment flowchart



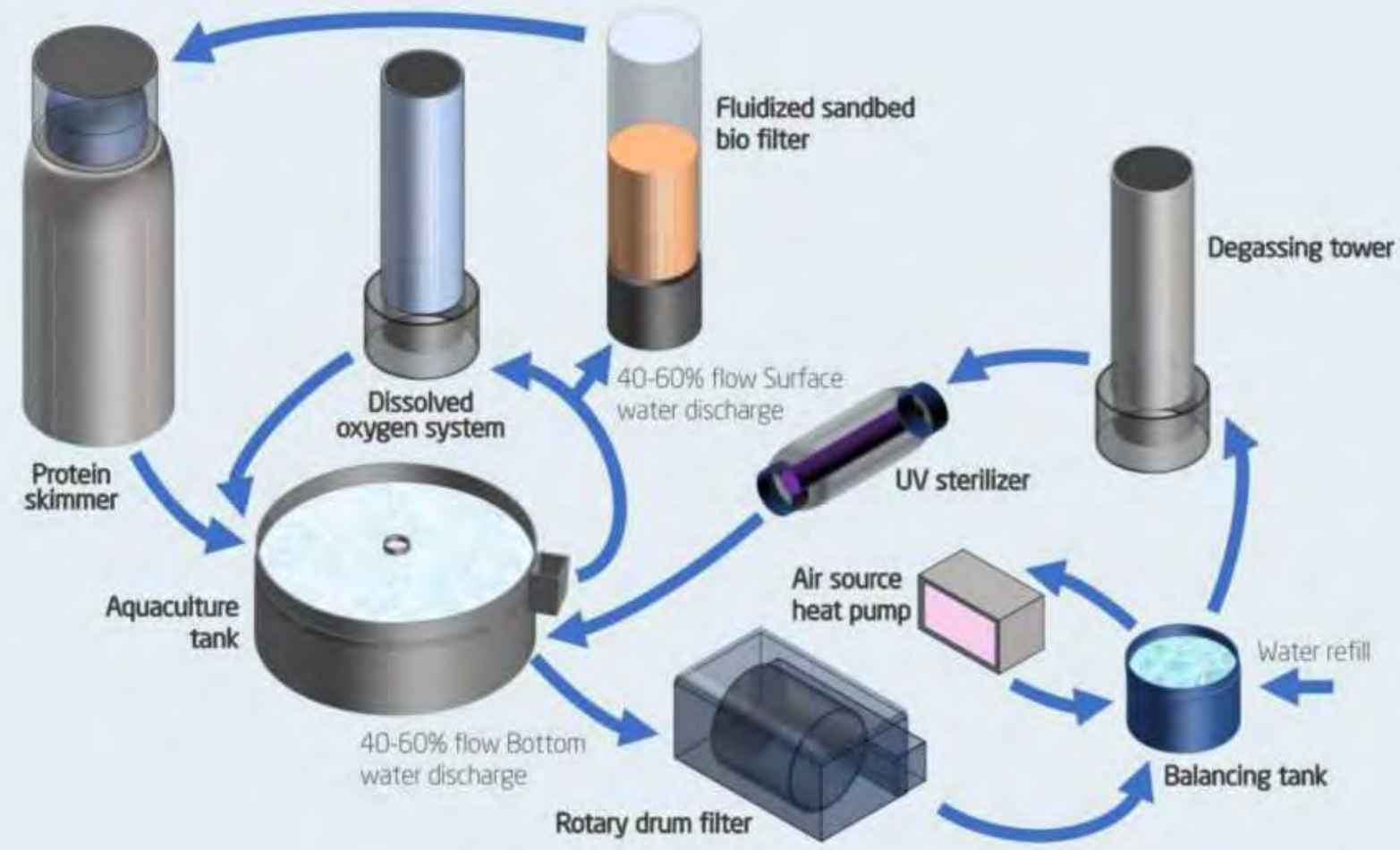
Equipment	Name	Equipment	Name	Equipment	Name	Equipment	Name	Equipment	Name
	Sand filter/ Carbon filter		Fluidized sandbed biofilter		UV sterilizer		Oxygenerator		Basket strainer
	Rotary drum filter		Protein skimmer		Heat pump		Oxygenation Column		Degasser
	Ozone generator				Circulating pump		Air blower		Radial flow separator

Marine water/freshwater recirculating aquaculture system

Marine water recirculating aquaculture system(RAS)
- single system circulation



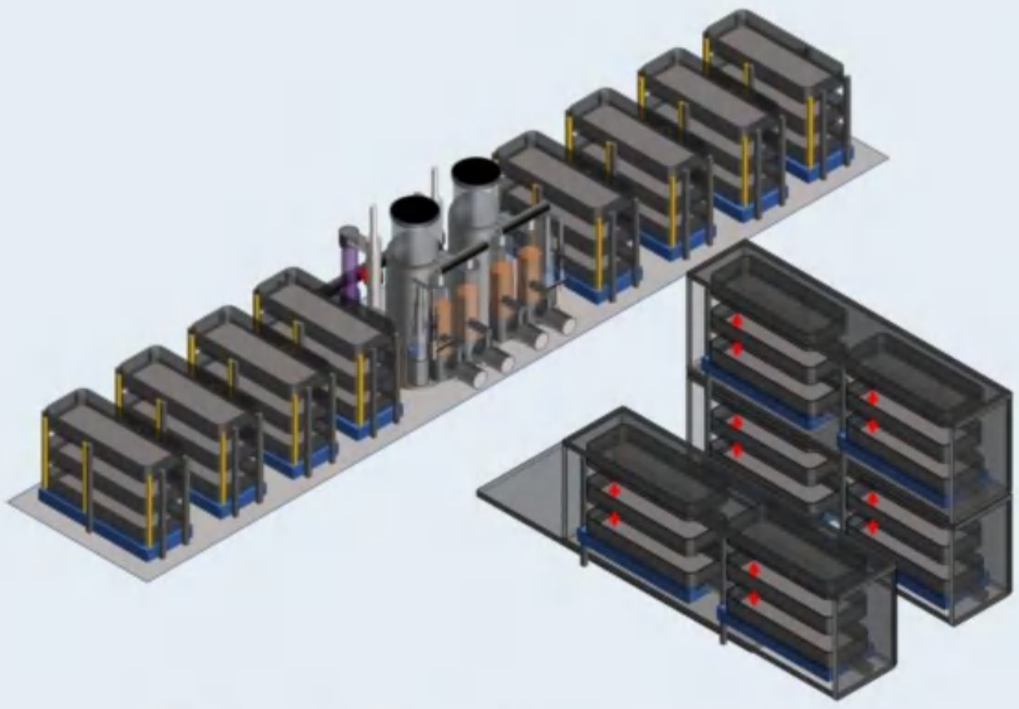
Marine water recirculating aquaculture system(RAS)
- dual system circulation
- physical treatment/biochemical treatment



Vertical Rearing RAS

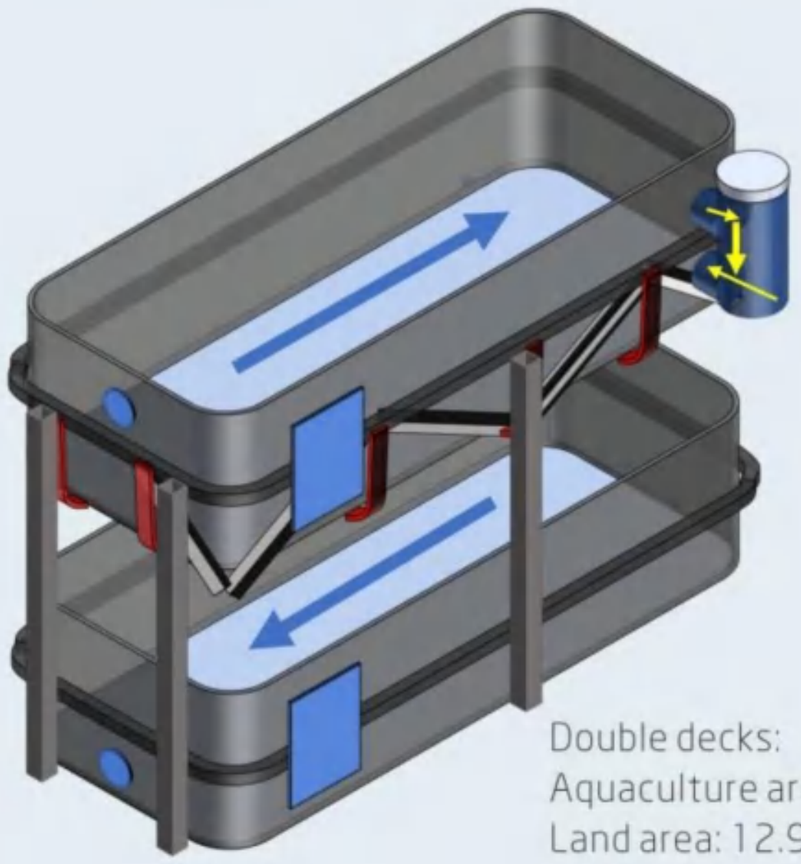
Vertical rearing RAS requires little workshop construction costs and can be moved freely. The setting of the lifting system makes the aquaculture work more convenient. It only needs to be connected to the drainage and power supply to operate.

Vertical rearing RAS cases

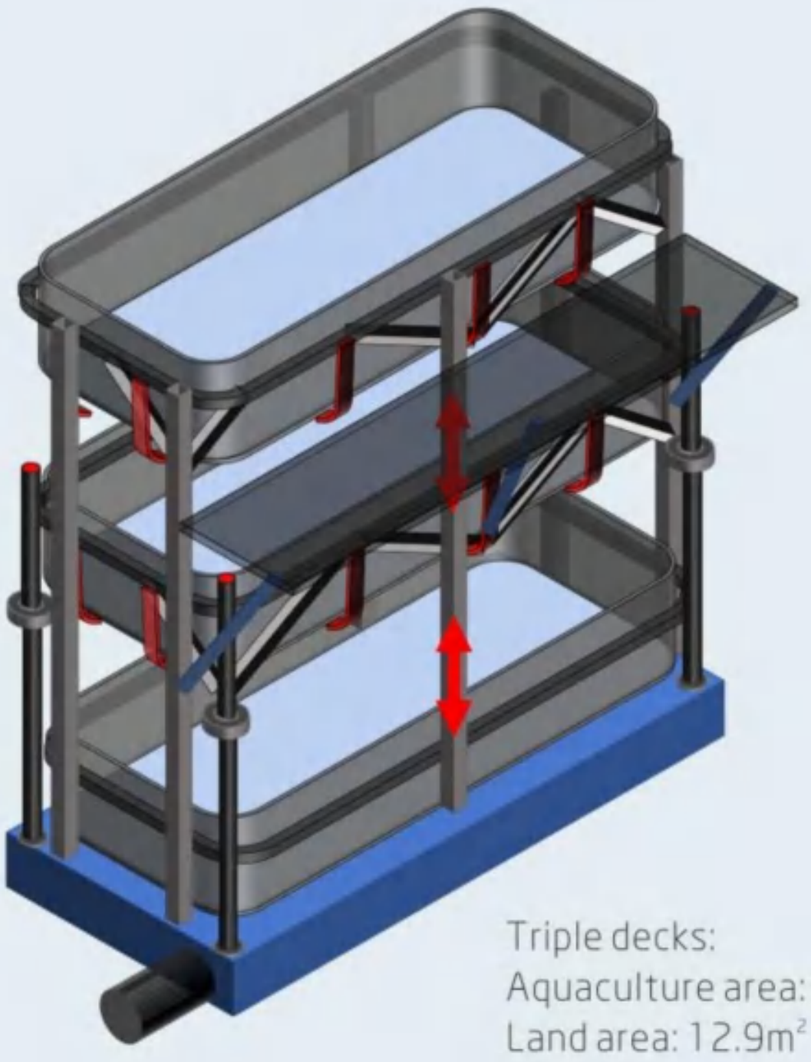


Standard 40 feet container aquaculture cases

Double - Triple decks(lifting) aquaculture system with LLDPE molded rearing tank in various height



Double decks:
Aquaculture area: 23.5m²
Land area: 12.9m²



Triple decks:
Aquaculture area: 36m²
Land area: 12.9m²

LASWIM

Compared with other fish farming systems, RAS has stable and high annual yield.

High yield

Small area, specially designed for land-based aquaculture, only 1/10 of the pond area.

Small footprint

Effectively control pathogens and reduce the risk of aquarium diseases.

Low risk

Balanced food nutrition, optimize quality and improve survival rate.

High quality

Seven major advantages of RAS

Sustainable, easy to manage, high yield

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Intelligent water quality monitoring+Cloud storage+APP alerts, achieving intelligent aquaculture.

Intelligent control

The discharged wastewater can be returned to nature and reuse after being treated up to the standard, which is green and environmentally friendly.

Water saving and environmental protection

Special equipment improves the circulating water quality and effectively treats the ammonia nitrogen, carbon dioxide, and dissolved oxygen ratios in the water.

Purifying water quality

PROTEIN SKIMMER

Protein skimmer (also called foam fractionator) is an important physical device to improve the water quality of aquarium and aquaculture by removing suspended particulates, dissolved organics, fish food remains, proteins and tints from the water. At the same time, protein fractionation lowers bacteria and pathogen concentrations, while saturating the water with oxygen. The normal operation of protein skimmer plays an important role in reducing the load imposed on bio-filtration system.

LLDPE PROTEIN SKIMMER

The body of Laswim LLDPE series protein skimmer is made from UV rated and corrosion-resistant linear low density polyethylene (LLDPE) material, adopts one-piece rotational molding design, which minimize potential leaks and failures at seams and weld points. Equipped with an automatic washdown system and touch screen controller(optional) for easy and convenient programming of rinse cycles for the internal and external cone. The protein skimmer is designed to carry out the protein fractionation process efficiently and help to save the operation and maintenance cost. At the same time, stocking densities and growth rates are all enhanced and animal health improved. It is applicable for use in freshwater and seawater environments.

Freshwater models

Saltwater models

Features:

- High venturi air flow direct injection system.
- LLDPE main body, anti-UV and ozone rated.
- Large top cup for more contact surface for foam rise.
- Cost-saving dual rinse system, seawater for internal rinse and fresh water for top cup side rinse, with adjustable timer control.
- Retracting top cup seawater rinse spray head.
- Special tuned venturi injection pump for power efficiency and match performance with venturi injector.
- Air flow control for adjustment of air and ozone gas.
- Built in anti-backflow system for air and ozone gas piping.
- Floor mount location built-in for ease of installation.
- All clear acrylic top cup and funnel.
- Ozone vent and fresh air make up vent on top cup (optional).
- Pillow base included for injector pump.
- Sand blasted surface finish on main body for wear and cleanliness.
- 5 years warranty for main body, 1 year for other parts.

Application

Seawater venturi pump

Pump material	PPO+PPE+30% FRP
Shaft	316SS+PVC
Mechanical seal	High density silicon carbide surface
O-ring	Viton(high corrosion resistance)
Water proof standard	IP55(ODP)
Pump housing	Aluminum alloy
Power supply	220V/1N/50Hz,380V/3N/50Hz
Motor	2950rpm
Liquid temperature	5-50℃
Ambient temperature	≤50℃
Max. working pressure	0.3MPa

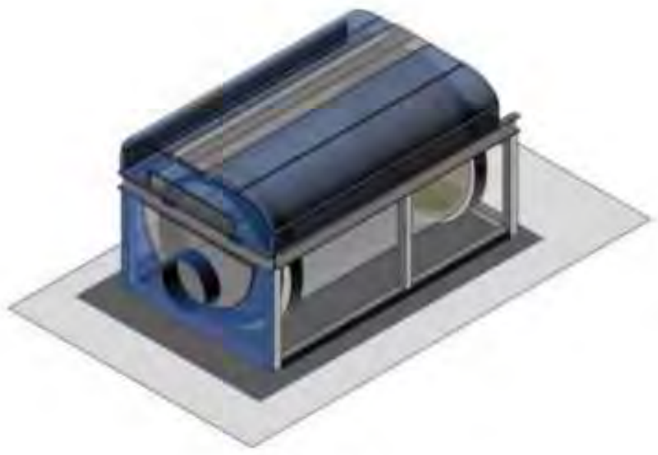
Technical parameters

Model	Flow rate (@120S) m^3/h	Flow rate (@90S) m^3/h	Diameter of reaction chamber (mm)	Total height (mm)	Total volume (L)	Water Inlet Size (DN)	Water Inlet Height (mm)	Water Outlet Size (DN)	Water Outlet Height (mm)	Venturi Quantity (Set)	Venturi Pump Quantity (Set)	Venturi Pump TotaL Horse Power (HP)	Recommended Ozone Injection Amount (g/h)
WL-LLDPE25	7	9	450	2159	226	50(1)	1422	50	1425	1	1	0.35	0.6
WL-LLDPE50	14	18	550	2515	452	50(1)	1593	80	1600	1	1	0.5	1
WL-LLDPE75	24	32	730	2591	797	50(1)	1593	80	1600	1	1	1	2.5
WL-LLDPE150	40	54	950	2565	1350	80(1)	1485	100	1524	1	1	1.2	3.5
WL-LLDPE300	84	112	1350	2794	2800	80(2)	1524	150	1524	1	1	1.5	7
WL-LLDPE600	166	222	1650	3658	5540	100(2)	1988	200	2083	2	2	3	14
WL-LLDPE1000	282	376	2134	3658	9407	150(2)	1930	300	2032	4	4	6	23
WL-LLDPE2000	344	458	2134	4267	11445	200(2)	2540	400	2641	4	4	6	45
WL-LLDPE300A	90	120	1200	3270	----	150(1)	1740	200	1550	½	1	1.5	8
WL-LLDPE600A	166	222	1650	3658	----	150(2)	1988	250	2083	2	2	3	25
WL-LLDPE1000A	282	376	2134	3658	----	200(2)	1930	350	2032	4	4	6	50

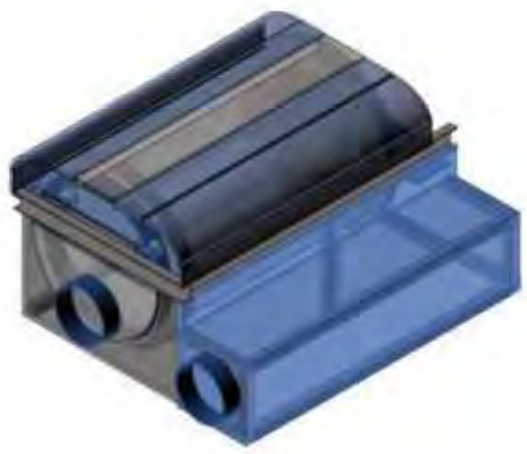
ROTARY DRUM FILTER

RFF/RFM/RFI SERIES ROTARY DRUM FILTER

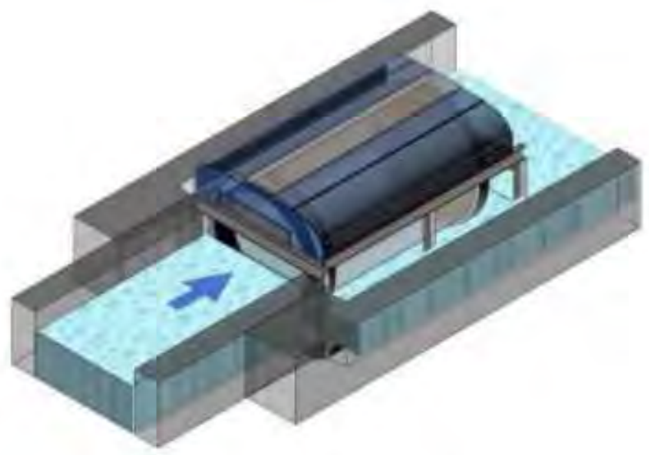
Rotary drum filter is exceptional for recirculating aquaculture systems. Untreated water is gravity-fed into the drum, which is equipped with fine screens around its perimeter. As water passes through these screens, solids are effectively captured, allowing filtered water to exit by gravity. When solids accumulate, reducing filtration efficiency and raising the water level in the drum, backwash process will be activated, flushing trapped debris into a waste tray for easy removal.



Well type (RFF series)



Box type (RFM series)

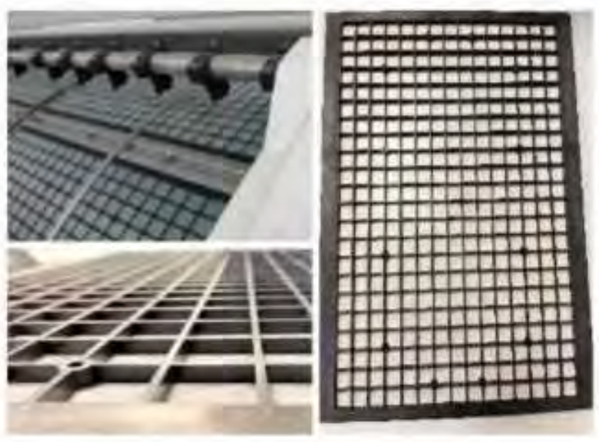


Frame type(RFI series)

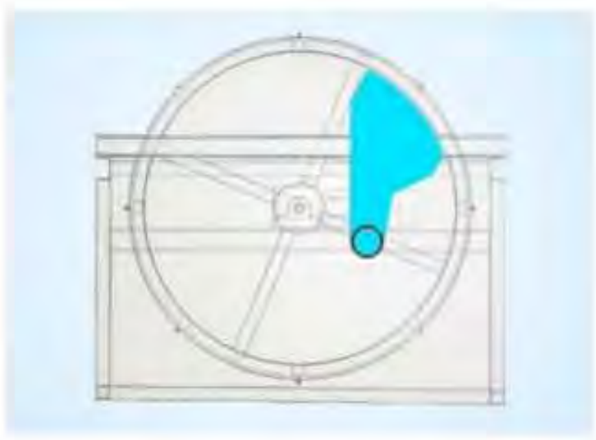
Features:

- State-of-the-art design, low power consumption and minimal maintenance.
- Modular filter panels, easy for installation and replacement.
- High-pressure backwash (0.6MPA) and low flow nozzle(0.8LPM), saves water and has a significant backwash effect.
- Backwashing is activated every 10 minutes under effective filtration(Adjustable subject to TSS value).
- Superior to traditional sand filter, effective filtration up to 20 microns (700 mesh).
- SS 304 or 316 frame and full 6063 aluminum alloy drum structure.

200 mesh (80 microns) to 625 mesh (20 microns) modular filter panels, effectively transfer solids to the backwash position.



High efficiency backwash nozzle and specially designed waste collection tray for complete collection of backwash waste.



Backwash system with multi-stage high-pressure water pump (7bar/7kg pressure).

Product parameters

Model	Drive motor Power (W)	Drive motor Voltage	Backwash pump Power (W)	Backwash pump Voltage	Total power consumption (W)	RFM (Box type)	RFF/RFI (Well type/frame type)	Water inlet (RFF/RFI/RFM)	Water outlet (RFM)
60120	1500	380-3	2200	380-3	185.0-370	-	3920×1800×1950	300-450	400-500
60096	750	380-3	2200	380-3	147.5-295	-	3300×1800×1950	300-450	400-500
60072	750	380-3	1500	380-3	112.5-225	-	2690×1800×1950	300-450	400-500
48072	400	380-3	1500	380-3	95.0-190	2620×1950×1500	2550×1450×1650	150-300	200-400
48048	400	380-3	1500	380-3	95.0-190	2000×1950×1500	1935×1450×1650	150-300	200-400
32054	200	220-1/380-3	1100	380-3	65.0-130	2120×1400×1080	2000×1080×1150	50-100	50-100
32036	200	220-1/380-3	1100	380-3	65.0-130	1660×1400×1080	1540×1080×1150	50-100	50-100
32018	200	220-1/380-3	750	380-3	47.5-95	1200×1400×1080	1080×1080×1150	50-100	50-100

Remarks: Usage frequency 5%-10%

32 Series

Model		RFF/RFM/RFI 32018			RFF/RFM/RFI 32036			RFF/RFM/RFI 32054		
Screen size		20μm 700mesh	40μm 300mesh	80μm 180mesh	20μm 700mesh	40μm 300mesh	80μm 180mesh	20μm 700mesh	40μm 300mesh	80μm 180mesh
Water quality TSS	Type	Flow rate m^3/h			Flow rate m^3/h			Flow rate m^3/h		
TSS 10mg/L	Clean water source	54	94	134	108	188	268	162.5	282.5	402.3
TSS 15mg/L	Fish culture	49.5	87.5	125	99	175	251	148.6	262.9	377
TSS 25mg/L	Circulatory system - Low temperature	24.5	65.5	106	49	130	211	73.8	195.9	317.7
	Circulatory system - Temperature	17	45.5	74	34	91	148	50.7	136.8	222.9
TSS 40mg/L	Municipal drainage	10.5	12.5	15	21	25	30	30.9	37.95	45.2
Screen opening ratio		15%	25%	39%	15%	25%	39%	15%	25%	39%
Screen panel		4 (1 x 4)			8 (2 x 4)			12 (3 x 4)		

48 Series

Model		RFF/RFM/RFI 48048			RFF/RFM/RFI 48072		
Screen size		20μm 700mesh	40μm 300mesh	80μm 180mesh	20μm 700mesh	40μm 300mesh	80μm 180mesh
Water quality TSS	Type	Flow rate m^3/h			Flow rate m^3/h		
TSS 10mg/L	Clean water source	216	376	536	325	564	804
TSS 15mg/L	Fish culture	198	350	502	297	525	753
TSS 25mg/L	Circulatory system - Low temperature	98	261	423	147	391	634
	Circulatory system - Temperature	67.5	182	297	101	273	445
TSS 40mg/L	Municipal drainage	41	50	60	61	75	90
Screen opening ratio		15%	25%	39%	15%	25%	39%
Screen panel		16 (8 x 2)			24 (8 x 3)		

60 Series

Model		RFF/RFM/RFI 60072			RFF/RFM/RFI 60096			RFF/RFM/RFI 60120		
Screen size		20μm 700mesh	40μm 300mesh	80μm 180mesh	20μm 700mesh	40μm 300mesh	80μm 180mesh	20μm 700mesh	40μm 300mesh	80μm 180mesh
Water quality TSS	Type	Flow rate m^3/h			Flow rate m^3/h			Flow rate m^3/h		
TSS 10mg/L	Clean water source	312	706	1006	415.7	941.6	1340.9	677.3	1176.8	1676.1
TSS 15mg/L	Fish culture	281	657	943	374.8	876.1	1256.8	618.9	1095.2	1571.1
TSS 25mg/L	Circulatory system - Low temperature	88	490	794	117.9	652.9	1059.3	307.9	816.1	1324.1
	Circulatory system - Temperature	72	342	558	95.4	456.1	743.4	210.9	570.2	929.3
TSS 40mg/L	Municipal drainage	58	95	113	77.9	126.8	150.7	128.9	158.4	188.2
Screen opening ratio		15%	25%	39%	15%	25%	39%	15%	25%	39%
Screen panel		30 (10 x 3)			40 (10 x 4)			50 (10 x 5)		

MECHANICAL FILTRATION

ADG SERIES SAND FILTER

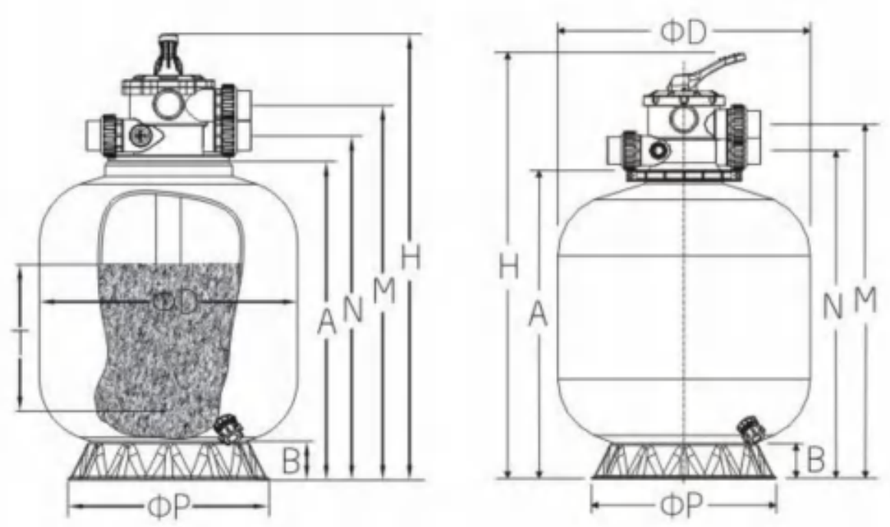
Top mount vertical sand filters are built to be tougher, longer lasting and better performing. Constructed of polyester resin and non-corrosive extra-thick fiberglass filament winding, all internal components and connections are injection moded PVC. UV-resistance surface allows working under sunshine. Easy-to-use six position valve makes you select any of the valve/filter operation in a proper way. Side mount sand filter is also available.

WL-ADG350~WL-ADG700

- FILTER (Normal filtration and vacuuming).
- BACKWASH (Clean filter by reversing the flow).
- RINSE (Used after backwash to flush dirt from valve).
- WASTE (By-passes filter, used for vacuuming to waste or lowering water level).
- RECIRCULATE (By-passes filter for circulating water to pool).
- CLOSE.

WL-ADG800~WL-ADG1400

ΦD(mm)	800	900	1000	1100	1200	1400
H(mm)	1130	1270	1340	1460	1540	1750
A(mm)	830	970	1040	1160	1240	1450
B(mm)	150	150	150	180	180	180
M(mm)	972	1112	1182	1302	1392	1592
N(mm)	892	1032	1102	1222	1312	1512
ΦP(mm)	790	790	790	1010	1010	1010
T(mm)	490	500	580	600	750	900



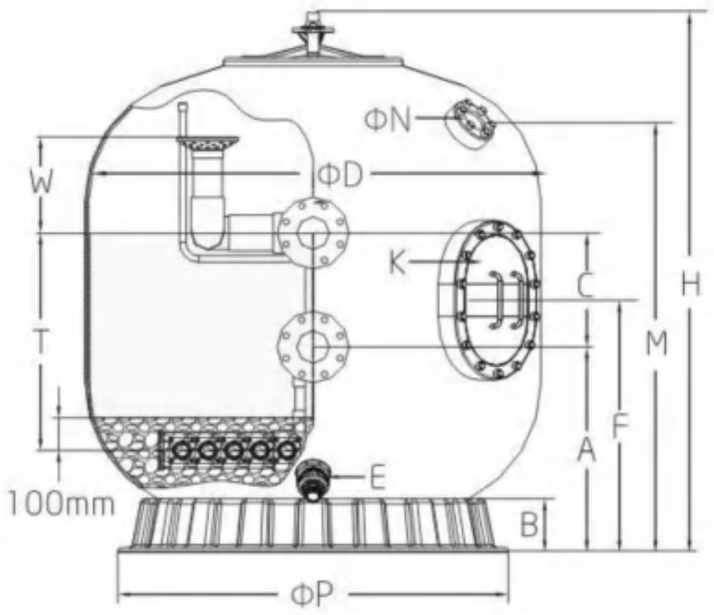
Model	Pipe Size (inches)	Filter Area (m^2)	Design Flow (m^3/h)	0.5-0.8mm Sand Weight (kg)	Tank Volume (m^3)	Valve Volume (m^3)	Tank Weight (kg)	Valve Weight (kg)
WL-ADG350	1.5	0.1	4.5	25	0.06	0.02	4.5	3
WL-ADG400	1.5	0.13	6.5	34	0.09	0.02	5.5	3
WL-ADG450	1.5	0.16	8.0	50	0.15	0.02	7.0	3
WL-ADG500	1.5	0.23	11.5	80	0.20	0.02	9.8	3
WL-ADG650	1.5	0.32	16.0	160	0.32	0.02	13.0	3
WL-ADG700	1.5	0.40	20.0	220	0.42	0.02	18.5	3
WL-ADG800	2.0	0.50	25.0	370	0.68	0.03	41.0	5
WL-ADG900	2.0	0.64	30.0	447	0.95	0.03	48.0	5
WL-ADG1000	2.0	0.79	35.0	700	1.29	0.03	58.0	5
WL-ADG1200	2.0	1.13	50.0	960	2.26	0.03	68.0	5
WL-ADG1400	2.0	1.53	68.0	1300	3.50	0.03	110.0	5

STANDARD: MAX. WORKING PRESSURE: 36psi/2.5kg/cm² MAX. OPERATING WATER TEMPERATURE≤50°C MAX. TESTING PRESSURE: 60psi

CCG SERIES COMMERCIAL SAND FILTER

This series commercial sand filters are built to be tougher, longer lasting and better performance. Constructed of polyester resin and non-corrosive fiberglass filament winding. All internal components and connections are injection moded PVC. UV-resistant surface allows working under sunshine. Spherical body with uniform thickness, can bear the water pressure evenly. Manhole is optional for easy maintenance. Applicable for aquarium and aquaculture.

Optional accessories: sight glass, manhole, air purge, nozzle plate



with lateral

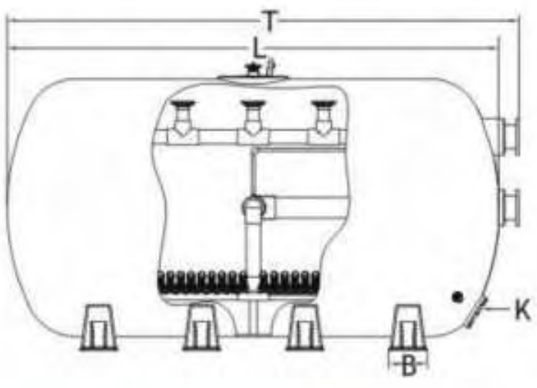
D (mm)	1200	1400	1600	1800	2000	2300	2500
H (mm)	1400	1670	1750	1950	2140	2350	2450
A (mm)	560	650	680	730	800	940	960
B (mm)	165	165	215	215	240	240	240
C (mm)	340	350	450	550	550	600	600
E (mm)	60	60	60	60	60	60	60
F (mm)	740	800	875	910	1050	1070	1100
K (mm)	180x180	400x300	400x300	400x300	400x300	450x300	450x350
M (mm)	1150	1250	1450	1650	1700	1800	1900
N (mm)	80	80	80	80	80	80	80
P (mm)	1010	1215	1450	1610	1800	2010	2010
T (mm)	600	700	800	850	900	1000	1050
W (mm)	300	300	320	320	350	400	400

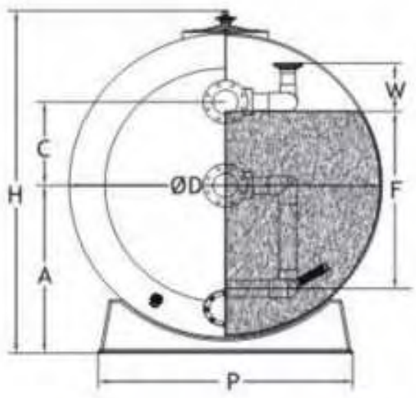
Model	Pipe Size		Filter Area (m^2)	Design Flow (m^3/h)	0.4-0.8mm Sand Weight (kg)	1-2mm Gravel Weight (kg)	Tank Diameter (mm)	Tank Height (mm)
	inches	mm						
WL-CCG1200	3	90	1.13	45	750	300	1200	1400
WL-CCG1400	4	110	1.54	61	1200	500	1400	1670
WL-CCG1600	4	110	2.01	80	1850	750	1600	1750
WL-CCG1800	6	160	2.54	125	2500	1050	1800	1950
WL-CCG2000	6	160	3.14	152	3300	1150	2000	2140
WL-CCG2200	6	160	3.80	166	4150	1470	2200	2350
WL-CCG2300	8	200	4.15	196	4900	1600	2300	2350
WL-CCG2500	8	200	4.90	282	6000	2200	2500	2450
WL-CCG3000	8	200	7.07		8600	3300	3000	2650

STANDARD: MAXIMUM WORKING PRESSURE: 36psi/2.5kg/cm^2 MAXIMUM TEMPERATURE: 50°C
OPTIONAL: MAXIMUM WORKING PRESSURE: 58psi/4.0kg/cm^2 MAXIMUM TEMPERATURE: 50°C

HF SERIES HORIZONTAL SAND FILTER

This series commercial sand filters are built to be tougher, longer lasting and better performance. Constructed of polyester resin and non-corrosive fiberglass filament winding. All internal components and connections are injection moded PVC. UV-resistant surface allows working under sunshine. Spherical body with uniform thickness, can bear the water pressure evenly. Manhole is optional for easy maintenance. Applicable for aquarium and aquaculture.

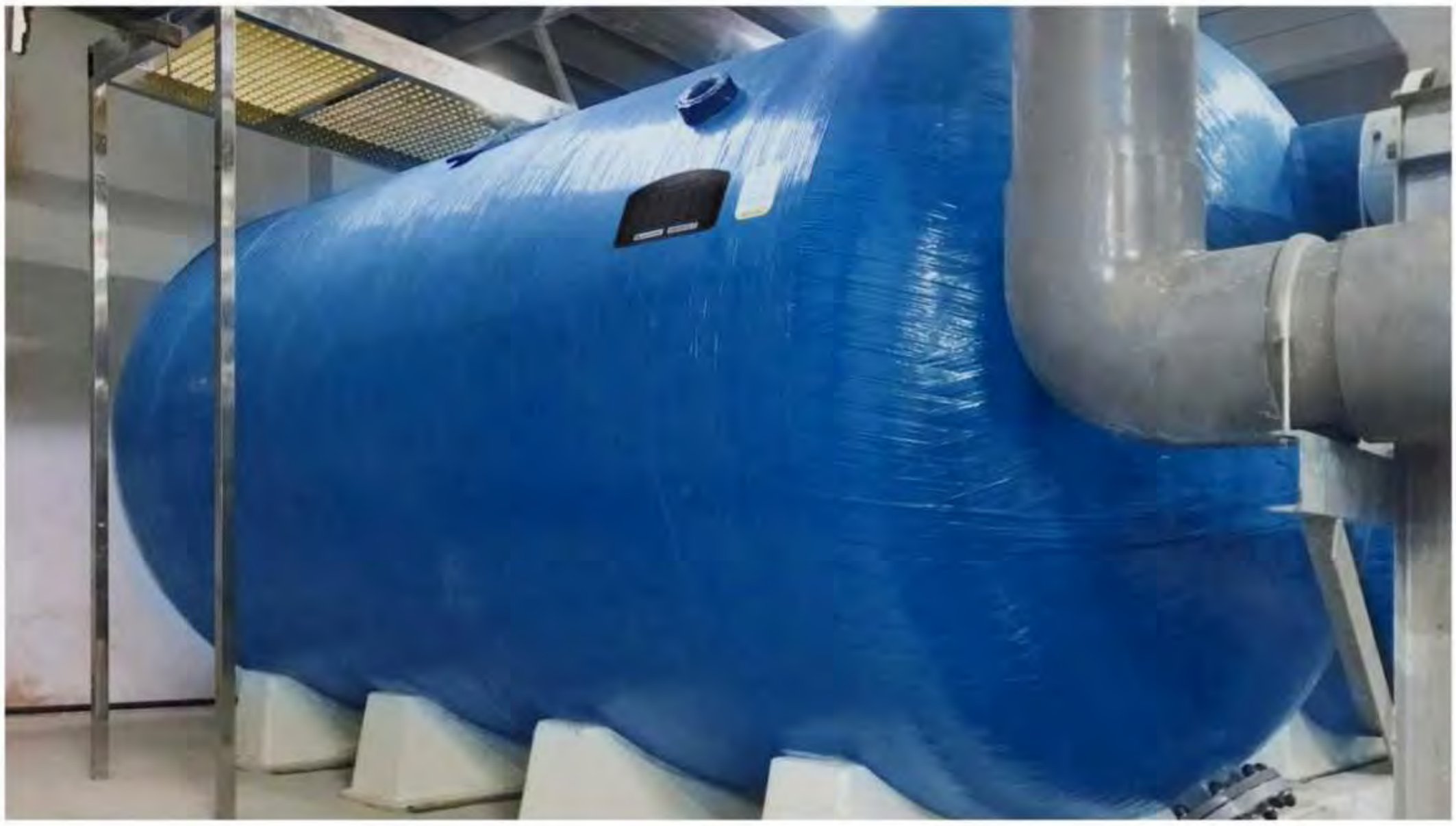





Manhole


Collector arms


Nozzle plate(optional)



Φ1200mm

Model	Diameter (mm)	Height (mm)	Flow velocity ($m^3/h/m^2$)	Pipe size		Design flow (m^3)	Filter area (m^2)	0.5-0.8mm Sand weight(kg)	1-2mm Gravel weight(kg)
				mm	inches				
WL-HF121900	1200	1390	20	90	3"	39	1.96	1100	430
			30	110	4"	59			
			40	160	6"	79			
WL-HF122300	1200	1390	20	110	4"	48	2.42	1430	550
			30	160	6"	73			
			40	160	6"	97			
WL-HF122500	1200	1390	20	110	4"	53	2.65	1750	700
			30	160	6"	79			
			40	160	6"	106			
WL-HF122700	1200	1390	20	110	4"	57	2.87	2080	830
			30	160	6"	86			
			40	160	6"	115			
WL-HF123000	1200	1390	20	110	4"	64	3.21	2330	925
			30	160	6"	96			
			40	160	6"	129			

Φ1400mm

Model	Diameter (mm)	Height (mm)	Flow velocity ($m^3/h/m^2$)	Pipe size		Design flow (m^3)	Filter area (m^2)	0.5-0.8mm Sand weight(kg)	1-2mm Gravel weight(kg)
				mm	inches				
WL-HF141900	1400	1600	20	110	4"	45	2.23	2000	580
			30	110	4"	67			
			40	160	6"	89			
WL-HF142500	1400	1600	20	110	4"	60	3.02	2750	800
			30	160	6"	91			
			40	160	6"	121			
WL-HF143000	1400	1600	20	160	6"	73	3.67	3375	1000
			30	160	6"	110			
			40	160	6"	147			

Φ1600mm

Model	Diameter (mm)	Height (mm)	Flow velocity ($m^3/h/m^2$)	Pipe size		Design flow (m^3)	Filter area (m^2)	0.5-0.8mm Sand weight(kg)	1-2mm Gravel weight(kg)
				mm	inches				
WL-HF161900	1600	1830	20	110	4"	49	2.47	2800	600
			30	160	6"	74			
			40	160	6"	99			
WL-HF162500	1600	1830	20	110	4"	67	3.36	3800	850
			30	160	6"	101			
			40	160	6"	134			
WL-HF163000	1600	1830	20	160	6"	82	4.10	4700	1050
			30	160	6"	123			
			40	200	8"	164			

Φ1800mm

Model	Diameter (mm)	Height (mm)	Flow velocity ($m^3/h/m^2$)	Pipe size		Design flow (m^3)	Filter area (m^2)	0.5-0.8mm Sand weight(kg)	1-2mm Gravel weight(kg)
				mm	inches				
WL-HF182500	1800	2050	20	160	6"	75	3.74	4850	980
			30	160	6"	112			
			40	160	6"	150			
WL-HF183000	1800	2050	20	160	6"	92	4.58	5930	1230
			30	160	6"	137			
			40	200	8"	183			
WL-HF183500	1800	2050	20	160	6"	108	5.41	7000	1480
			30	200	8"	162			
			40	200	8"	216			
WL-HF184000	1800	2050	20	160	6"	125	6.25	8080	1700
			30	200	8"	187			
			40	250	10"	250			

Φ2000mm

Model	Diameter (mm)	Height (mm)	Flow velocity ($m^3/h/m^2$)	Pipe size		Design flow (m^3)	Filter area (m^2)	0.5-0.8mm Sand weight(kg)	1-2mm Gravel weight(kg)
				mm	inches				
WL-HF202500	2000	2220	20	160	6"	87	4.34	6000	1050
			30	160	6"	130			
			40	200	8"	174			
WL-HF203000	2000	2220	20	160	6"	106	5.30	7450	1300
			30	160	6"	159			
			40	200	8"	212			
WL-HF203500	2000	2220	20	160	6"	125	6.25	8900	1550
			30	200	8"	187			
			40	200	8"	250			
WL-HF204000	2000	2220	20	160	6"	144	7.21	10350	1800
			30	200	8"	216			
			40	250	10"	288			
WL-HF204500	2000	2220	20	200	8"	163	8.16	11800	2080
			30	200	8"	245			
			40	250	10"	326			

WF SERIES BAG FILTER

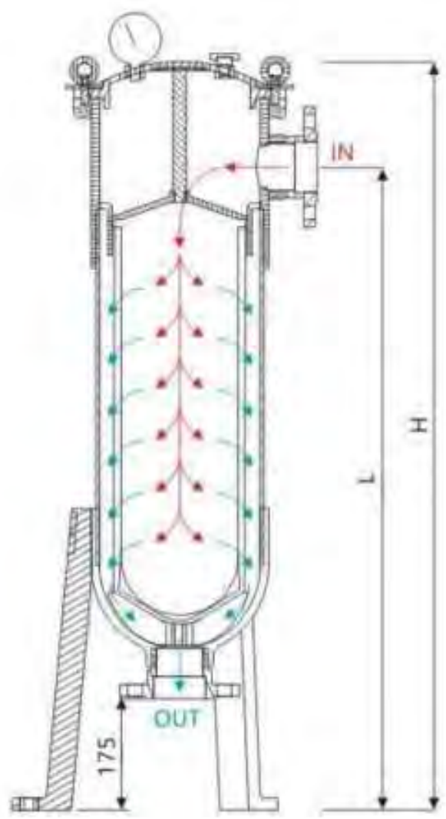
Full plastic bag filter is a new filtration system, with high precision, big flow, easy installation and maintenance. It can be divided into three parts: housing, filter basket and filter bag.

Features:

- UVPC plastic filter housing with strong corrosion resistance.
- Unique seal design makes the filter more safety and reliable.
- The special filtration technology can effectively prevent the bag plunged into the support basket, no inner leak.
- Compact structure, beautiful appearance and small footprint.
- High filter precision, the filtration range is 0.5 to 200um.
- Large processing flow rate, large capacity and high efficiency.

Working principle:

The water to be filtered flows in from the inlet, and then flows from the inside to outside of the filter bag, finally flows into the specified container through the outlet at the bottom of the filter. The filtered particle impurities are trapped in the filter bag, to make sure that there is no contamination to the filtered water when replacing the filter bag and the unit can be re-used after replacing the filter bag.



Water flow diagram

Technical parameters:

Model	Size	Design flow (m^3/h)	Bag size	inlet/outlet size	Height of water inlet	Max. working pressure
HXP-BF-1-1-A	ϕ225-H805	15	ϕ7"(178mm)-H17"(419mm)	DN50/2"/63mm	650	0.4MPA
HXP-BF-1-2-A	ϕ225-H1190	25	ϕ7"(178mm)-H32"(813mm)	DN50/2"/63mm	1035	0.4MPA
HXP-BF-1-1-B	ϕ225-H820	15	ϕ7"(178mm)-H17"(419mm)	DN50/2"/63mm	665	0.7MPA
HXP-BF-1-2-B	ϕ225-H1200	25	ϕ7"(178mm)-H32"(813mm)	DN50/2"/63mm	1045	0.7MPA
HXP-BF-1-1-B1	ϕ225-H820	15	ϕ7"(178mm)-H17"(419mm)	DN50/2"/63mm	665	0.7MPA
HXP-BF-1-2-B1	ϕ225-H1200	25	ϕ7"(178mm)-H32"(813mm)	DN50/2"/63mm	1045	0.7MPA

Note:
1.One filter bag is installed inside the housing.
2.Max. temperature: 45°C, vent hole and pressure gauge mounting hole thread size: G1/4", for metric pressure gauges, need to order adapters separately.

OZONE REACTOR

Reaction formula: CT⩾1.6, ozone demand: Po3=qc X 03. Ozone reactor size: V=qc/60Xt. ©- the amount of ozone added into the water; t-time requirement for ozone and water contact reaction; V-the volume of ozone reactor; qc-the circulating water amount)

Max. working pressure: 250kpa/36psi/2.5bar or 400kpa/58psi/4.0bar.

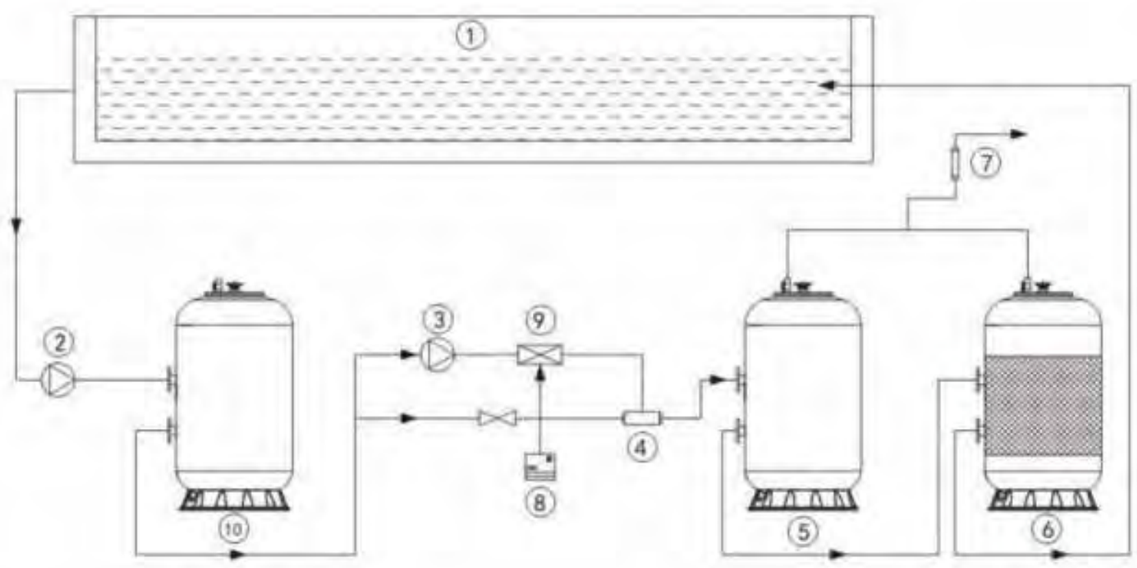
Max. testing pressure: 400kpa/58psi/4.0bar or 600kpa/86psi/6.0bar.

Max. temperature: 50℃(122F)

Features:

- The surface is constructed of UV-resistant and non-corrosive fiberglass filament winding.
- With non-corrosive internal layer.
- The full reaction of water and ozone can greatly improve the sterilization effect.

Ozone reactor working procedure



① Swimming pool/aquarium
② Circulating pump
③ Booster pump
④ In-line mixer
⑤ Reaction tank
⑥ Adsorption filter
⑦ Exhaust gas decomposition device
⑧ Ozone dosing device
⑨ Ozone injector
⑩ Sand filter

Technical parameters:

Model	Diameter (mm)	Water inlet/outlet size (mm)	Flow rate (m^3/h)	Volume (m^3)
WL-OZ1532	800	63	18	0.63
WL-OZ1540	1000	63	33	1.12
WL-OZ1548	1200	90	45	1.53
WL-OZ2032	800	63	26	0.88
WL-OZ2040	1000	75	40	1.51
WL-OZ2048	1200	90	63	2.1

BIOLOGICAL FILTRATION

Biological filter is the core equipment of aquaculture. In the case that the total circulating water volume is fixed, but the total amount of nitrogen input is constantly increasing, under the action of organisms, these nitrogenous substances would be converted into ammonia or nitrite dissolved in water. The continuous accumulation of these substances will cause the organisms poisoning. Therefore, these nitrogenous substances must be converted into non -toxic substances in aquaculture. Bio-filtration is the decomposition of ammonia nitrogen and other substances in water by the cultivation of biochemical bacteria through the filtration media, but it requires pretreatment, sand filter, protein skimmer can be used as the pretreatment equipment.

FLUIDIZED SANDBED BIOFILTER

Fluidized Sandbed Biofilter is a high efficiency filter that will replace the traditional bio-trough system with a much smaller footprint. It uses anaerobic denitrification technology to treat ammonia nitrogen in water. Calcified coral sand is used as its filter media, with a contact area of up to 20000-24000m2/m3 (depending on the size of the selected coral sand), and 1kg coral sand can handle 16g of ammonia (NH4) per 24 hours on average. Compared with traditional biochemical denitrification equipment, it not only occupies a smaller area and consumes less power, but also greatly improves the efficiency of denitrification.

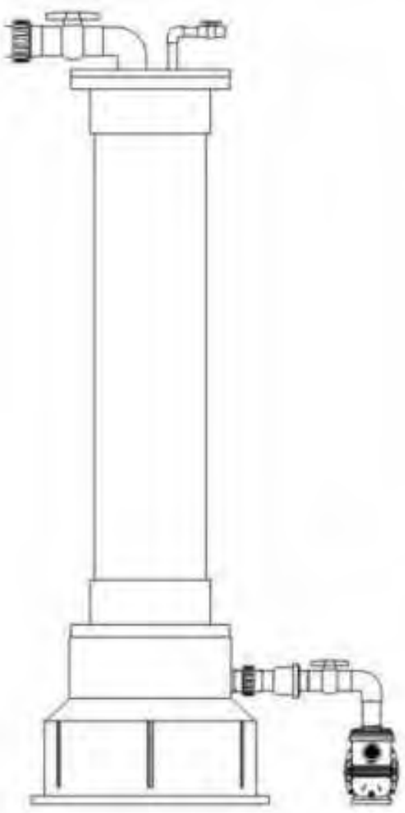
It is applicable for freshwater or seawater aquaculture.

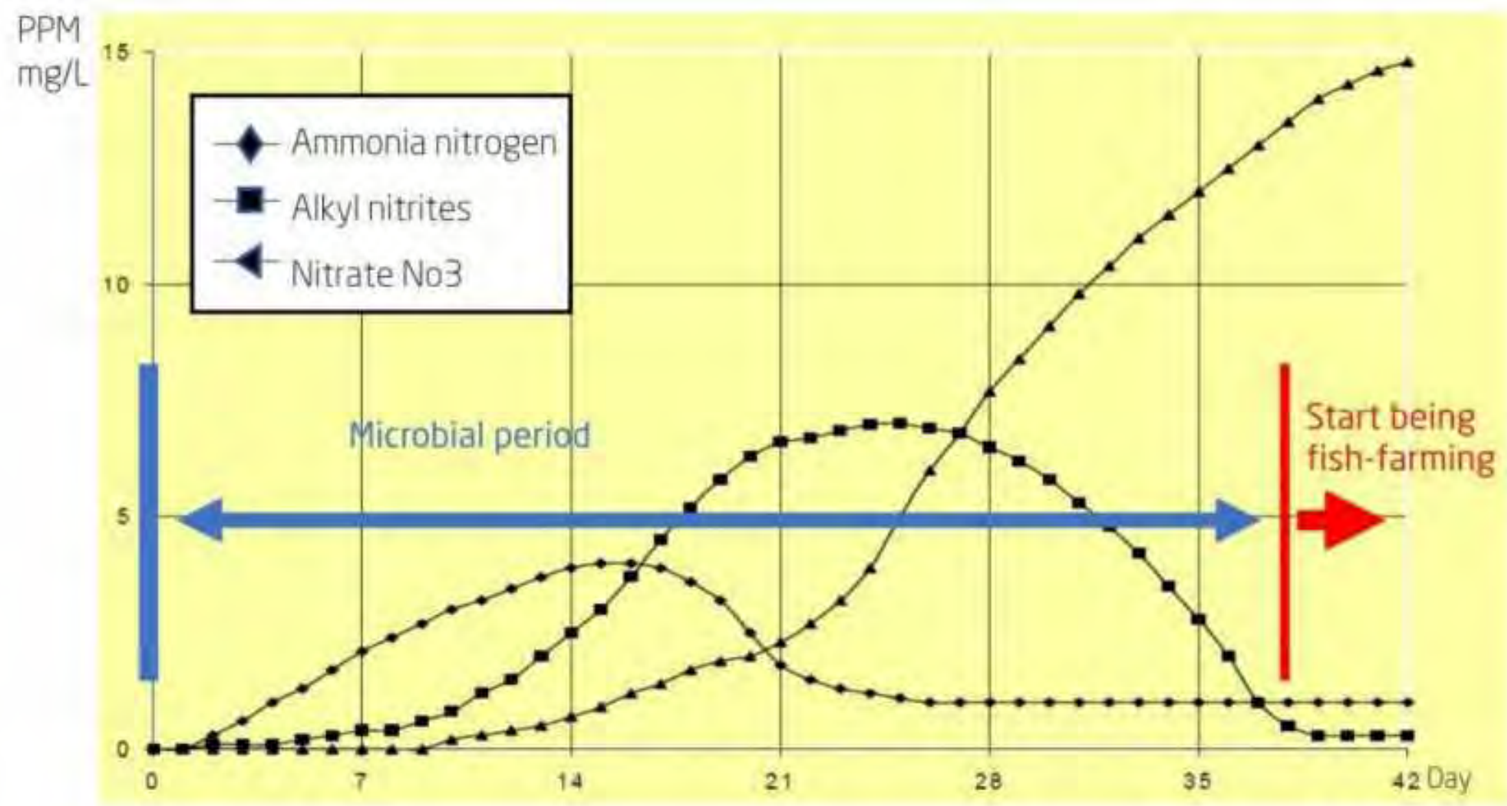
Features:

- High efficiency
- Small footprint
- Low maintenance costs

Material:

LDPE and UPVC, standard UPVC pipeline connection.





Product parameters

Model	Diameter (mm)	Water inlet (mm)	Water outlet (mm)	Total height (mm)	Max. flow rate		Calcified coral sand (Φ1-2mm)		Ammonia-nitrogen conversion rate (kg / day)	Handling amount of food fed (kg / day)
					LPM	m³/h	kg	m³		
WL-BSF75	250	63	63	2300	267	16	57	0.044	0.924-1.37	33-49
WL-BSF150	400	63	90	2800	434	26	178	0.14	2.85-4.27	102-152

BEAD FILTER

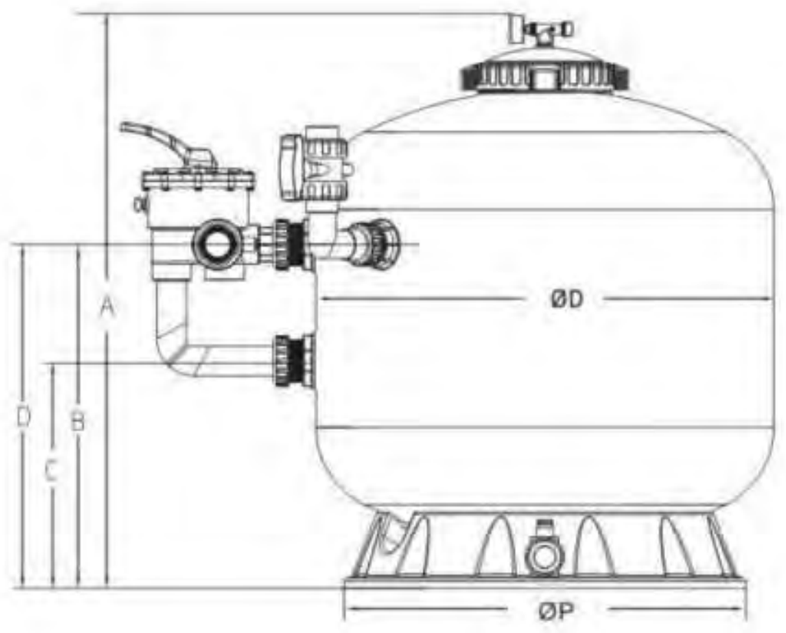
WL-BFG bead filter is an innovative pressurized filtration system, filling with filter media of food grade polyethylene granules or beads. It provides both mechanical filtration and biological filtration. The media floats and therefore provide a means of mechanical filtration. The form and size of the media provides enormous surface on which bacteria and suspended solid can attached to it, in this way, biological filtration is realized. It has been widely used for koi pond and aquarium.

BIOLOGICAL FILTRATION

Features:

- Fiberglass reinforced filters are super strong and anti-corrosion.
- Simple to assemble and set up.
- Equipped with easy-to-use 6-way multiport valve.
- Easy cleaning and convenient maintenance.
- Sight glass for inspection of filtered water.
- Air blower upgrades available.

ΦD (mm)	450	500	630	700	800	900	1200
A (mm)	660	730	790	885	1020	1110	1350
B (mm)	385	405	435	520	605	650	820
C(mm)	260	280	310	300	385	430	600
E(mm)	385	405	435	480	600	650	820
ΦD (mm)	390	390	565	565	790	790	1010



Product parameters

Model	Tank diameter (mm)	Tanks height (mm)	Flow rate (m^3/h)	Pond size (m^3)	Fish load (kg)	Advised blower (watt)	Weight of filter media (kg)
WL-BFG450	450	660	8	6	20	400	18
WL-BFG500	500	730	11	10	35	400	30
WL-BFG650	650	745	16	30	78	400	50
WL-BFG700	700	830	19	34	94	900	75
WL-BFG800	800	905	25	52	124	900	100
WL-BFG900	900	1005	30	73	172	1000	125
WL-BFG1200	1200	1325	42	148	310	2x1000	325

SKID MOUNTED FILTRATION SYSTEM

Laswim skid mounted filtration system is built using quality components. This system combines biological filter media, UV sterilizer, and a pump to create a complete filtration system. The system is designed to deliver unmatched filtration and UV sterilization, providing trouble free operation for your water feature. It can quickly and efficiently remove suspended solids, organic matter, blue-green algae, fishy odor and mosquito larvae in the water, improve water visibility, and keep the water clean and healthy all year round.

Features:

- 304 stainless steel casing, strong and durable.
- Flexible and easy installation.
- Convenient maintenance, only needs cleaning every 2-3 months.
- Adopts durable UV sterilizer with two lamps to kill bacteria and algae.
- Provides physical, biological and chemical filtration, effectively remove organic pollution from water.
- Low water change costs and operation costs.
- Stable operation and long service life, the filter media can be recycled for long time.
- The specially designed multi-chamber filtering compartment can place different types of filter media for precision filtration.

Product parameters

Model	Pump parameters Flow rate, power, head, connecting size (mm)	Applicable water volume (m^3)	UV power (W)	Water inlet /outlet size (kg)	Product size (mm)
WL-OSA-08K	8(OSA-8500) 96W/4.1m/40mm	12	120	1×40/1×90	700×600×600
WL-OSA-12K	13(OSA-13000) 130W/5.0m/40mm	20	160	1×40/1×90	750×650×650
WL-OSA-20K	15(OSA-G15000) 285W/6.6m/50mm	30	240	1×40/1×90	850×700×720
WL-OSA-30K	20(OSA-G20000) 415W/7.6m/50mm	40	300	1×50/1×110	1000×750×720
WL-OSA-45K	25(OSA-G25000) 515W/8.0m/50mm	60	360	1×50/1×110	1100×850×750
WL-OSA-60K	30(OSA-G30000) 650W/8.0m/50mm	80	420	1×50/1×110	1200×900×850
WL-OSA-80K	2×20(OSA-G20000) 415W/7.6m/50mm	90	480	2×50/2×110	1300×1000×1000
WL-OSA-120K	2×25(OSA-G25000) 515W/8.0m/50mm	120	600	2×50/2×110	1500×1000×1000
WL-OSA-150K	4×20(OSA-G20000) 415W/7.6m/50mm	150	960	2×50/2×110	1800×1100×1000
WL-OSA-180K	4×25(OSA-G25000) 515W/8.0m/50mm	200	1200	2×50/2×110	2000×1200×1000

CIRCULATION PUMP

The function of the pump is to make the water flow in the artificial water environment. After the physical filtration, protein separation, biochemical filtration, disinfection and heating, the water will become suitable for the normal life of aquatic organisms, and then return to the aquaculture pool, so that the organisms can live healthily.

HLVSP VARIABLE SPEED PUMP

LASWIM creatively combines the most advanced technology (Permanent magnet brushless DC motor) with the professionally designed hydraulic structure of the pump to create a more usable, quieter, more intelligent, more efficient and less expensive variable speed pumps.

Material:

- Pump housing: PP+35%GF
- Filter basket: PP
- Shaft: SS316
- Mechanical Seal: stationary face-SIC, rotating face-Graphite, seal bellows-NBR, Spring- 316L
- Impeller: PPO+30% GF
- Diffuser: PPO+30% GF

Simple and fast operation

- Comes with 4 pre-set most commonly used working scenarios.
- One-button tap, directly to the desired function.
- Stepless variable speed technology, 1000-2900 rpm can be adjusted freely to meet various professional needs.

Intelligent

- All operations can be completed via mobile APP.
- Support centralized management of multiple devices, you can check the status of the water pump in real time, customize functions and the protection against accidental power failure.
- Support OTA upgrade, support firmware update.

Quiet

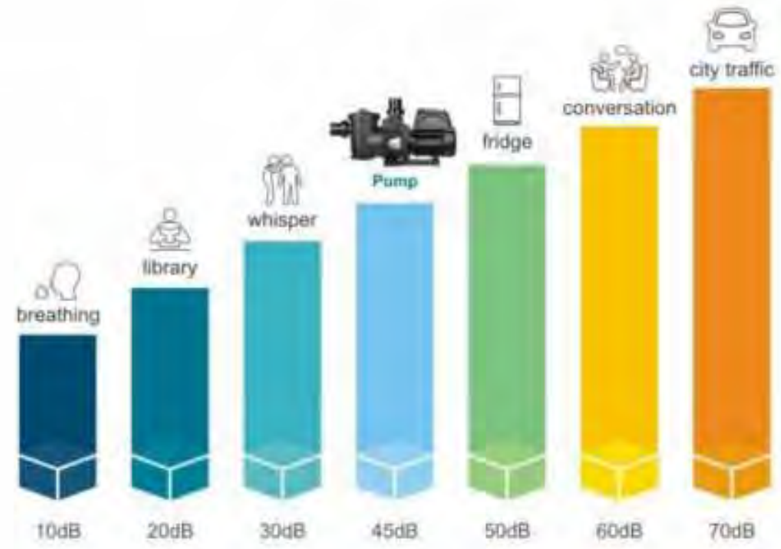
- HLVSP pumps reduce operating noise, featuring an upgraded motor drive that delivers quieter high-speed operation.
- Sound level 45dB in 1 meter at the speed of 1400rpm.

DOWNLOAD THE APP "TUYA" FROM GOOGLE PLAY OR APP STORE.

NEW

ANDROID APP ON Google play

Available on the App Store



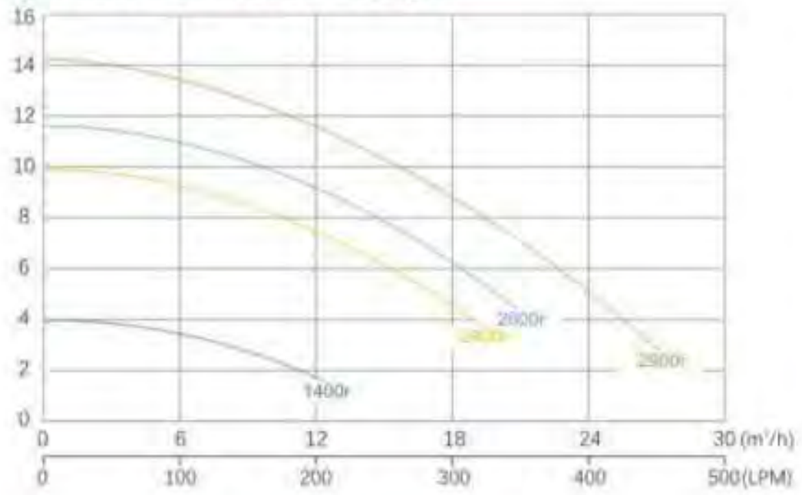
Energy saving

- HLVSP pumps reduce the energy by up to 90%, saving up to 12,614kWh(2hp pump runs in 365days).

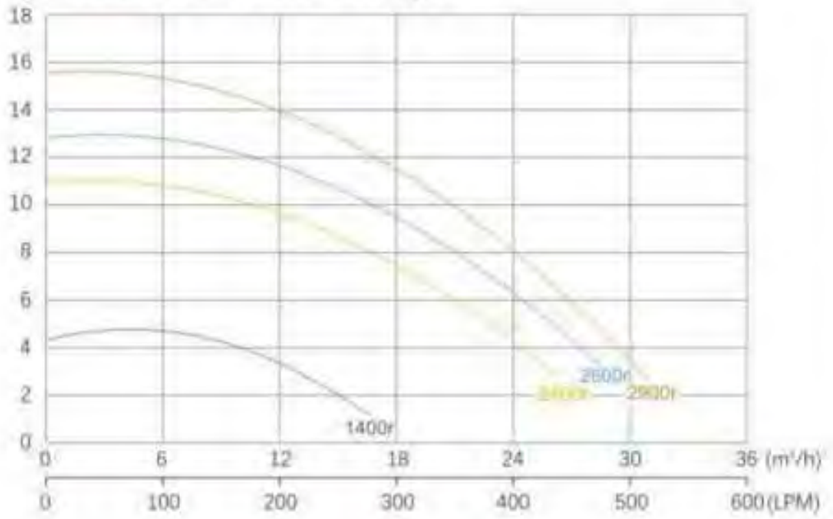
High energy efficiency

- High efficiency motor IE4.
- Ambient temperature: up to 45°C (113°F).
- Insulation Class: F.
- IP55 waterproof standard.
- Liquid temperature:5~50°C (41~122°F).
- Maximum working pressure: 3.5bar

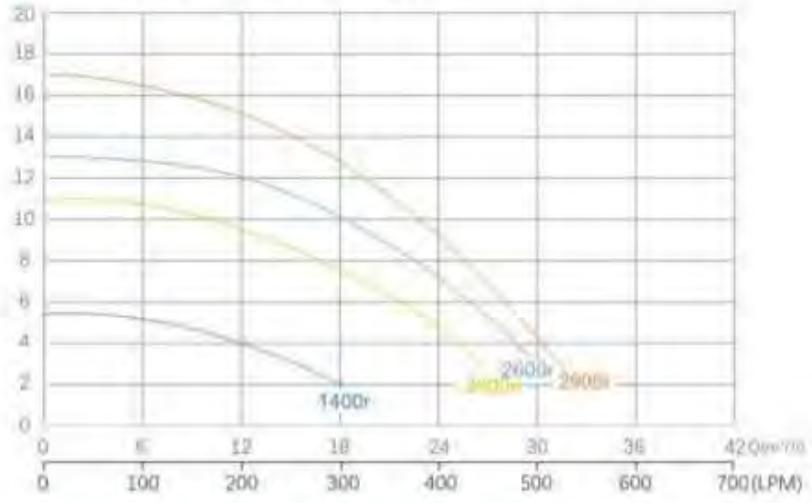
QH.Curve of HLVSP100QW



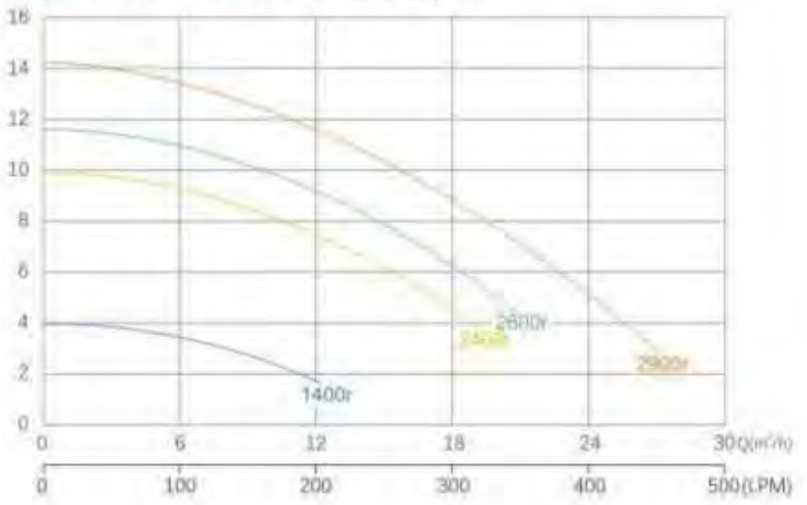
QH.Curve of HLVSP150QW



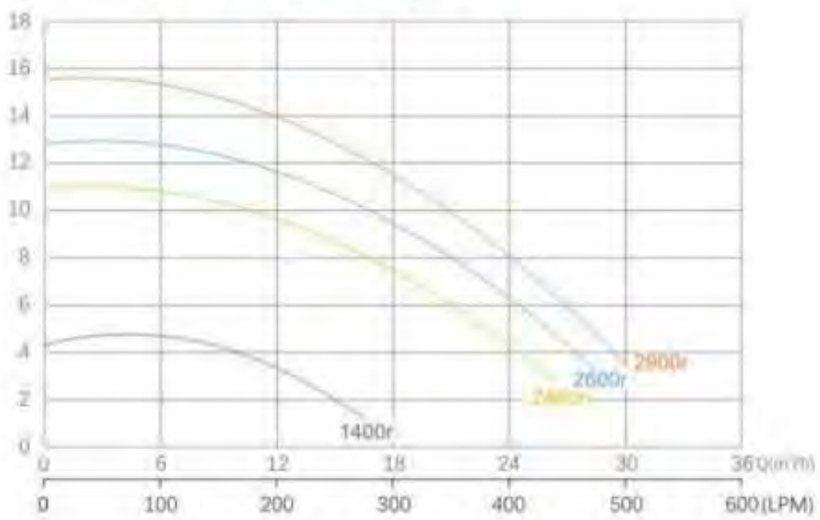
QH.Curve of HLVSP200QW

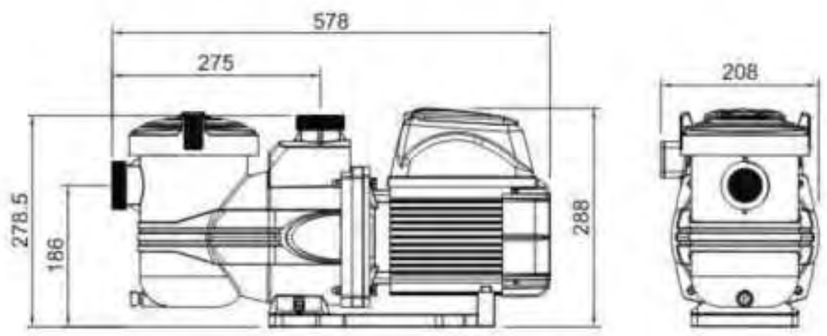


QH.Curve of HLVSP100QWU



QH.Curve of HLVSP150QWU





Model	Output power (P2)		Rated power supply	Max. current (A)	RPM	Max. Flow (m^3/h)	Max.Head (m)	Circulation Flow		Connection Size	Packing size (mm)
	Horse power (HP)	Rated power (kW)						Flow at 8m (m^3/h)	Flow at 10m (m^3/h)		
WL-HLVSP100QW	1	0.75	220V-240V; 50Hz/60Hz	4.1	1000-2900	27	14.5	20	16	2"/63mm	620×280×380
WL-HLVSP150QW	1.5	1.1	220V-240V; 50Hz/60Hz	5.5	1000-2900	30	16	24	21	2"/63mm	620×280×380
WL-HLVSP200QW	2	1.5	220V-240V; 50Hz/60Hz	7	1000-2900	33	17	26	23	2"/63mm	620×280×380
WL-HLVSP100QWU	1	0.75	110V-120V; 50Hz/60Hz	8	1000-2900	27	14.5	20	16	2"/63mm	620×280×380
WL-HLVSP150QWU	1.5	1.1	110V-120V; 50Hz/60Hz	11	1000-2900	30	16	24	21	2"/63mm	620×280×380

HLLF SERIES PUMP

Material:

- Pump housing: PP+35%GF
- Filter basket: PP
- Shaft: SS316
- Bearing: NSK
- Mechanical seal: Carbon+Resin-Ceramics (Carbon, Ceramics, SS304,NBR)
- Impeller: Noryl+30% Fiberglass
- Diffuser and pump base: PP+35% Fiberglass

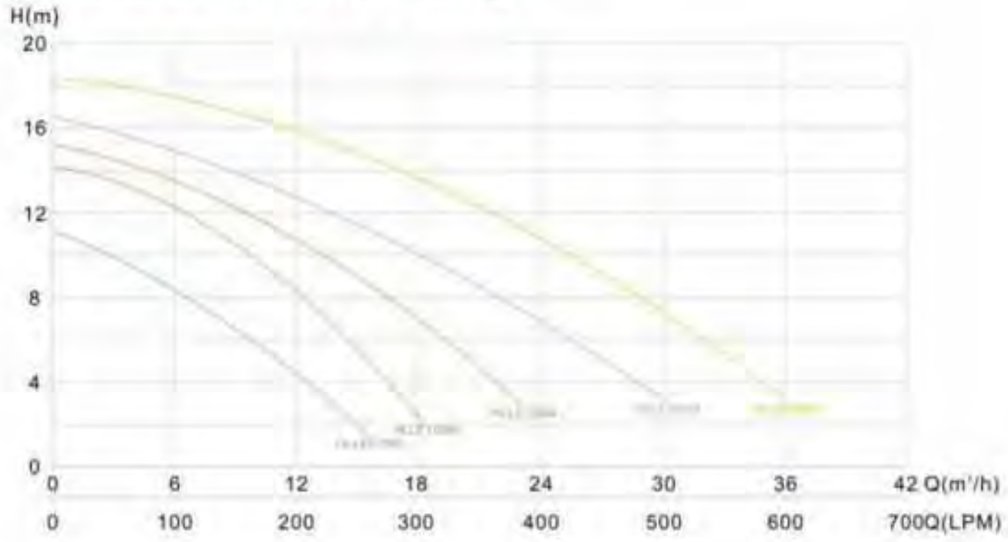
Features:

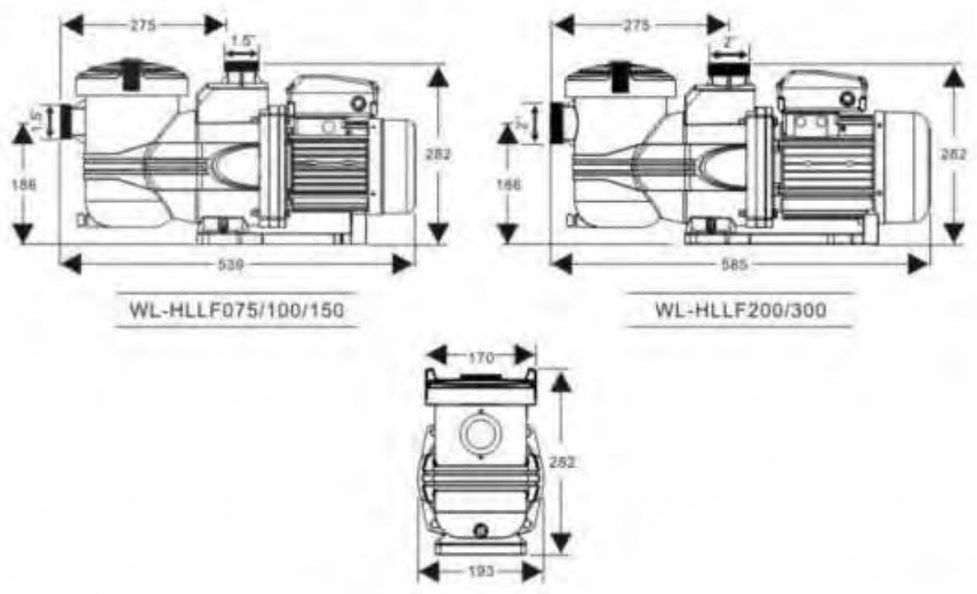
- The inlet and outle of this series comes with an external thread, which can be used to connect to metric or imperial pipes.
- The pump has excellent performance and reliable quality, which can bear 25000 times of impact test.
- Low noise: 0.75 HP can lower than 65 dB.
- Liquid Temperature: 5～50 °C (41～122 °F).
- Ambient Temperature: up to 45°C (113°F).
- Maximum working pressure: 2.5 bar.
- IPX5 waterproof standard
- Class I protection against electric shock.
- Thermal protection included.
- Motor: 3000r.p.m.
- Single phase:220V/50Hz
- 220V/60Hz, 380V/50Hz are available on request

0.75HP-1.5HP

2.0HP-3.0HP

QH.Curve of The Pump





WL-HLLF075/100/150

WL-HLLF200/300

Model	Q-max (m^3/h)	H-max (m)	Horsepower (HP)	Rated Power (kW)	Phase	Voltage (V)	Connection size
WL-HLLF075M	14.8	11.1	0.75	0.6	1	220	1.5" 50mm
WL-HLLF100M	17.4	14.1	1	0.8	1	220	1.5" 50mm
WL-HLLF150M	22.1	15.1	1.5	1.1	1	220	1.5" 50mm
WL-HLLF200M	30.2	16.4	2	1.6	1	220	2" 63mm
WL-HLLF300M	36	18.2	3	2.2	1	220	2" 63mm
WL-HLLF100T	15.8	13.9	1	0.8	3	380	1.5" 50mm
WL-HLLF150T	22.7	15.2	1.5	1.1	3	380	1.5" 50mm
WL-HLLF200T	33.1	16.9	2	1.6	3	380	2" 63mm
WL-HLLF300T	39.8	18.2	3	2.2	3	380	2" 63mm

BHP/BHP-E SERIES PUMP

BHP/BHP-E heavy-duty pumps deliver high flow and high performance. It's designed for commercial swimming pools. Unique large diffuser and maximum performance impeller with high-performance motor maximize energy efficiency.

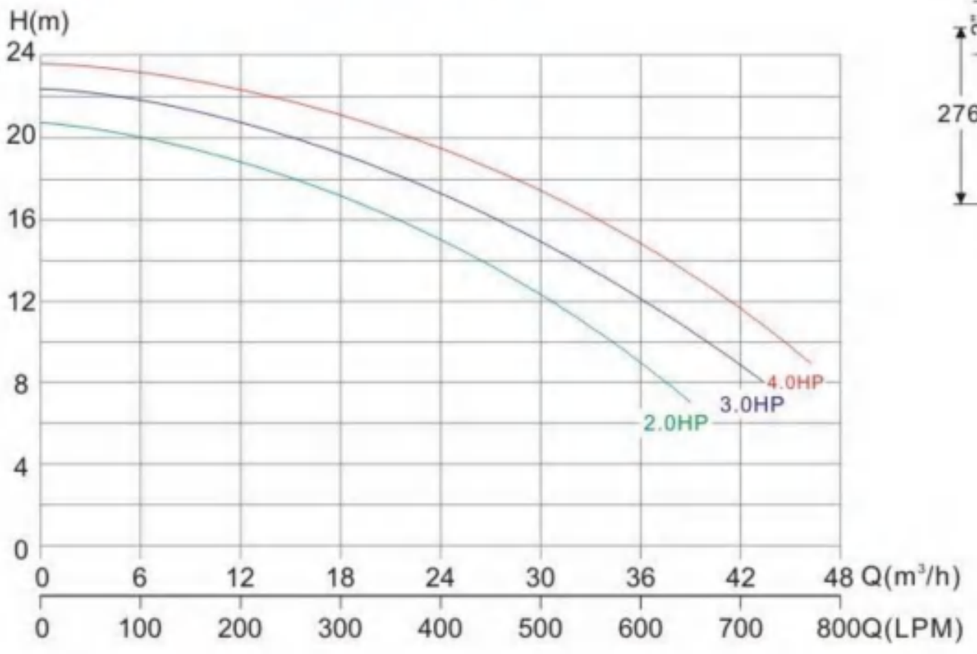
Features:

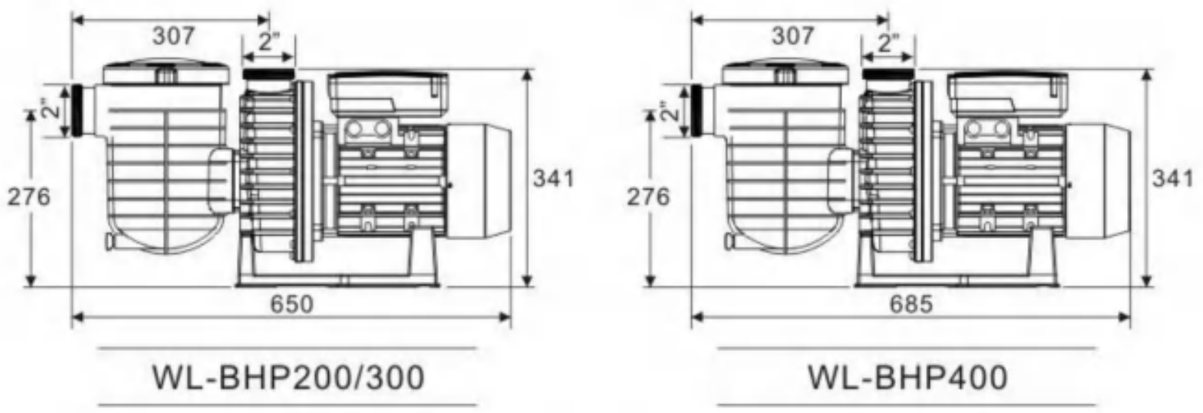
- The inlet or outlet port can connect with metric or imperial pipes.
- The pump has excellent performance and reliable quality, which can bear 25000 times of impact test.
- Liquid Temperature: 5~50 °C (41~122 °F).
- Ambient Temperature: up to 45°C (113°F).
- Maximum working pressure: 2.5 bar.
- IPX5 waterproof standard
- Class I protection against electric shock.
- Thermal protection included.
- The motor is painted fluoride-resistant acid corrosion protective coating,resists chemical and marine corrosion. (for BHP-E series pump)
- Motor: 3000r.p.m.
- 50Hz or 60Hz is available for different necessities.

Material:

- Pump Housing: PP+35%GF
- Filter Basket: PP
- Shaft: Ss304
  SS316 (For seawater pump BHP-E series)
- Bearing: NSK
- Mechanical seal:
  Carbon+Resin-Ceramics (Carbon, Ceramics,SS304,EPDM)
  SS316+EPDM(Seals bellows)+SIC+Graphite
  (For seawater pump BHP-E series)
- Impeller: Noryl+30%GF
- Diffuser: Noryl+30%GF
- Pump Base: PP+35%GF

QH.Curve of The Pump





Model	Q-max (m^3/h)	H-max (m)	Horsepower (HP)	Rated Power (kW)	Phase	Voltage (V)	Connection size
WL-BHP200M/WL-BHP-E200M	38	20	2.0	1.5	1	220	2" 63mm
WL-BHP300M/WL-BHP-E300M	42	21	3.0	2.2	1	220	2" 63mm
WL-BHP200T/WL-BHP-E200T	38	20	2.0	1.5	3	380	2" 63mm
WL-BHP300T/WL-BHP-E300T	42	21	3.0	2.2	3	380	2" 63mm
WL-BHP400T/WL-BHP-E400T	45	22	4.0	3.0	3	380	2" 63mm

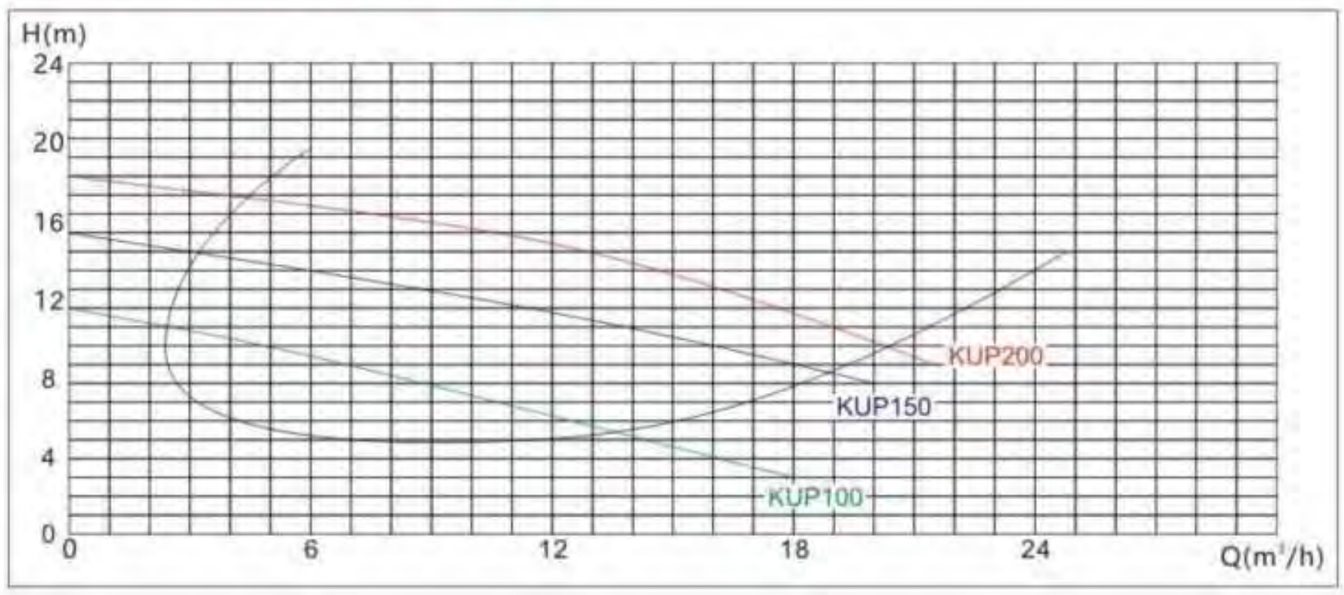
KUP SERIES SEAWATER PUMP

KUP series is used for water circulation in all kinds of small aquaculture and seawater pond, with enough horsepower and stable operation. The pump is constructed with corrosion resistant and high strength material, with excellent bearing pressure performance up to 6kg/cm². Suitable for all kinds of seawater condition.

Features:

- Protection: IP55.
- Large flow rate.
- Low noise level.
- Excellent bearing pressure performance up to 6kg/cm².
- Shaft: Stainless steel 316.
- Mechanical seal: Graphite / Ceramic seal.

QH. Curve of The Pump



Product parameters

Model	Horsepower (HP)	Rated Power (KW)	Voltage (V)	Connection size (mm)	Weight (kg)	L (mm)	W (mm)	H (mm)
WL-KUP100	1	0.75	220	50	15.2	598.5	220	370
WL-KUP150	1.5	1.1	220	50	15.6	598.5	220	370
WL-KUP200	2	1.5	220	50	16.0	598.5	220	370

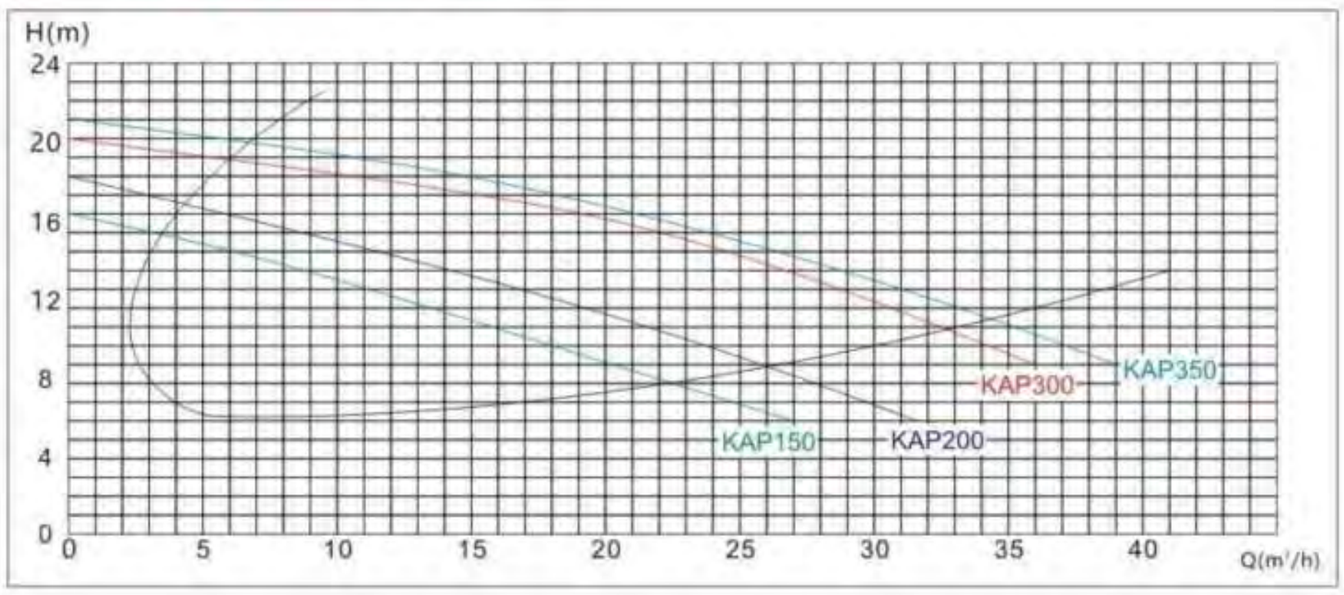
KAP SERIES SEAWATER PUMP

KAP series seawater pump is with simple design, easy to install and maintain. Adopts special impeller for greater suction efficiency. The body is constructed of special materials, with excellent bearing pressure performance up to 6kg/cm². Suitable for all kinds of aquaculture ponds and seawater ponds.

Features:

- Protection: IP55.
- Large flow rate.
- Low noise level.
- Excellent bearing pressure performance up to 6kg/cm².
- Shaft: Stainless steel 316.
- Mechanical seal: Graphite / Ceramic seal.

QH. Curve of The Pump



Product parameters

Model	Horsepower (HP)	Rated Power (KW)	Voltage (V)	Connection size (mm)	Weight (kg)	L (mm)	W (mm)	H (mm)
WL-KAP150	1.5	1.1	220	63	20.8	700	221	378
WL-KAP200	2	1.5	220	63	22.0	700	221	378
WL-KAP300	3	2.2	220/380	63	24.0	700	221	378
WL-KAP350	3.5	2.6	220/380	63	25.0	700	221	378

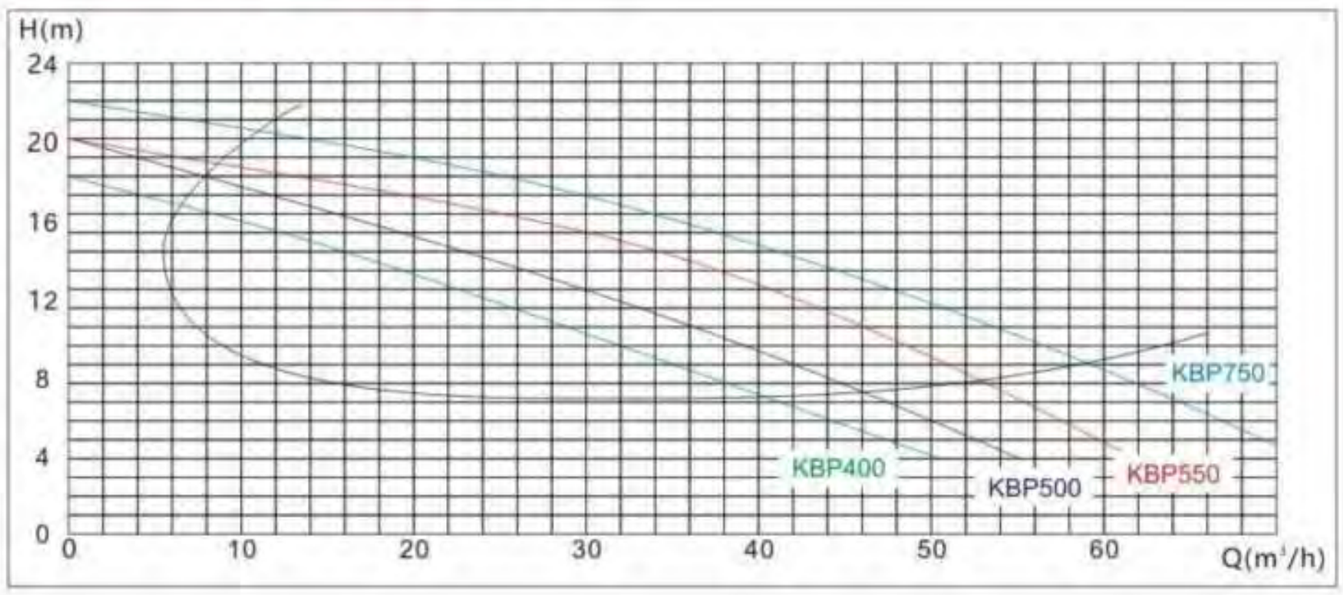
KBP SERIES SEAWATER PUMP

KBP seawater pump is a series of sturdy and durable pump with high head and sufficient flow. The body has strong sealing, corrosion resistance and pressure resistance. Suitable for all kinds of aquaculture ponds and seawater ponds.

Features:

- Protection: IP55.
- Large flow rate.
- Low noise level.
- Excellent bearing pressure performance up to 6kg/cm².
- Shaft: Stainless steel 316.
- Mechanical seal: Graphite / Ceramic seal.

QH. Curve of The Pump



Product parameters

Model	Horsepower (HP)	Rated Power (KW)	Voltage (V)	Connection size (inch)	Speed (rpm)	L (mm)	W (mm)	H (mm)
WL-KBP400	4	3.0	380	2.5"	2850	750	221	373
WL-KBP500	5	3.8	380	2.5"	2850	750	221	373
WL-KBP550	5.5	4.0	380	2.5"/3"	2850	770	221	373
WL-KBP750	7.5	5.5	380	2.5"/3"	2850	780	221	373

STP SERIES PUMP

0.35HP-1.2HP

1.5HP-3.0HP

Features:

- Motor and water are completely seperated.
- Total electrical separation.
- Pump housing, pump cover & impeller are made of high reinforced plastic.
- Quick record could be used with the inlet & outlet.

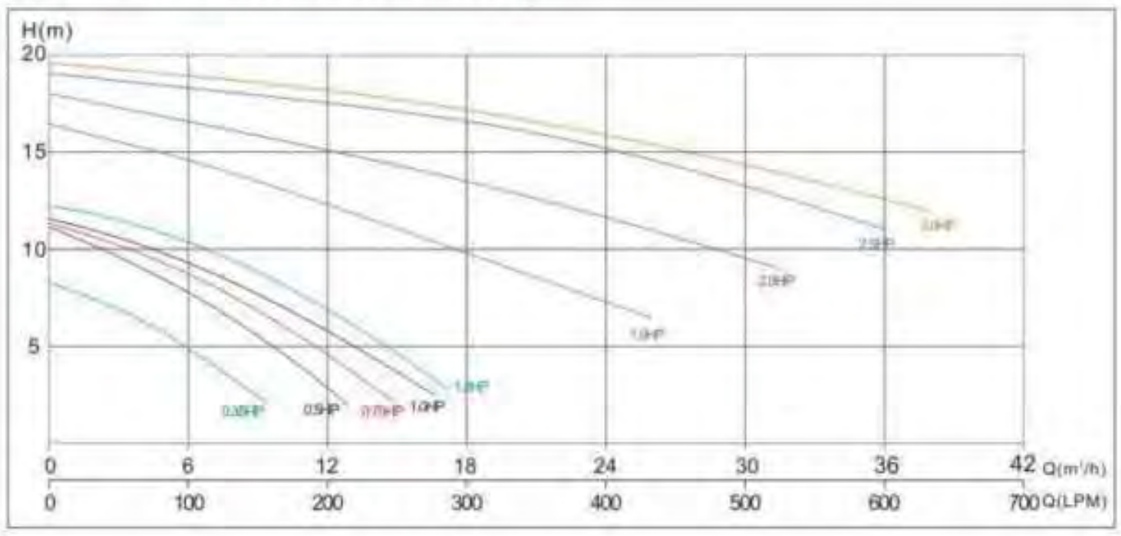
Operation conditions:

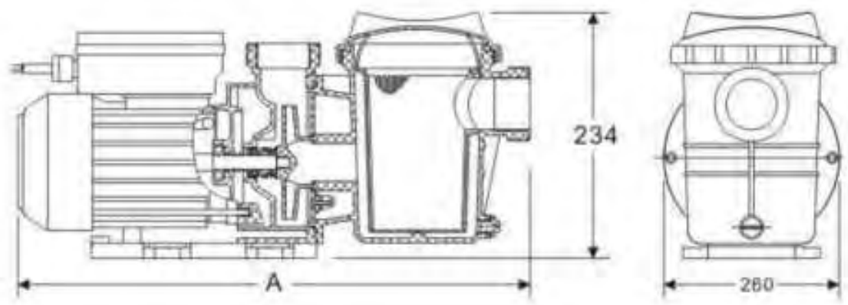
- Liquid Temperature: 5 ~ 50 ℃ (41 ~ 122 ℉).
- Ambient Temperature: up to 50℃ (122℉).
- Maximum working pressure: 3.0 bar.

Applications:

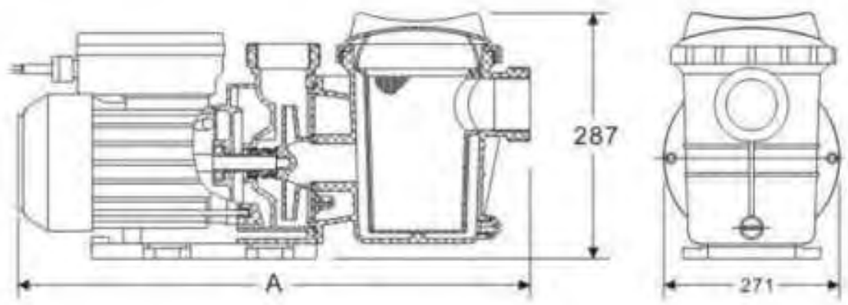
- Jet pump for jetted bath tubs, spa pools, swimming pools, massage stations and cleaning system.

QH.Curve of The Pump





WL-STP35~WL-STP120



WL-STP150~WL-STP300

Model	Q-max (m^3/h)	H-max (m)	Horsepower (HP)	Rated Power (kW)	Phase	Voltage (V)	Connection size	A Length (mm)
WL-STP35	9.6	8	0.35	0.26	1	220	1.5" or 50mm	443
WL-STP50	12.6	11	0.5	0.37	1	220	1.5" or 50mm	443
WL-STP75	14.4	10.5	0.75	0.56	1	220	1.5" or 50mm	465
WL-STP100	16.5	11	1.0	0.75	1	220	1.5" or 50mm	465
WL-STP120	18	13	1.2	0.9	1	220	1.5" or 50mm	465
WL-STP150	25.8	16.5	1.5	1.1	1	220	2" or 63mm	573
WL-STP200	31.2	18	2.0	1.5	1	220	2" or 63mm	573
WL-STP250	36	19	2.5	1.87	1	220	2" or 63mm	573
WL-STP300	38.1	19.5	3.0	2.25	1	220	2" or 63mm	598
WL-STP300	38.1	19.5	3.0	2.25	3	380	2" or 63mm	598

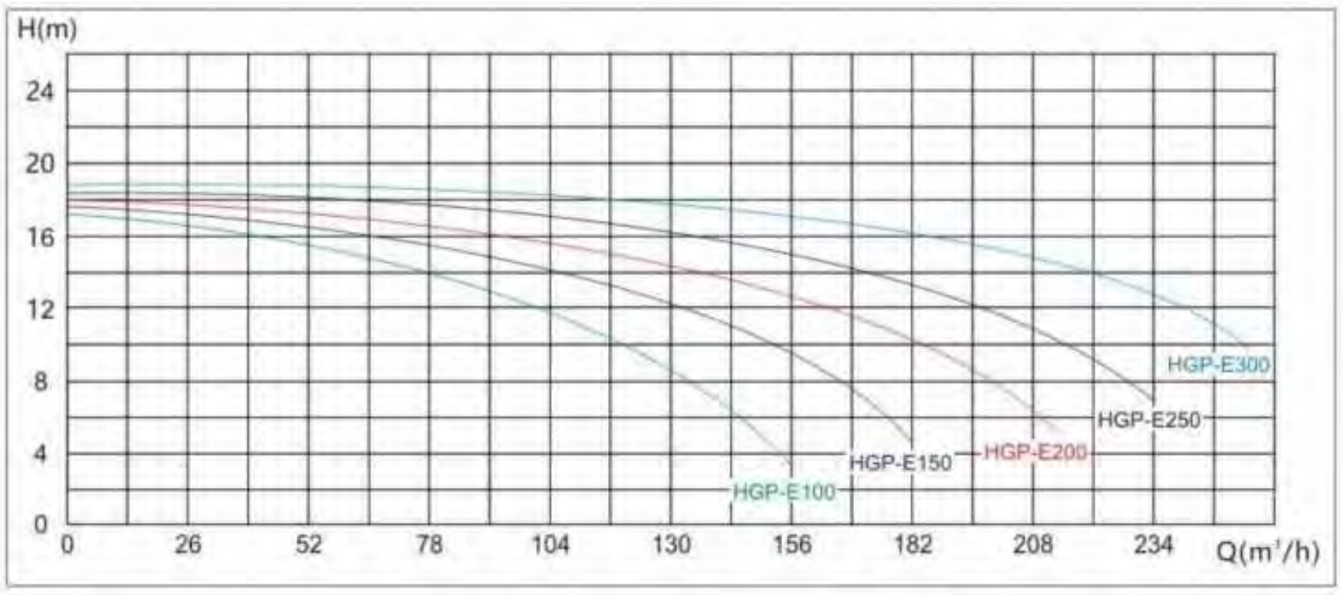
HGP-E SERIES SEAWATER PUMP

HGP-E series pump is a newly-patented large flow self-priming plastic pump, adopting bionic turbo pump body design, maximizing the conversion of motor efficiency to deliver massive & smoothly water flow, with a max flow rate up to 260m³/h. The hickened body and spiral lock design, excellent bearing pressure performance make the pump sturdy and durable. Due to the imported bearings and high-quality mechanical seal, the motor operates more stably and quietly. It has flange inlet and outlet which is convenient for installation and operation, easy to maintain. All spare parts are available, suitable for seawater condition.

Features:

- Super water flow up to 260m³/h.
- Four-pole motor, speed: 1450RPM.
- High-quality mechanical seal, super quiet operation.
- Protection: IP55.
- Insulation: Class F.
- Bionic turbo pump body design.
- Excellent bearing pressure performance up to 6kg/cm².

QH. Curve of The Pump



Product parameters

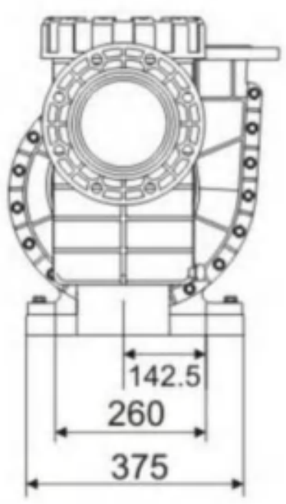
Model	Horsepower (HP)	Rated Power (KW)	Voltage (V)	Max. head (m)	Max. flow rate (m³/h)	RPM (r/min)	Water inlet size (inch)	Water outlet size (inch)
WL-HGP-E100	10.0	7.5	380V/50Hz	18	170	1450	150mm	125mm
WL-HGP-E150	15.0	11.0	380V/50Hz	18	185	1450	150mm	125mm
WL-HGP-E200	20.0	15	380V/50Hz	18	220	1450	150mm	125mm
WL-HGP-E250	25.0	18.5	380V/50Hz	18	240	1450	150mm	125mm
WL-HGP-E300	30.0	22	380V/50Hz	18	260	1450	150mm	125mm

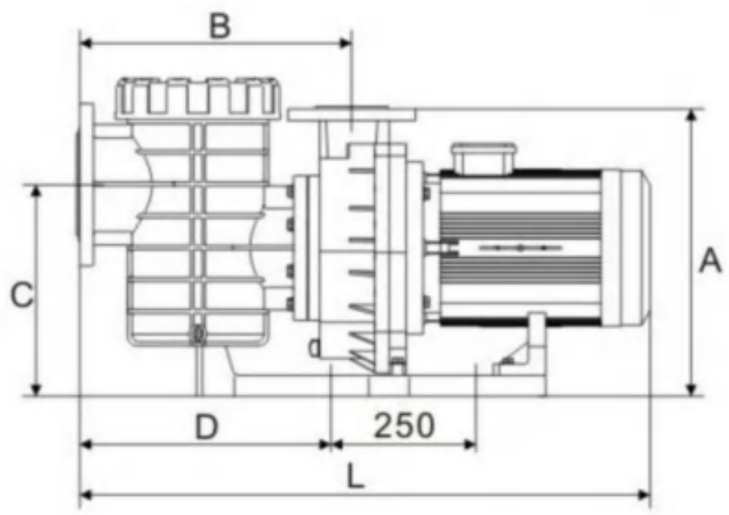
KLBP SERIES SEAWATER PUMP

Specially designed for large scale freshwater / seawater aquarium and aquaculture, with strong and powerful motor, large flow design, meets the requirements of various fish and shrimp breeding.

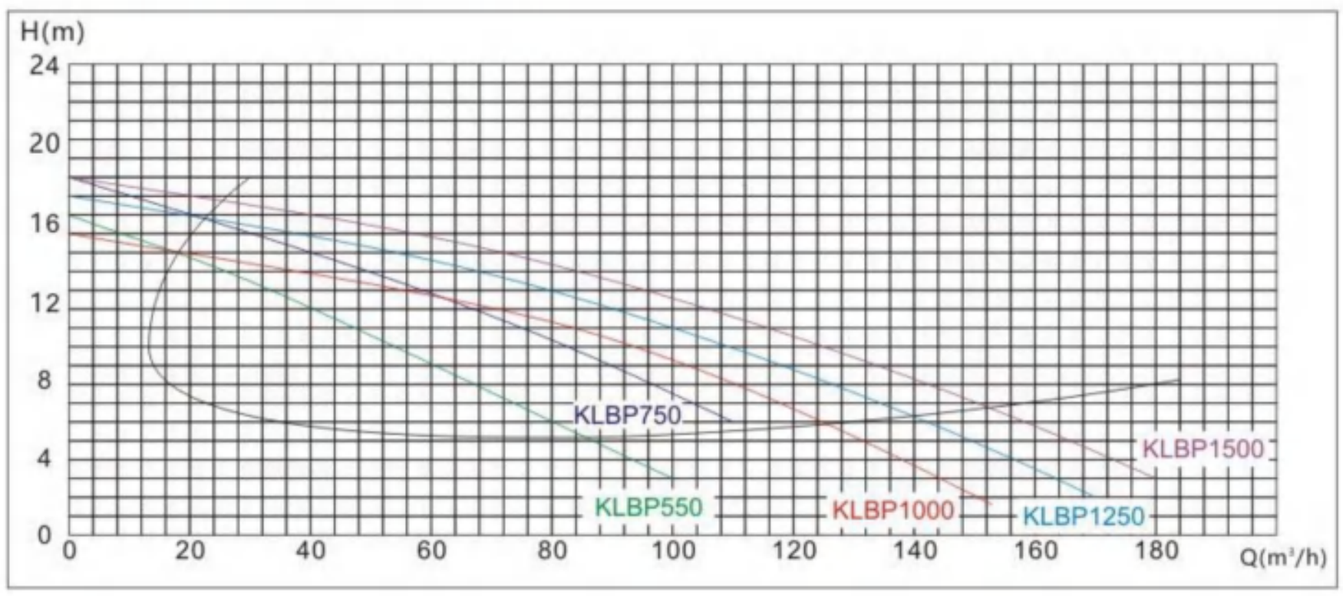
Features:

- Protection: IP55.
- Excellent bearing pressure performance up to 6kg/cm².
- Shaft: Stainless steel 316.
- Mechanical seal: Graphite / Ceramic seal.
- Motor speed: 1450RPM.





QH. Curve of The Pump



Product parameters

Model	Horsepower (HP)	Rated Power (KW)	Voltage (V)	Water inlet size	Water outlet size	L (KW)	A (KW)	B (KW)	C (KW)	D (KW)
WL-KLBP550	5.5	4.0	380	DN125	DN80	810	481	441	365	402
WL-KLBP750	7.5	5.5	380	DN125	DN80	830	481	441	365	402
WL-KLBP1000	10.0	7.5	380	DN150	DN100	930	496	469	365	433
WL-KLBP1250	12.5	9.0	380	DN150	DN100	930	496	469	365	433
WL-KLBP1500	15.0	11.0	380	DN150	DN100	970	496	469	365	433

NISO/NIS/NISF END SUCTION CENTRIFUGAL PUMP

The pumps are suitable for use in clean, thin, non corrosive, non flammable and explosive liquids that do not contain solid particles or fibers.

Applications: water supply systems, heating, air conditioning systems, pressurised water supply, constant pressure water supply, fire sprinkler systems, irrigation, livestock use, industrial refrigeration, heating circulation systems, industrial transport, discharge systems.

Product parameter:

- Max. flow rate: 1200m³/h
- Max. head: 160m
- Max. working pressure: 16bar
- Max. inlet pressure: 6bar
- Max. power: 200kW
- Medium temperature: -15℃~110℃
- Water Inlet and outlet size:
  Water inlet: DN50-DN300
  Water outlet: DN32-DN250

Features:

- Adopting back pull-out structure, no need to dismantle the pump body and pipeline during maintenance.
- The NISO pump model uses only four types of pump shaft and suspension body components, improving interchangeability of parts.
- The impeller is optimally designed with larger inlet and no vortex, which effectively reduces the pump's cavitation margin and makes the pump run smoothly and low-noise, with smoother performance curves, a wider range of flow rates, and a superior performance.
- G or Q series pumps of NIS are designed in full accordance with the latest GB/T5662 standard, the performance curve is steeper compared to NISO, NIS, NISF type performance curve, and the flow range is in line with the target requirements. Adopting excellent hydraulic model and optimized CFD, to achieve high efficiency and reasonable head distribution.
- NIS, NISF pumps are small, compact and easy to install.
- The material of the impeller, pump body, pump cover and other main parts of NIS - G or Q series pumps is cast iron. Special requirement can be customized.

Motor:

- Totally enclosed, fan-cooled motor, and its main dimensions meet the requirements of GB/T28575 standard.
- 50Hz, 3PH, with 2-pole and 4-pole as standard.

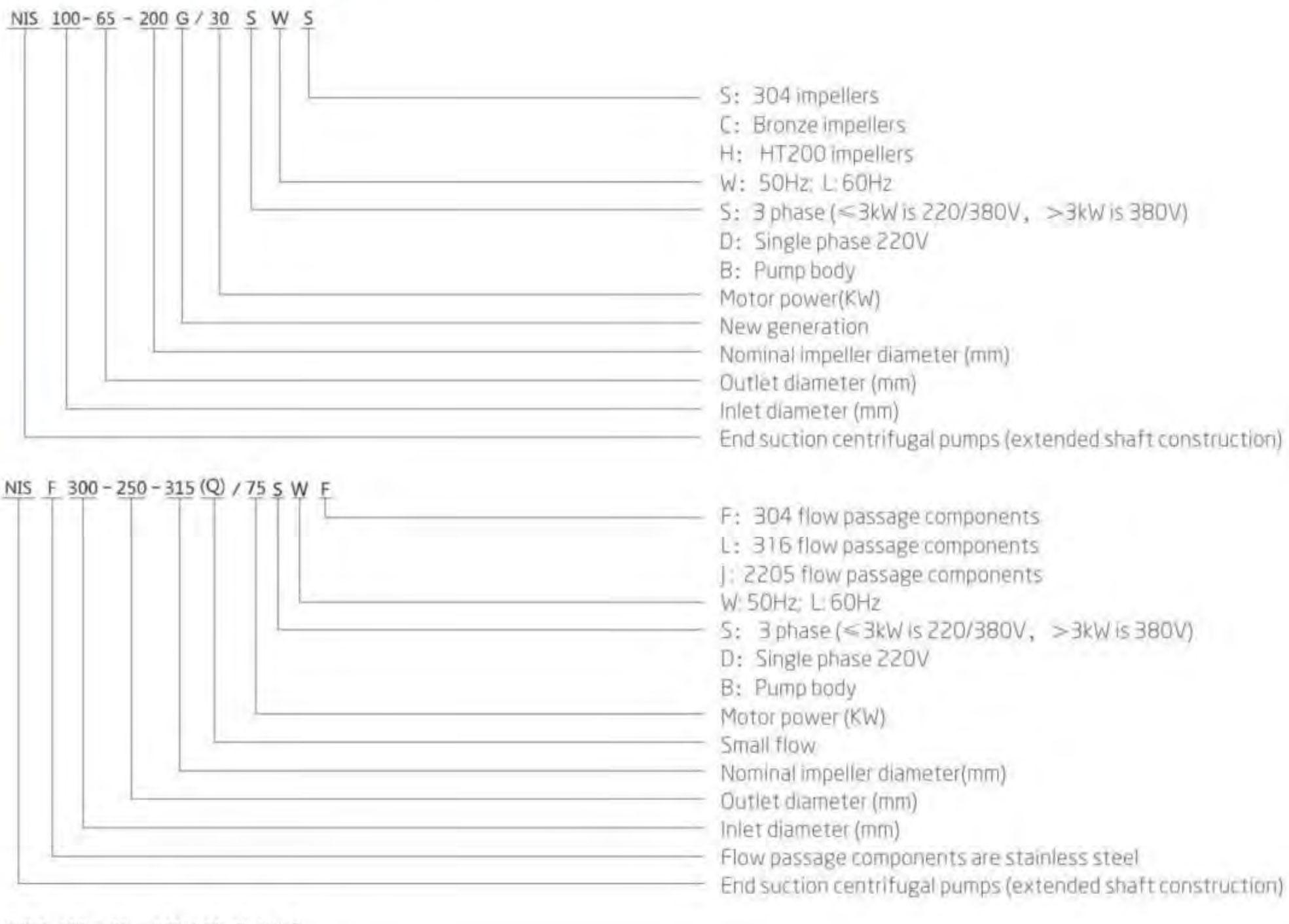
Pump structure:

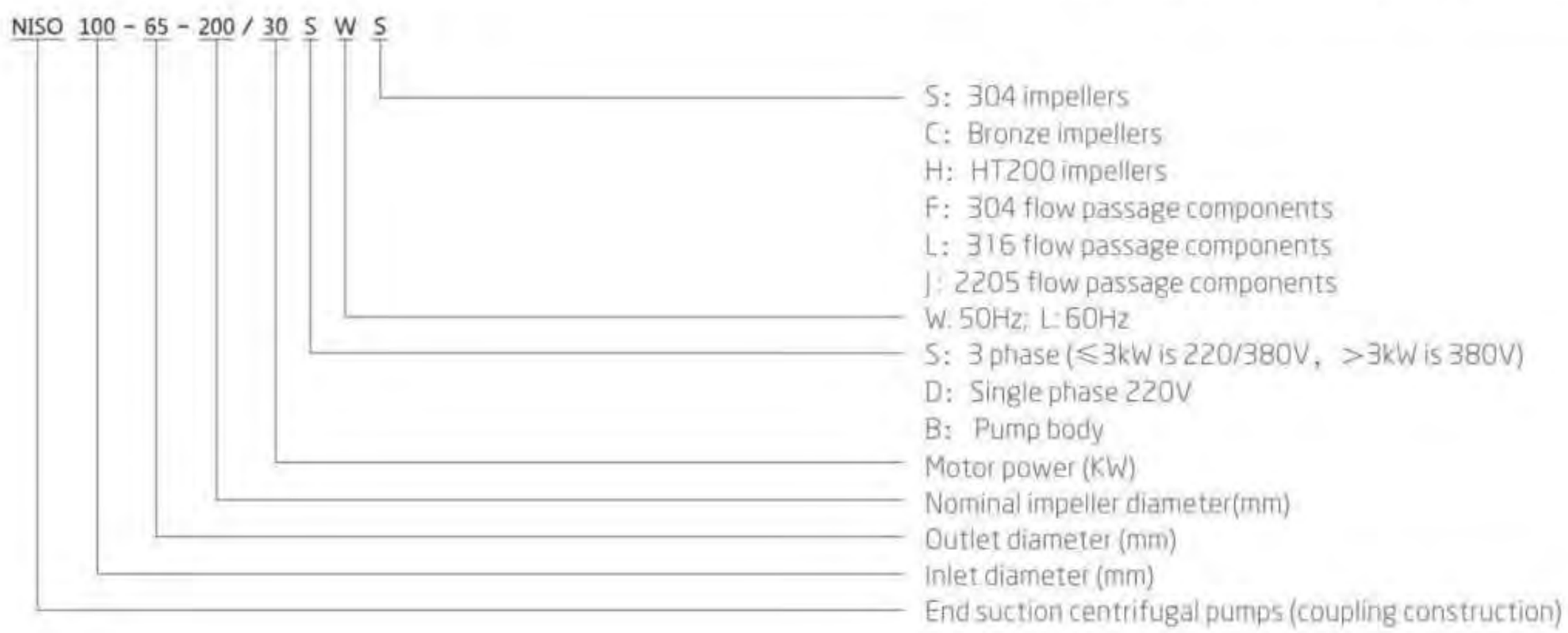
- The pump is non-self-priming, single stage, single suction horizontal type, with axial inlet and radial outlet. The bottom of the pump body is fixed to the base.
- Standard wear-resistant mechanical seals are used.
- Totally enclosed, fan-cooled IEC standard motors.
- NISO pumps adopt bearing carriers that allow for bearing positioning to avoid axial runout of the bearings, while increasing the rigidity of the rotor components.
- NISO integral pump shaft adopts grease lubricated guide deep groove ball bearings.
- NISO pump is connected to the motor by a semi-elastic coupling.
- The shape and mounting dimensions of NISO pump are in accordance with ISO2858.
- NIS and NISF pumps are constructed with a direct connection type coupling extended shaft.
- The inlet and outlet flanges of cast iron pump body are in accordance with GB/T17241.6 (ISO7005-2) standard, pressure level is PN16. The inlet and outlet flanges of stainless steel pump body are in accordance with GB/T9113 (ISO7005-1) standard, pressure level is PN16.

Operating conditons:

- The pumps are designed for installation in non-corrosive and non-explosive environments with a relative humidity not exceeding 95%.
- Ambient humidity and altitude
- Ambient humidity and the altitude at which it is installed are important factors in the life of the motor, as they affect the life of the bearings and insulation system.
- The installation altitude is the height above sea level of the installation location. If the ambient temperature exceeds the recommended max. ambient temperature or the installation height exceeds the recommended max. altitude, the motor must not be used for full load operation due to low density and poor air cooling. In this case, a motor with a higher output power needs to be selected.

Model Definition & Meaning





Min. inlet pressure

If the pressure in the pump is lower than the vaporisation pressure of the conveyed liquid, cavitation may occur, in order to avoid cavitation, ensure that the inlet side of the pump has - minimum pressure, the maximum suction lift H (m), can be calculated according to the following formula:

H=Pbx 10.2-NPSH-Hf-Hv-Hs

H - Max. suction (m)

Pb - atmospheric pressure (bar)

System pressure (bar) in a closed line can be considered as a closed system NPSH - Net Positive Suction Pressure (m)

Can be read on the NPSH curve in the performance curve corresponding to the maximum flow rate.

Hf - Pipeline loss at the inlet (m), which corresponds to the max. flow rate that the pipeline may generate.

Hv - The magnitude of the value of the vapour pressure (m) of a liquid depends on the temperature of the liquid and the value of the vapour pressure of the liquid.

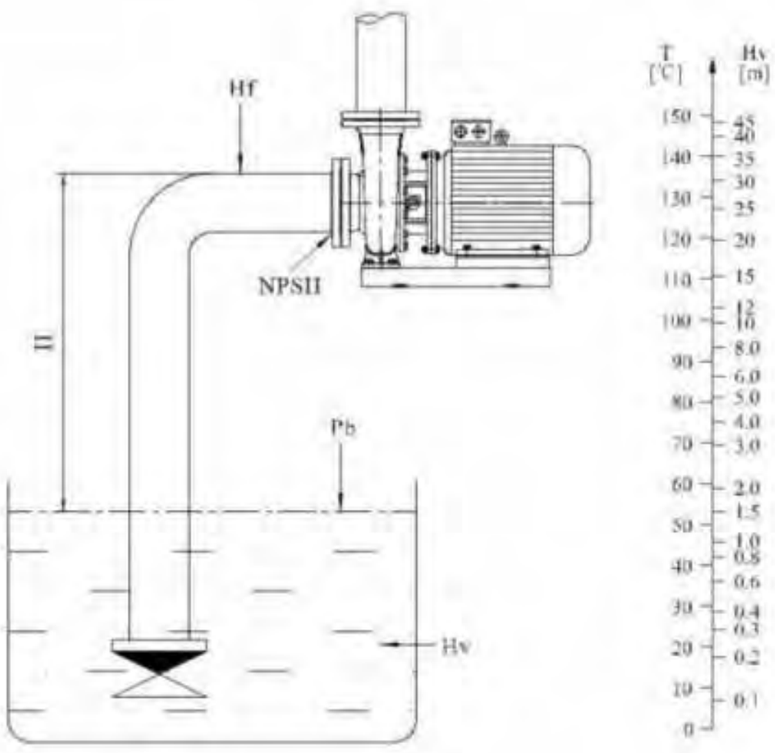
Hs - Safety margin (m), min. 0.5m pressure head.

By calculation, if "H" is positive, it means that the pump can be operated at a maximum suction range of "H"; if "H" is negative, it means that the pump must have a minimum pressure of "H" meters of head at the inlet in order to operate properly.

Note: In general, the above calculations are not performed.

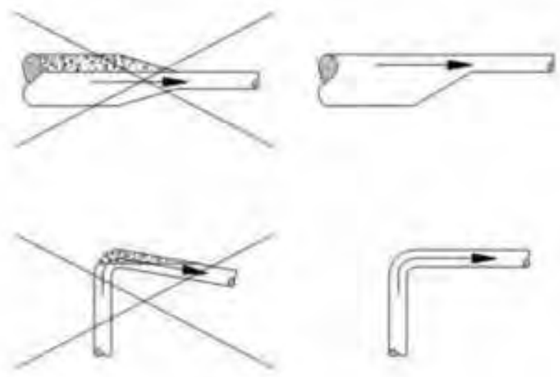
Calculate "H" only if the pump is to be used in the following cases:

1. High liquid temperature.
2. Liquid flow rate exceeds rated value.
3. Large suction inlet or long intake pipeline.
4. The system pressure is too small.
5. Poor inlet conditions.

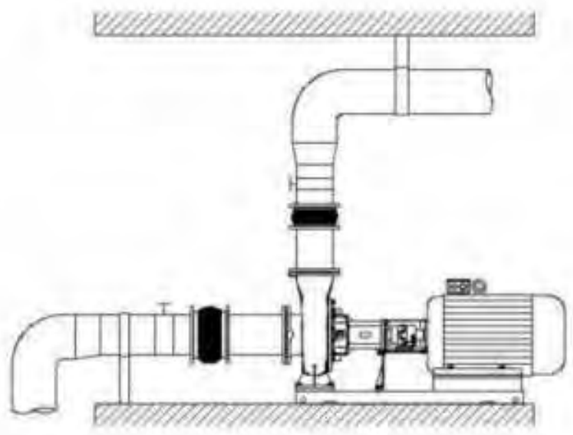


Pipeline installation conditions

- When installing pipelines, it is necessary to ensure that the pump casing does not bear pipeline stress.
- The suction and discharge pipes must be properly sized, while taking into account the inlet pressure of the pump.
- Install pipework to avoid air resistance, especially on the inlet side of the pump. (see figure on the right)



- Install an isolation valve at each end of the pump so that the system does not have to be drained when the pump needs to be cleaned or serviced.
- Ensure that the pipework is adequately supported as close to the pump as possible (inlet side and outlet side). The butt flanges should be securely fastened to the pump flange without being subjected to tensile stresses, the presence of which can damage the pump.



NISO, NIS, NISF product range
4 pole

Product parameters

No.	Model	Q (m^3/h)	H (m)	Motor (kW)	n (r/min)
1	50-32-160/0.55	6.3	85	0.55	1450
2	50-32-160/0.75	6.3	11	0.75	1450
3	50-32-200/1.1	6.3	14	1.1	1450
4	50-32-200/1.5	6.3	18	1.5	1450
5	65-40-200/1.1	12.5	12	1.1	1450
6	65-40-200/1.5	12.5	15	1.5	1450
7	65-40-200/2.2	12.5	17.5	2.2	1450
8	65-40-250/3	12.5	25	3	1450
9	65-40-315/4	12.5	34	4	1450
10	65-40-315/5.5	12.5	40	5.5	1450
11	65-50-160/0.55	25	7	0.55	1450
12	65-50-160/0.75	25	9	0.75	1450
13	65-50-160/1.1	25	10.5	1.1	1450
14	80-50-200/1.5	25	11	1.5	1450
15	80-50-200/2.2	25	15	2.2	1450
16	80-50-200/3	25	17.5	3	1450
17	80-50-250/4	25	21	4	1450
18	80-50-250/5.5	25	25	5.5	1450
19	80-50-315/5.5	25	30	5.5	1450
20	80-50-315/7.5	25	37	7.5	1450
21	80-65-160/0.75	50	6	0.75	1450
22	80-65-160/1.1	50	8	1.1	1450
23	80-65-160/1.5	50	10.5	1.5	1450
24	100-65-200/3	50	11.5	3	1450
25	100-65-200/4	50	14	4	1450
26	100-65-200/5.5	50	16	5.5	1450
27	100-65-250/5.5	50	20	5.5	1450
28	100-65-250/7.5	50	25	7.5	1450
29	100-65-315/11	50	32	11	1480

NISO, NIS, NISF product range
4 pole

Product parameters

No.	Model	Q (m^3/h)	H (m)	Motor (kW)	n (r/min)
30	100-65-315/15	50	40	15	1480
31	100-80-160/1.5	50	6.5	1.5	1450
32	100-80-160/2.2	50	9	2.2	1450
33	100-80-160/3	50	10.5	3	1450
34	125-80-400/15	50	39	15	1480
35	125-80-400/18.5	50	45	18.5	1480
36	125-80-400/22	50	50	22	1480
37	125-80-400/30	50	60	30	1480
38	125-80-400/37	50	67	37	1480
39	125-100-200/4	100	9	4	1450
40	125-100-200/5.5	100	11.5	5.5	1450
41	125-100-200/7.5	100	14	7.5	1450
42	125-100-200/11	100	16.5	11	1480
43	125-100-250/15	100	25	15	1480
44	125-100-315/11	100	23	11	1480
45	125-100-315/18.5	100	32	18.5	1480
46	125-100-315/22	100	36	22	1480
47	125-100-315/30	100	40	30	1480
48	125-100-400/30	100	50	30	1480
49	125-100-400/37	100	58	37	1480
50	125-100-400/45	100	65	45	1480
51	150-125-250/11	200	12.5	11	1480
52	150-125-250/15	200	16	15	1480
53	150-125-250/18.5	200	20	18.5	1480
54	150-125-250/22	200	24	22	1480
55	150-125-315/30	200	32	30	1480
56	150-125-315/37	200	39	37	1480
57	150-125-400/45	200	50	45	1480
58	150-125-400/55	200	57	55	1480

NISO, NIS, NISF product range
4 pole

Product parameters

No.	Model	Q (m^3/h)	H (m)	Motor (kW)	n (r/min)
59	150-125-400/75	200	68	75	1480
60	200-150-315/37	400	23	7	1480
61	200-150-315/45	400	27	45	1480
62	200-150-315/55	400400	32	55	1480
63	200-150-315/75	400	38	75	1480
64	200-150-400/75	400	43	75	1480
65	200-150-400/90	400	50	90	1480
66	200-150-400/110	400	62	110	1480
67	250-200-315/37	500	20	37	1480
68	250-200-315/45	500	23	45	1480
69	250-200-315/55	630	24	55	1480
70	250-200-315/75	630	32	75	1480
71	250-200-400/90	630	37	90	1480
72	250-200-400/110	630	44	110	1480
73	250-200-400/132	630	53	132	1480
74	250-200-400/160	630	60	160	1480
75	300-250-315(Q)/75	800	26	75	1480
76	300-250-315(Q)/90	800	32	90	1480
77	300-250-315(Q)/110	800	35	110	1480
78	300-250-400(Q)/110	800	38	110	1480
79	300-250-400(Q)/132	800	45	132	1480
80	300-250-400(Q)/160	800	53	160	1480
81	300-250-400(Q)/200	800	63	200	1480
82	300-250-315/75	1000	20	75	1480
83	300-250-315/90	1000	25	90	1480
84	300-250-315/110	1000	31	110	1480
85	300-250-400/132	1000	37	132	1480
86	300-250-400/160	1000	45	160	1480
87	300-250-400/200	1000	50	200	1480

AIR BLOWER

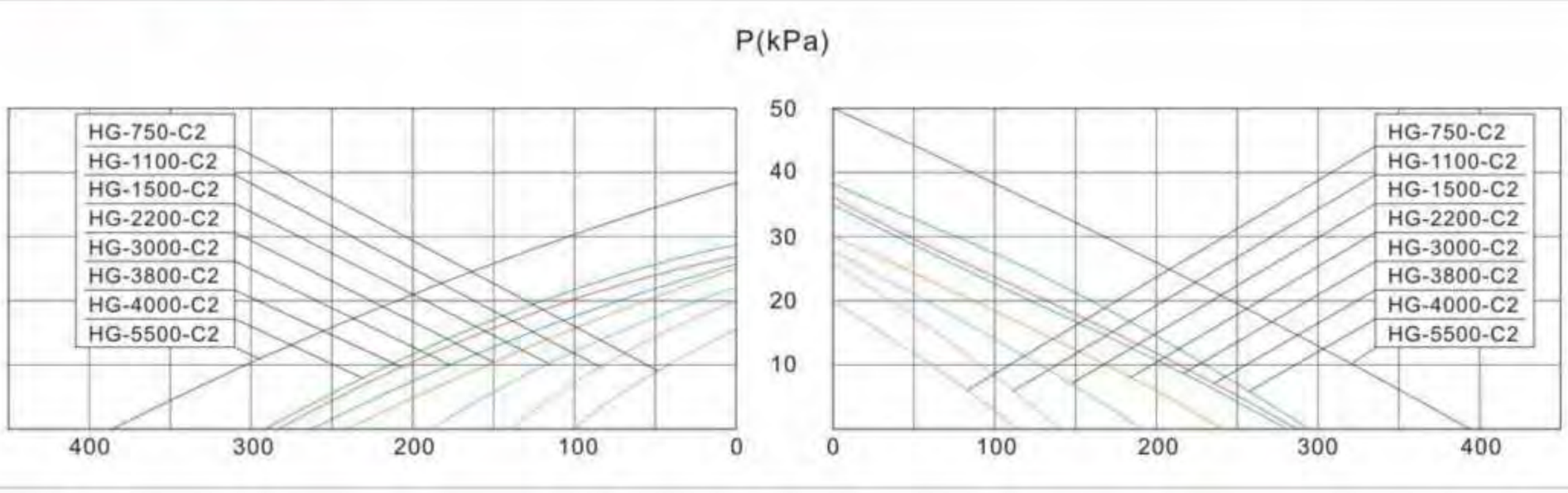
Features:

- Centrifugal vanes produce high pressure, great outflow, and low noise.
- A high-quality engine ensures a safe and steady effect.
- Oil free and pure compressed air.
- The machine has a wide range of power and can run a long service life.
- 50Hz or 60Hz are available on request.

Application:

- Fish Farm
- Aquaculture
- Swimming Pool/ Spa Pool
- Cooling for Molding
- Ultrasonic Washing and Cleaning Equipment
- Central Vacuum Cleaning System
- Printing Machine
- Sewage Treatment
- Water Treatment
- Agriculture Field

QH.Curve of The Pump

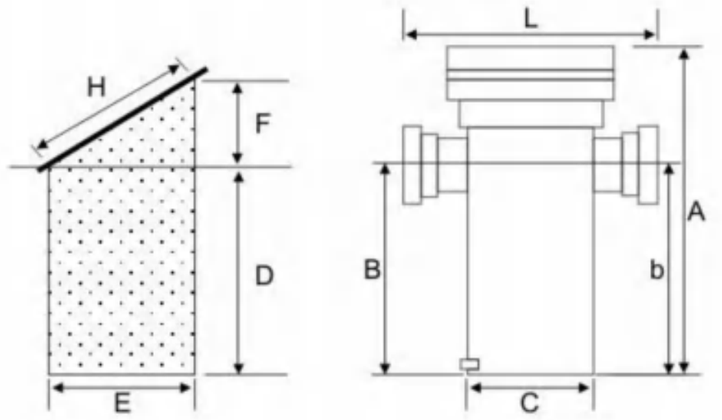


Model	Voltage (V)	Power (W)	Max.Pressure (Kpa)	Vacuum (Kpa)	Output (m^3/h)	Pressure (KPa)	Weight (KGS)	Dimensions L*W*H(mm)
HG-750-C2	220	750	20	-16	110	<12	14	306*288*315
HG-1100-C2	220	1100	26	-20	135	<18	19	329*320*390
HG-1500-C2	380	1500	28	-22	180	<18	25	338*328*357
HG-2200-C2	380	2200	30	-24	240	<20	28	392*362*372
HG-3000-C2	380	3000	35	-25	260	<25	36	425*384*400
HG-3800-C2	380	3800	36	-26	280	<26	38	410*392*404
HG-4000-C2	380	4000	38	-28	280	<28	45	415*392*404
HG-5500-C2	380	5500	50	-35	380	<28	58	486*418*453

BASKET STRAINER

WL-BS SERIES FRP STRAINER

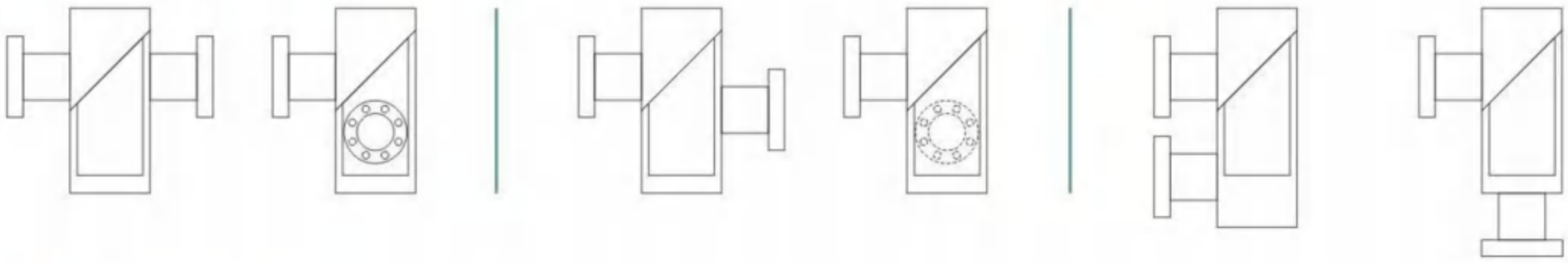
Basket strainer is used as pre-filter to remove hair, fiber and large suspended solids in water, to protect the pump and ensure the normal operation of the whole water treatment system.



Features:

- Main body material: UPVC+FRP
- Max. pressure: 100 psi/6.8 bar
- Filter screen material: 316SS/titanium alloy
- Ambient temperature:≤50℃
- Hardware: 316SS
- Application: Chemical, seawater filtration
- Water inlet & outlet: UPVC flange, outlet position can be customized.
- Filter basket hole: 6mm (Hole center distance 9mm), or can be customized.

Styles can be customized:



BASKET STRAINER

Product parameters

Model	Water inlet	Water outlet	Main body					Filter basket				
			Outer diameter Ø C	Inlet height B	Outlet height b	Total width L	Total height A	Outer diameter Ø E	45-degree height F	(Straight) Height D	(Total) Height F+D	Length H
	DN	DN	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
WL-BS50-50	50	50	110	175	175	230	370	80	80	70	150	126
WL-BS80-80	80	80	160	245	245	320	500	100	110	100	210	182
WL-BS100-100	100	100	160	335	335	345	590	110	120	180	300	188
WL -BS150-150	150	150	225	420	420	450	705	160	170	230	400	266
WL-BS150-125	150	125	225	420	420	450	705	160	170	230	400	266
WL-BS150-100	150	100	225	420	420	450	705	160	170	230	400	266
WL -BS200-200	200	200	315	575	575	625	940	225	235	315	550	373
WL -BS200-150	200	150	315	575	575	625	940	225	235	315	550	373
WL -BS200-125	200	125	315	575	575	625	940	225	235	315	550	373
WL-BS250-250	250	250	400	550	550	700	1050	280	260	290	550	450
WL-BS250-200	250	200	400	550	550	700	1050	280	260	290	550	450
WL-BS250-150	250	150	400	550	550	700	1050	280	260	290	550	450
WL-BS300-300	300	300	400	700	700	780	1200	320	340	380	720	503
WL-BS300-250	300	250	400	700	700	780	1200	320	340	380	720	503

SFPF SERIES STAINLESS STEEL STRAINER

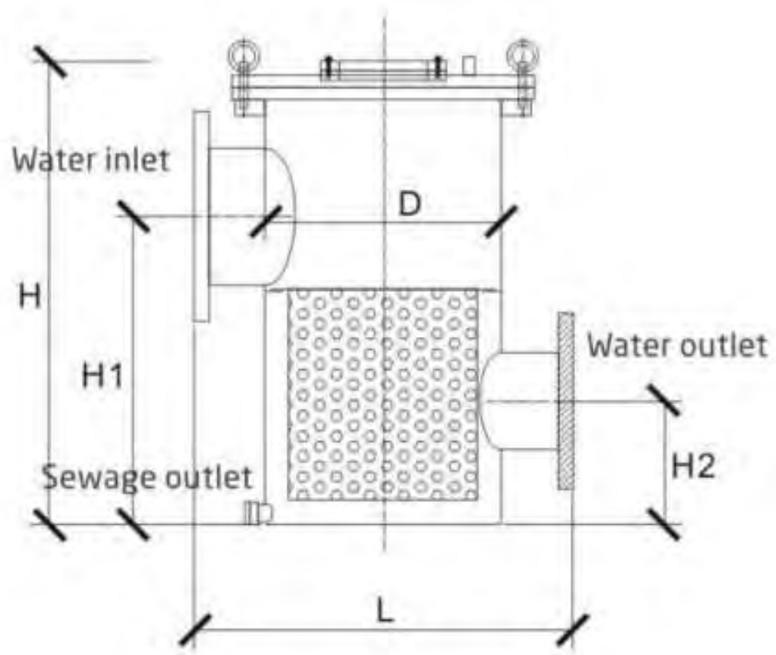
Basket strainer is used as pre-filter to remove hair, fiber and large suspended solids in water, to protect the pump and ensure the normal operation of the whole water treatment system.

Operating principle:

The strainer is equipped with a built in filter basket. When the raw water passes through, the solid impurity particles are blocked in the strainer and the clean water flows out. The bottom provided with a sewage outlet, the debris, hair, fibers and other big impurities could be drained from here, and the filter basket can be removed from inside for cleaning.

Features:

- Quick open design.
- Clear lid with easy access allows for simple visibility of debris.
- Stainless steel filter basket, easy for cleaning.
- Total area of filter tube hole: more than 2.5 times of cross-section area of connecting pipe.



Product parameters

Model	Diameter D(mm)	Height H(mm)	Height of water inlet H1(mm)	Height of water outlet H2(mm)	Water inlet size DN(mm)	Water outlet size DN(mm)	Width L(mm)
WL-SFPF219	219	550	350	150	80	50-80	419
WL-SFPF273	273	600	400	200	100	65-100	473
WL-SFPF273	273	600	400	200	125	65-125	473
WL-SFPF273	273	600	400	200	150	80-150	473
WL-SFPF300	300	700	450	200	125	80-125	500
WL-SFPF300	300	700	450	200	150	100-150	500
WL-SFPF350	350	750	530	230	150	100-150	550
WL-SFPF350	350	750	530	230	200	150-200	550
WL-SFPF400	400	750	550	250	200	150-200	600
WL-SFPF400	400	750	550	250	250	150-250	600
WL-SFPF450	450	800	550	250	250	200-250	650
WL-SFPF500	500	900	600	300	300	250-300	700
WL-SFPF600	600	1100	750	350	400	300-400	800

SSPE SERIES STAINLESS STEEL STRAINER

Basket strainer is used as pre-filter to remove hair, fiber and large suspended solids in water, to protect the pump and ensure the normal operation of the whole water treatment system.

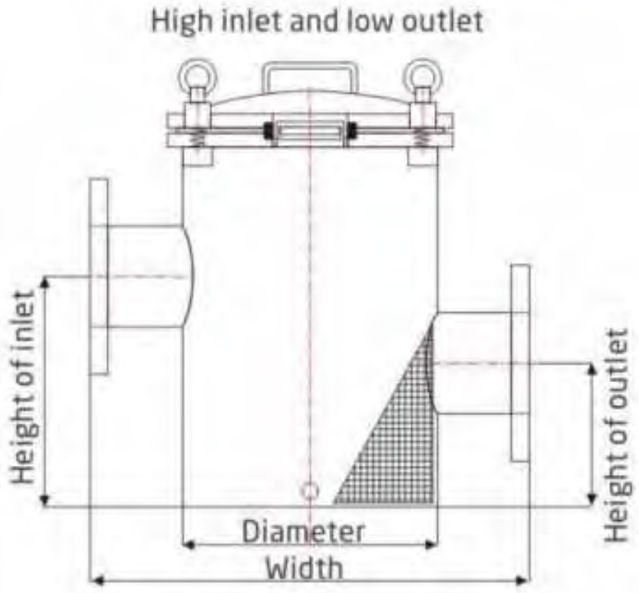
Operating principle:

The strainer is equipped with a built in filter basket. When the raw water passes through, the solid impurity particles are blocked in the strainer and the clean water flows out. The bottom provided with a sewage outlet, the debris, hair, fibers and other big impurities could be drained from here, and the filter basket can be removed from inside for cleaning.

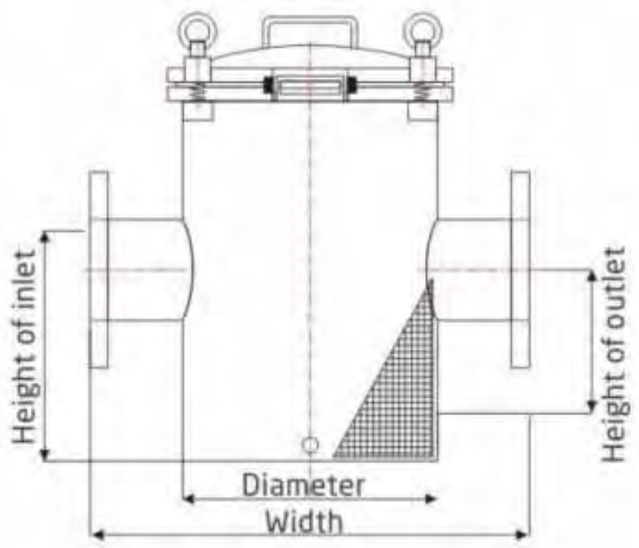
Features:

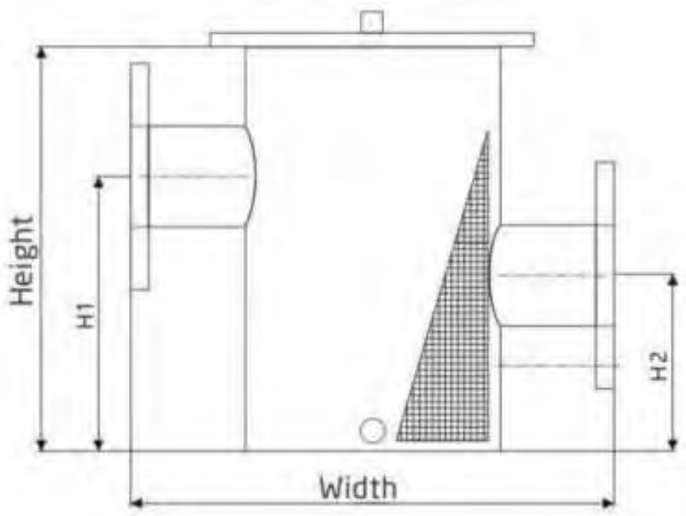
- Stainless steel body and filter basket, high strength and corrosion resistance, suitable for seawater environment.
- Quick open design, convenient for cleaning and maintenance.
- Standard flange connection for easy installation.
- Clear lid with easy access allows for simple visibility of debris.
- Customizable dimensions and features.

High inlet and low outlet



Parallel inlet and outlet





High inlet and low outlet type

Model	Diameter D(mm)	Height H(mm)	Height of water inlet H1(mm)	Height of water outlet H2(mm)	Water inlet size DN(mm)	Water outlet size DN(mm)	Width L(mm)
WL-SSGF159	159	250	165	85	DN32	DN32	359
WL-SSGF159	159	250	165	85	DN40	DN40	359
WL-SSGF159	159	250	165	85	DN50	DN50	359
WL-SSGF219	219	350	230	120	DN65	DN65	419
WL-SSGF219	219	350	230	120	DN80	DN80	419
WL-SSGF273	273	400	265	135	DN100	DN100	473
WL-SSGF273	273	400	265	135	DN125	DN125	473
WL-SSGF273	273	400	265	135	DN150	DN150	473
WL-SSGF325	325	490	330	160	DN200	DN200	525
WL-SSGF400	400	520	340	160	DN250	DN250	600

Parallel inlet and outlet type

Model	Diameter D(mm)	Height H(mm)	Height of water inlet H1(mm)	Height of water outlet H2(mm)	Water inlet size DN(mm)	Water outlet size DN(mm)	Width L(mm)
WL-SSPF159	159	250	125	125	DN32	DN32	359
WL-SSPF159	159	250	125	125	DN40	DN40	359
WL-SSPF159	159	250	125	125	DN50	DN50	359
WL-SSPF219	219	350	175	175	DN65	DN65	419
WL-SSPF219	219	350	175	175	DN80	DN80	419
WL-SSPF273	273	400	200	200	DN100	DN100	473
WL-SSPF273	273	400	200	200	DN125	DN125	473
WL-SSPF273	273	400	200	200	DN150	DN150	473
WL-SSPF325	325	490	246	246	DN200	DN200	525
WL-SSPF400	400	520	260	260	DN250	DN250	600

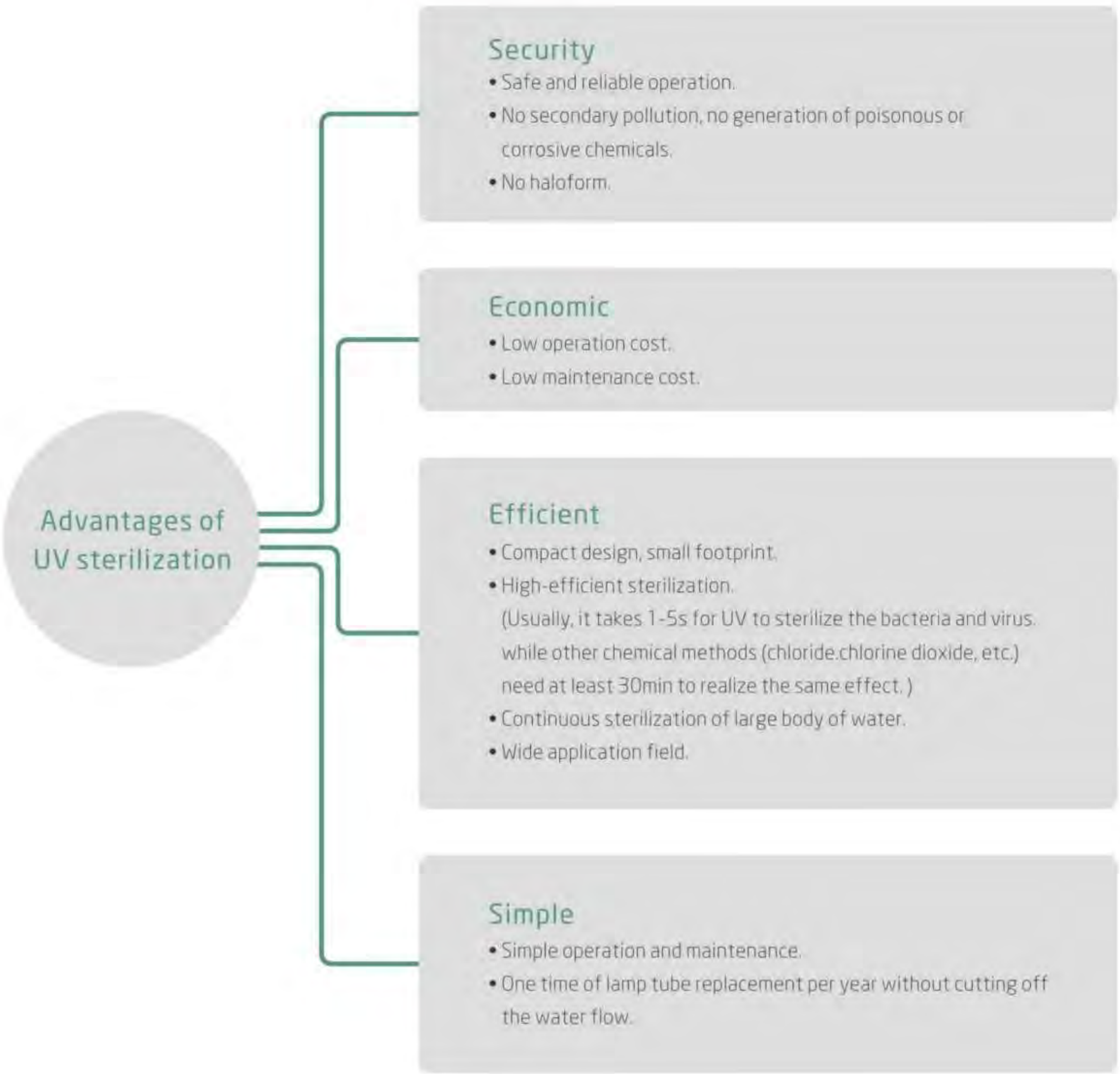
UV DISINFECTION

Utilize the ultraviolet light between 200-300nm to penetrate the cell membrane and nucleus of various viruses, bacteria and other pathogenic microorganisms in water, destroying the DNA structure of the microorganisms, and cause them to lose their replication ability or activity and die.

UV STERILIZER

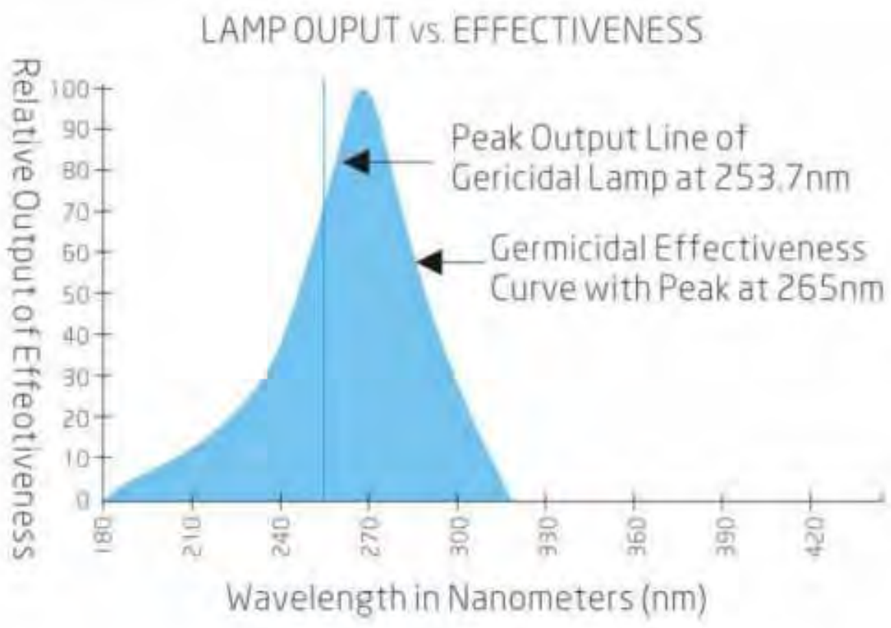
UV sterilizer realizes the purpose of water sterilization by radiating microorganisms. After the protein, RNA and DNA of microorganisms absorbing the energy of UV, the UV (254nm) can polymerize the base pair of DHA of microorganisms to prevent protein synthesis and reproduction of microorganisms, as a result, cells will die and the sterilization purpose is realized. During the sterilization process, UV will not produce any by-products.

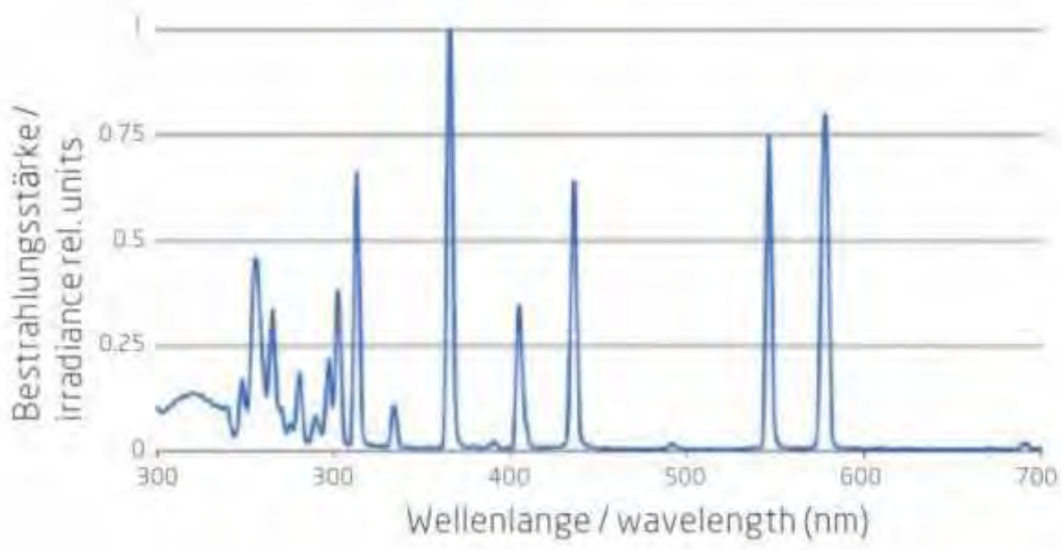
ADVANTAGES OF UV STERILIZATION:



Classification of UV lamp

	Low-pressure UV lamp	Medium pressure UV lamp
	Internal air pressure <103Pa, narrow band output, power of a lamp tube < 500W.	Medium pressure UV lamp Internal air pressure 104~106Pa, multispectral continuous UV output, maximum power of a lamp tube7000W.
Requirement of water temperature: ≤35℃		Requirement of water temperature: ≤60℃
Penetrate and damage DNA of bacteria, virus and various microorganisms to realize an ideal sterilization effect.		The sterilization effect is stronger than low voltage and chloramines and urea can be decomposed effectively.
Life-span of lamp tube: 9000-13000 hours		Life-span oflamp tube: 4000~5000 hours
Costs are low. It is widely applied to air purification, water purification and sewage sterilization		Costs are high. Characterized by a high power and strong UV, it is especially applicable to the sterilization of a large flow of water

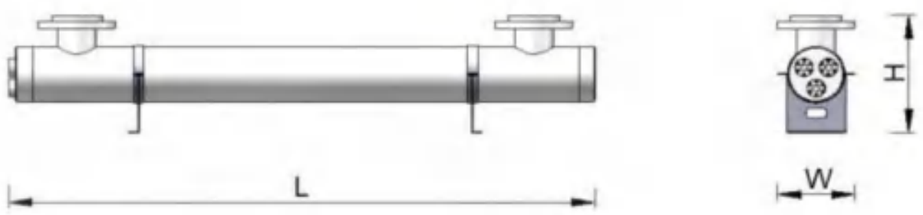




UVWH SERIES UV STERILIZER FOR SEAWATER

Features:

- The reaction chamber is made of high-quality HDPE material, with excellent anti-aging, acid &alkali resistance, and corrosion resistance.
- Safe and efficient, no secondary pollution, no harmful side reactant.
- Adopts imported ultraviolet lamps from Europe or America and high-quality electronic ballasts.
- The control box is made of carbon steel, and stainless steel is optional.
- The control box has the display function of cumulative working time.
- The control box is equipped with lamp working status indicator and fault alarm buzzer.
- The control box uses a built-in fan for cooling.
- The reaction chamber is equipped with a sewage discharge outlet.
- The water inlet and outlet directions of the reaction chamber can be customized.
- UV light intensity monitor, water temperature sensor and water pressure sensor is optional.
- Efficiency of UV disinfection (UV dose: 30mJ/cm^2).



Product parameters

Model	Design Flow Rate (m^3/h) @30mj/cm^2	UV Lamp W/Quantity	Power (W)	Tube Life (H)	Power Supply	Working Pressure (Mpa)	Water Temperature (℃)	Inlet/Outlet (Flange)	Reator Size L x W(Φ) x H (mm)
WL-UVWH40	5	40W×1	40	8000	230VAC,50/60Hz	0.4	5-40	1.5"	980×225×310
WL-UVWH80	8	40W×2	80	8000	230VAC,50/60Hz	0.4	5-40	2"	980×225×310
WL-UVWH120	12	40W×3	120	8000	230VAC,50/60Hz	0.4	5-40	2"	980×225×310
WL-UVWH160	16	40W×4	160	8000	230VAC,50/60Hz	0.4	5-40	2.5"	980×225×310
WL-UVWH240	25	80W×3	240	8000	230VAC,50/60Hz	0.4	5-40	2.5"	980×225×310
WL-UVWH320	32	80W×4	320	8000	230VAC,50/60Hz	0.4	5-40	3"	980×225×310
WL-UVWH400	40	80W×5	400	8000	230VAC,50/60Hz	0.4	5-40	3"	980×280×400
WL-UVWH480	45	120W×4	480	9000	230VAC,50/60Hz	0.4	5-40	4"	1210×225×310
WL-UVWH600	55	120W×5	600	9000	230VAC,50/60Hz	0.4	5-40	4"	1210×280×400
WL-UVWH720	65	120W×6	720	9000	230VAC,50/60Hz	0.4	5-40	4"	1210×280×400
WL-UVWH775	70	155W×5	775	9000	230VAC,50/60Hz	0.4	5-40	4"	1670×285×400
WL-UVWH840	75	120W×7	840	9000	230VAC,50/60Hz	0.4	5-40	6"	1210×280×400
WL-UVWH930	85	155W×6	930	9000	230VAC,50/60Hz	0.4	5-40	6"	1670×285×400
WL-UVWH1085	100	155W×7	1085	9000	230VAC,50/60Hz	0.4	5-40	6"	1670×340×500
WL-UVWH1280	110	320W×4	1280	16000	230VAC,50/60Hz	0.4	5-40	6"	1670×285×400
WL-UVWH1600	125	320W×5	1600	16000	230VAC,50/60Hz	0.4	5-40	6"	1670×285×400
WL-UVWH1920	150	320W×6	1920	16000	230VAC,50/60Hz	0.4	5-40	6"	1670×580×630
WL-UVWH2240	175	320W×7	2240	16000	230VAC,50/60Hz	0.4	5-40	8"	1670×580×630
WL-UVWH2560	200	320W×8	2560	16000	230VAC,50/60Hz	0.4	5-40	8"	1670×580×630
WL-UVWH2880	225	320W×9	2880	16000	230VAC,50/60Hz	0.4	5-40	8"	1670×580×630
WL-UVWH3520	330	320W×11	3520	16000	230VAC,50/60Hz	0.4	5-40	10"	1670×700×700

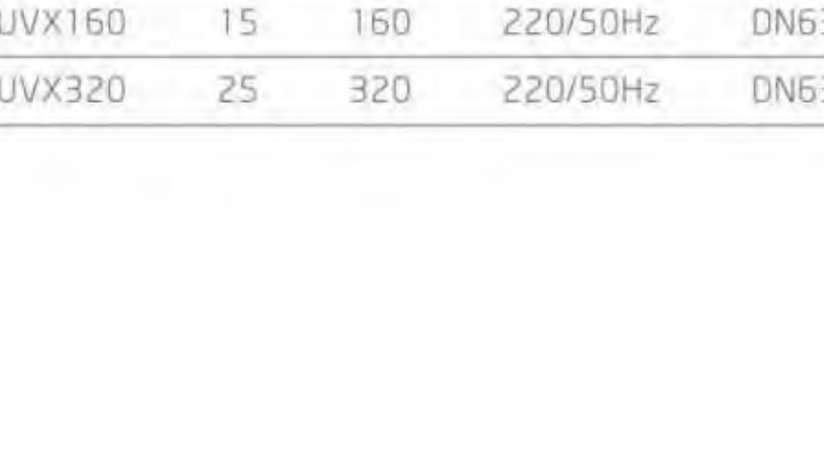
UVX SERIES UV STERILIZER

Specially designed for sea water environment. The housing is made of high quality PVC, which is anti-corrosion and durable. Equipped with UV-C lamp and high purity quartz sleeves for high efficient and long term sterilization. The disinfection process is fully closed, with sound and light alarm device, no chemical reaction and by-products.

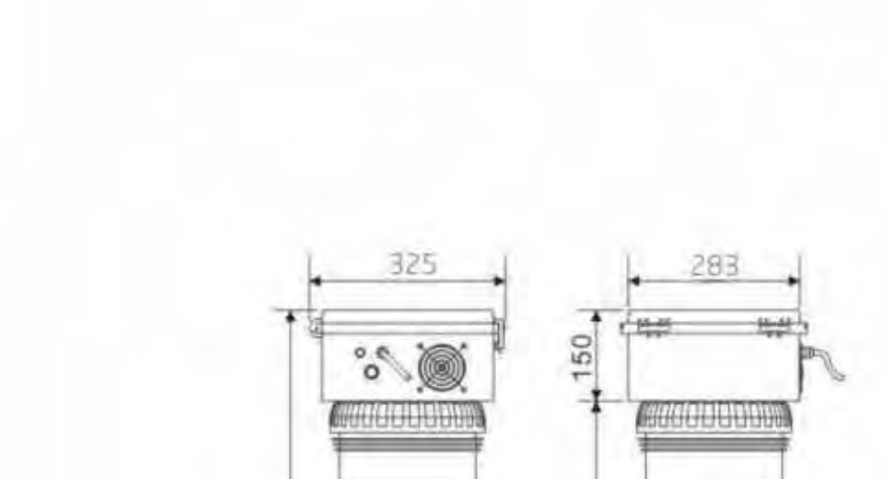
Advantages:

- High quality UV-C lamp which can achieve 99% sterilization rate.
- Stable and accurate dosage, service life of lamp is more than 10,000 hours.
- Excellent quartz tube provides transmittance over 99%.
- Safe and reliable operation, simplified operation and reduced maintenance.

Model	Flow rate (m^3/h)	Total power (W)	Voltage (V)	Connection size (mm)
WL-UVX46	5	46	220/50Hz	DN63
WL-UVX92	8	92	220/50Hz	DN63
WL-UVX160	15	160	220/50Hz	DN63
WL-UVX320	25	320	220/50Hz	DN63



WL-UVX46, WL-UVX92



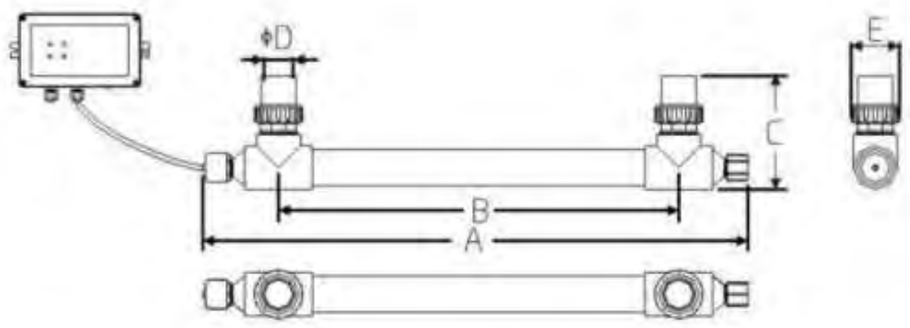
WL-UVX160, WL-UVX320

UVD SERIES UV STERILIZER

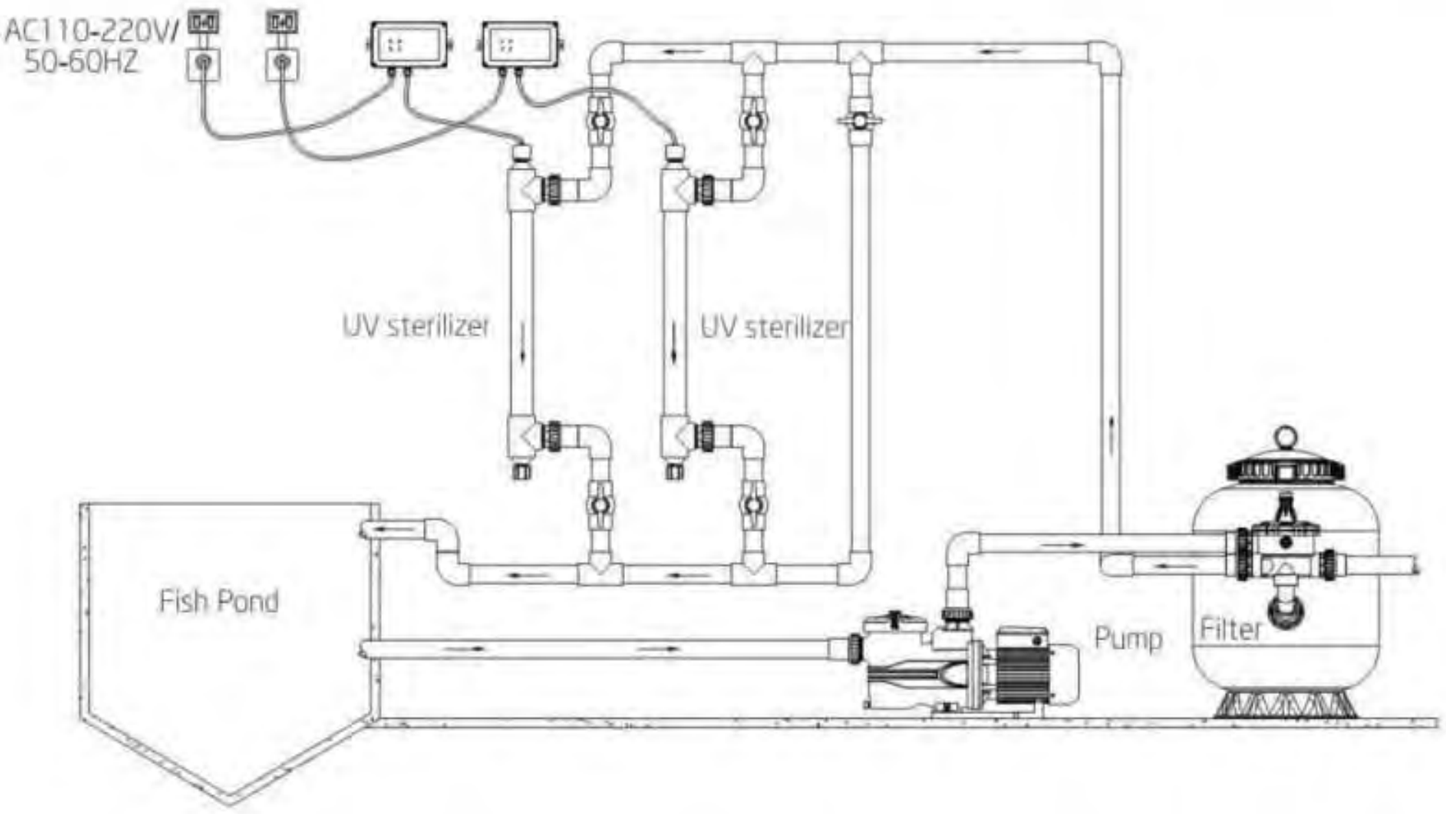
UV sterilizer is an effective product to destroy the genetic structure of bacterial and viruses, and inhibits their ability to multiply, rendering them harmless.

Features:

- High quality UV-C lamp that achieve 98% sterilization rate
- Durable UV-C lamp more than 8,000 hours life time
- High quality quartz Sleeve has more than 90%transmittance rate
- Available in 50Hz or 60Hz when request.
- Application in swimming pool and fish pond



A(mm)	900	900	1055	1200
B(mm)	662	662	817	962
C(mm)	235	235	235	235
E(mm)	101	101	101	101



Model	Power (W)	Flow rate (m^3/h)	Voltage V	Lamp quantity	Pipe size (inch/mm)	Fish pond volume (m^3)	Pool volume (m^3)
WL-UVD40	40	5	220	1	1.5" 50mm	15	30
WL-UVD80	80	8	220	1	1.5" 50mm	24	48
WL-UVD100	100	10	220	1	1.5" 50mm	30	60
WL-UVD120	120	12	220	1	1.5" 50mm	36	72

UVC SERIES UV STERILIZER

Ultraviolet is accepted all over the world as a reliable, cost-effective and above all environmentally friendly aquarium water disinfection solution.

UV-C radiation destroys the genetic structure of bacteria and viruses, and inhibits their ability to multiply, rendering them harmless.

Features:

- Physical sterilization, no side effects, no secondary pollution.
- Simple, efficient, small occupation.

Thread connection

WL-UVC series full flow ultraviolet disinfectant device uses a special made high power ozone free ultraviolet germicidal lamp. The device is also equipped with a micro carbon austenite stainless steel barrel with a specially processed interior, while the exterior of the barrel is also specially polished. The result of this is the water passing the barrel would be radiated and receive 253.7nm (UVC) of ultraviolet with passing through the barrel, providing a excellent disinfectant effect.

Features:

- The reactor use 304 polished stainless steel, the smooth interior leaves no blind spot for sterilization.
- The ultraviolet light tube is equipped with a quartz sleeve, to ensure optimal working temperature.
- The electrical configuration of the device is suitable to most electrical specifications.
- Special exterior design makes the device convenient to use.
- All rounded sterilization, highly efficient, sterilization rate up to 99.9%.
- High output, physical sterilization, no side effects, no secondary pollution.
- The amount of water that can be sterilized ranges from 5.5-250T/H. The device adapts to swimming pools, spa and water parks of various sizes.

Flange connection

Product parameters

Model	Power (W)	Rated flow (m^3/h)	Working voltage (V)	Cabinet	Cabinet size L×D×H (mm)	Control box		Lamp power W x Qty	Inlet & outlet diameter DN
						With/ without	Material		
WL-UVCn-78	78	5.5	220V/50Hz	304SS	930×108×720	With	Painted carbon steel	39W×2	DN32 screw
WL-UVCn-160	160	12	220V/50Hz	304SS	930×108×720	With	Painted carbon steel	80W×2	DN50 screw
WL-UVC-240	240	20	220V/50Hz	304SS	930×159×780	With	Painted carbon steel	80W×3	DN65
WL-UVC-320	320	25	220V/50Hz	304SS	930×159×780	With	Painted carbon steel	80W×4	DN80
WL-UVC-465	465	35	220V/50Hz	304SS	1630×219×830	With	Painted carbon steel	155W×3	DN100
WL-UVC-620	620	45	220V/50Hz	304SS	1630×219×830	With	Painted carbon steel	155W×4	DN80 or 100
WL-UVC-775	775	60	220V/50Hz	304SS	1630×219×1080	With	Painted carbon steel	155W×5	DN150
WL-UVC-930	930	80	220V/50Hz	304SS	1630×325×1180	With	Painted carbon steel	155W×6	DN150
WL-UVC-1280	1280	90	220V/50Hz	304SS	1630×325×1180	With	Painted carbon steel	320W×4	DN150
WL-UVCP-1085	1085	100	220V/50Hz	304SS	1630×325×1180	With	Painted carbon steel	155W×7	DN150
WL-UVCP-1395	1395	125	220V/50Hz	304SS	1630×325×1200	With	Painted carbon steel	155W×9	DN150
WL-UVCP-1600	1600	110	220V/50Hz	304SS	1630×325×1400	With	Painted carbon steel	320W×5	DN150
WL-UVCP-1705	1705	150	220V/50Hz	304SS	1630×325×1500	With	Painted carbon steel	155W×11	DN200
WL-UVCP-1920	1920	130	220V/50Hz	304SS	1630×325×1500	With	Painted carbon steel	320W×6	DN150
WL-UVCP-2240	2240	150	220V/50Hz	304SS	1630×377×1500	With	Painted carbon steel	320W×7	DN200
WL-UVCP-2560	2560	180	220V/50Hz	304SS	1630×377×1500	With	Painted carbon steel	320W×8	DN200
WL-UVCP-2880	2880	200	220V/50Hz	304SS	1630×377×1500	With	Painted carbon steel	320W×9	DN200
WL-UVCP-3840	3840	250	220V/50Hz	304SS	1630×426×1500	With	Painted carbon steel	320W×12	DN250

Note: • Lamp service life ≥9000H

- UVCn: thread connection; UVC: flange connection; UVCP: flange connection; all the control box are painted carbon steel.
- Can be equipped with manual cleaning device, automatic flushing device, or advanced online monitoring instrument and remote control system.

OZONE DISINFECTION

Ozone generation methods based on the principle can be classified into photochemical function, electrochemical function, atomic radiation and corona discharge. Wherein, corona discharge is widely applied to ozone generator. The basic principle of generating ozone with the corona discharge method is the ozone generator which consists of one pair of electrodes, dielectric and discharging gap. When AC high voltage is imposed to two electrodes, high-speed electrons and oxygen molecules impact with each other, corona discharge occurs in the gap under the action of external high energy, oxygen gases are ionized, concentration of oxygen ions in the gap increases significantly, oxygen ions and oxygen molecules react with each other to generate ozone. The generation process is also a process of thermal reaction where heat energy is released.

With the help of the strong oxidation ability of ozone, the cell wall and RNA of bacteria are destructed, and DNA, RNA, protein, lipid, polysaccharide and other macromolecular polymers are decomposed. It can penetrate into the cell membrane tissue to cause permeability distortion of cells, resulting in decomposition and death of cells. In addition, the DNA, bacterial parasites and other contents in the dead bacteria can be decomposed and killed, so as to achieve the purpose of sterilization.

OZONE GENERATOR

Unique ozone-resistant double-pipeline design, using large-scale IGBT integration technology, titanium dehydroxylated quartz structure or dehydroxylated quartz structure, with stable performance, high efficiency, long service life.

WL-B-40G WL-B-50G
WL-B-60G WL-B-80G
WL-B-100G

WL-B-150G WL-B-200G
WL-B-300G WL-B-400G
WL-B-500G WL-B-600G

Features:

- The device alarms when there is no ozone generation and returns to normal after ozone generating, indicating whether the discharge unit is working normally.
- Over-temperature alarm and shutdown protection, when the temperature is below 50 degrees, it will automatically resume work and stop the alarm.
- Water return alarm. Shut down the device and blowing it dry with oxygen or dry air, the alarm stops after 3 seconds after turning it on again.
- Circuit failure alarm.

Product parameters

Model	Ozone output (g)	power (W)	Power Supply	Weight (kg)	Dimension (mm)	Cooling Mode	Max. Ozone Concentration (g/m³)	Gas Source
WL-B-40G	40	600	220V/50Hz	26	400×300×950	Water Cooling 0.2~0.5m³/h	Oxygen Source: 50~100 Air Source: 16~30	Use oxygen (bottled oxygen or oxygen generator) as the gas source; or use a clean, dry air source.
WL-B-50G	50	600	220V/50Hz	26	400×300×950			
WL-B-60G	60	1000	220V/50Hz	50	520×370×1150	Water Cooling 0.3~1.0m³/h		
WL-B-80G	80	1200	220V/50Hz	50	520×370×1150			
WL-B-100G	100	1300	220V/50Hz	85	770×500×1200			
WL-B-150G	150	1800	220V/50Hz	90	770×500×1200	Water Cooling 0.5~1.5m³/h		
WL-B-200G	200	2500	220V/50Hz	95	770×500×1200			
WL-B-300G	300	3200	220Vor 380V/50Hz	120	800×600×1450	Water Cooling 1~2m³/h	Oxygen Source: 50~120 Air Source: 16~35	
WL-B-400G	400	4500	220Vor 380V/50Hz	150	800×600×1450			
WL-B-500G	500	5500	220Vor 380V/50Hz	200	1200×600×1450	Water Cooling 1~3m³/h		
WL-B-600G	600	6500	220Vor 380V/50Hz	200	1200×600×1450			

INTEGRATED OZONE GENERATOR

Features:

- With built-in oxygen generator, uses the oxygen molecules as the adsorbent, separates the oxygen and nitrogen in the air by the pressure swing adsorption(PSA), and filters out the harmful substances in the air.
- Adopts titanium dehydroxylated quartz structure or dehydroxylated quartz structure, with stable performance, high efficiency, long service life.
- Adjustable ozone output and low noise.
- Easy to operate and continuous ozone production.

Product parameters

Model	Ozone output (g)	Oxygen Production Capacity (L/min)	Total power (W)	Power supply (V/Hz)	Dimension (mm)
WL-D-6G	6	3~4	400	220/50	500×390×1200
WL-D-10G	10	3~4	400	220/50	500×390×1200
WL-D-15G	15	5	420	220/50	500×390×1200
WL-D-20G	20	5	450	220/50	500×390×1200
WL-D-32G	32	6~10	600	220/50	500×390×1200
WL-D-40G	40	8~13	1100	220/50	500×1300×1700
WL-D-60G	60	8~13	1300	220/50	500×1300×1700

INTEGRATED OZONE GENERATOR

This series of integrated all-in-one ozone generator, complete with a booster pump and gas source for easy installation and operation. Features a connectable DTA non-glass discharge body, delivering high ozone output and concentration. With specially designed gas source treatment technology, our ozone generator ensures reliable performance, exceptional operational stability, and an extended service life.

Features:

- The outer electrode tube is made of SS316L, and the discharge body uses imported dielectric coating materials.
- Adopting specialized discharge technology with high adaptability.
- Special gas source processing method, high drying efficiency and good quality of gas source.
- The special enamel discharge body has high strength, excellent heat resistance and pressure resistance, making it easy to maintain.
- Adjustable ozone production, high ozone concentration, high production, more stable performance and longer life of the equipment.
- With operation monitoring and protection functions such as current, voltage, temperature, flow rate, gas pressure and operation status.
- Manual and automatic control modes are available, can be selected according to the usage.

Product parameters

Model	Ozone output (g)	Ozone concentration (mg/h)	Cooling water flow rate (m^3/h)	Power supply (V/Hz)	Average operating Power (kW)	Inlet and outlet size	Dimension (mm)
WL-CF-G-10	10	≥25	0.04	220/50	1.42	G1"	1050×600×1570
WL-CF-G-20	20	≥25	0.08	220/50	2.07	G1-1/4"	1050×600×1570
WL-CF-G-30	30	≥100	0.06	220/50	1.48	G1"	1300×600×1570
WL-CF-G-40	40	≥100	0.08	220/50	1.64	G1"	1300×600×1570
WL-CF-G-50	50	≥100	0.10	220/50	1.83	G1"	1400×600×1570
WL-CF-G-60	60	≥100	0.12	220/50	2.43	G1-1/4"	1400×600×1570
WL-CF-G-80	80	≥100	0.16	220/50	3.26	G1-1/4"	1400×800×1700
WL-CF-G-100	100	≥100	0.20	220/50	3.46	G1-1/4"	1400×800×1700

ADVANCED OXIDATION PROCESS

Unique hydroxyl radical technology, sterilization rate is up to 99.99% .

Overview:

LASWIM AOP advanced oxidation and disinfection machine is an advanced oxidation and disinfection equipment, which combines ozone and ultraviolet disinfection organically, so that ozone is catalyzed by ultraviolet light to form various free radicals, including hydroxyl radicals, so that most organic matter generates CO_2 and water to solve the toxic and non-biodegradable substances in the water body.

Advanced technology and excellent disinfection ability make the AOP advanced oxidation disinfection machine become the current advanced water disinfection and purification system, it is also an ideal choice for aquarium and aquaculture water disinfection.

QUALITY STANDARDS:
ISO 9001:2015

Features:

- Integrated structure, easy to install, saves space in the equipment room.
- Ozone safely generated and injected under a vacuum negative pressure operation mode.
- Significantly disinfects chlorine-resistant microorganisms, effectively reduces the free chlorine content in pool water, reduces irritation of human skin and respiratory tract.
- Segregated ozone and UV reactors.
- Built-in independent exhaust gas treatment module and exhaust pipe, can decompose excess ozone gas, to ensure the safety of the server room.
- High-intensity low-pressure UV lamp with a service life of up to 8,000hours.
- The air-cooling system has a remarkable heat dissipation effect, protecting the normal operation of ozone components and extending its service life.
- Manual and automatic mode control.

Material:

- House: mild steel coated with epoxy resin
- Ozone module: quartz tube +316 stainless steel electrode assembly

Extensive sterilization:

Microbacteria, Clostridium botulinum, Bacillus, Enterobacteriaceae, Escherichia coli, Erysipelas, Bacillus spores, Staphylococcus, Filtration Virus and Poliovirus.

Other functions:

algae removal, removal of inorganic matter, removal of suspended matter, rich in dissolved oxygen, activation of minerals.

Applications Of AOP:

High-end public swimming pools

Aquarium

Land-based aquaculture plant

AOP products technical advantages:

Super sterilization: AOP (Advanced oxidation process) is the organic combination of ozone gas and ultraviolet, with ozone, ultraviolet high efficiency, broad spectrum sterilization characteristics, is stubborn bacteria viruses and a variety of pathogens, through the rapid destruction of bacteria, virus DNA or RNA molecular structure, resulting in growth or regenerative cell death, to achieve sterilization, disinfection effect. The killing rate is 99.99%, which completely ensures the water quality and health, and avoids cross infection.

Powerful water purification	Inactivation of chlorine-resistant microorganisms such as viruses, amoebas, cysts and other chlorine-resistant microorganisms and pathogens, AOP provides excellent inactivation of pathogens and reduces free chlorine residues.
Comfortable environment	The UV rays of AOP photochemically destroy residual ozone in water, eliminating the need for additional ozonation equipment. Ozone effectively reduces the content of trihalomethanes (THM) and rapidly eliminates organic matter. It also improves water clarity and ambient air quality.
Safe and harmless	AOP is a unique and free of harmful chemicals technology, safe operation in vacuum conditions, is the achievements of more than 30 years of water treatment experience, in the disinfection process, no additional chemicals are added, discard the irritating smell of traditional chlorine disinfection, while destroying chloramines, and providing a safe and secure water environment.
Degradation ability	AOP (Advanced Oxidation Process) can form hydroxyl radicals, oxidize and decompose most microorganisms and organic matter into CO_2 and water, and can completely decompose and degrade microorganisms and organic matter in water.

Product parameters

Model	AOP 100	AOP 200	AOP 300	AOP 400
Water volume	100m^3	200m^3	300m^3	400m^3
Oxidezer production	5g/h	8g/h	12.5g/h	16.5g/h
Feed Gas	3L/min	3L/min	5L/min	5L/min
UV dose	30mj/cm^2(8h)	30mj/cm^2(8h)	30mj/cm^2(8h)	30mj/cm^2(8h)
Power supply	220V/1P/50Hz	220V/1P/50Hz	220V/1P/50Hz	220V/1P/50Hz
Power consumption	1.1 kW	1.2 kW	1.5 kW	1.6 kW
Dimensions (Lx Wx H)	700*620*1775mm	700*620*1775mm	850*800*1800mm	850*800*1800mm
Net weight	184 kg	189 kg	250 kg	255 kg
Bypass flow rate	5m^3/h	8m^3/h	12.5m^3/h	16.5m^3/h
Inlet size	1.25 inch	1.25 inch	2 inch	2 inch
Outlet size	1.25 inch	1.25 inch	2 inch	2 inch
Method	Air cooling	Air cooling	Air cooling	Air cooling
Gas feeding	Oxygen source	Oxygen source	Oxygen source	Oxygen source
Material	epoxy coated mild steel	epoxy coated mild steel	epoxy coated mild steel	epoxy coated mild steel

OZONE OFF GAS DESTRUCTOR

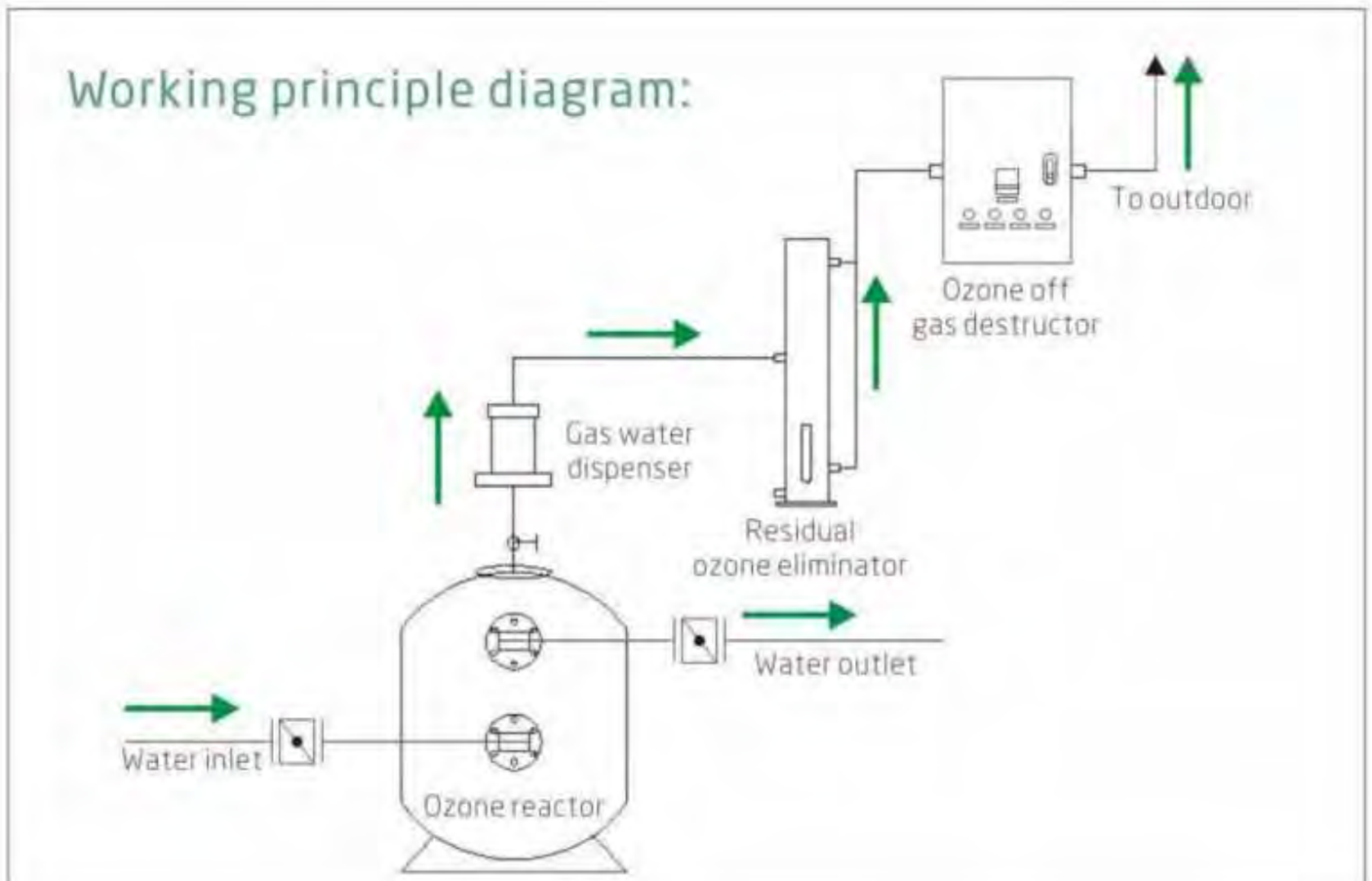
In ozone water treatment systems, not all of the ozone is transferred to the water and escapes. Ozone gas is highly oxidizing. In addition to causing damage to the surrounding equipment and instrument, ozone gas will also pollute the environment, stimulate the human respiratory system, and be harmful to human health. Therefore, ozone off gas that have not been fully absorbed need to be destroyed and decomposed before being discharged into the air.

LASWIM ozone off gas destructor uses ternary catalytic technology to eliminate residual ozone off gas, it converts ozone into oxygen rapidly and without emitting any toxic gases, such as carbon monoxide or carbon dioxide. The body is made of 304 stainless steel, which has strong resistance to ozone corrosion.

Working principle:

Using the principle of ternary catalysis to achieve the effect of removing ozone by heating (temperature control) .

Working principle diagram:



Product parameters

Model	Power(W)	Heating temperature range (℃)	Applicable for ozone generator
WL-OGD250	250	250-280	Ozone output≤50g/h
WL-OGD500	500	380-400	Ozone output≤100g/h

OXYGEN SYSTEM

OXYGENATION COLUMN

The oxygenation column are designed to optimize the saturation of gases in water, and can obtain gas transfer efficiencies of up to 100%. The operation of the cone is simple: water and gas (either pure oxygen, ozone or other gas) enter from the top where the velocity is reduced as the body of the vessel expands. As the water moves to the bottom of the vessel, the gas rises to the top and is constantly sheared. The undissolved gas keeps returning to the top, and when adjusted properly, only water without bubbles can exit the bottom. At higher pressures, the dissolved oxygen concentration could be increased significantly above saturation.

Oxygenerator OX3 (3-LPM)

Product parameters

Model	Oxygen output (L/min)	Rated power (W)	Inlet pipe size	Drain pipe size	Dissolved oxygen in water (DO)
OX3	3	260	DN25/DN50	DN50/DN80	8-14ppm (controlled by source water DO)
OX5	5	400	DN25/DN50	DN50/DN80	8-14ppm (controlled by source water DO)
OX10	10	700	DN25/DN50	DN50/DN80	8-14ppm (controlled by source water DO)
OX20	20	1200	DN25/DN50	DN50/DN80	8-14ppm (controlled by source water DO)

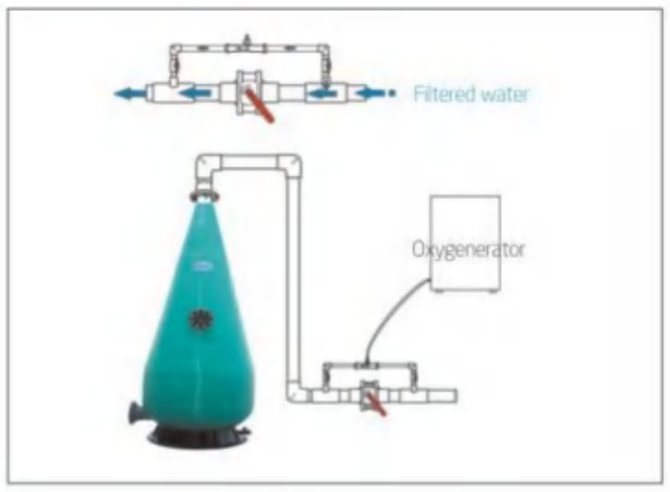
FZ SERIES OXYGENATION CONE

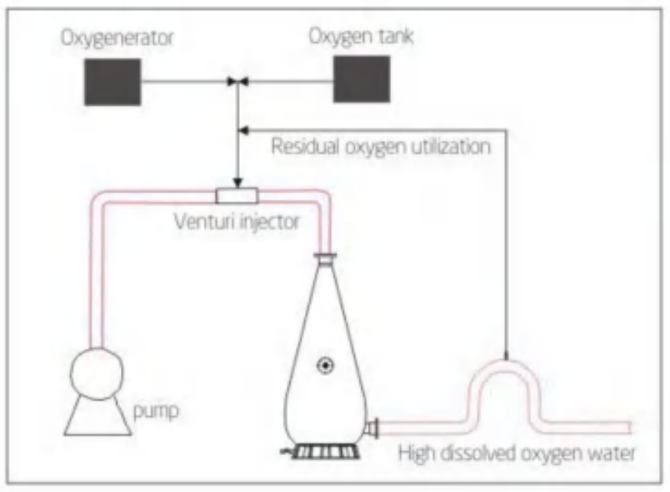
Oxygenation cone are also called oxygen cone, which is a conical vessel designed to reinforce the process of oxygen gas mixing and saturation into the water, especially for high-density industrial aquaculture. It is made of high-quality FRP composite polyester material, has good chemical corrosion resistance, sun protection and UV resistance. The outer layer is made of winding and reinforced production technology, which is strong and safe. Oxygen cone is one of the main technologies commonly used in industrialized aquaculture to control dissolved oxygen in the water efficiently and effectively, achieve the best oxygen gas-water mixing through a simple operation.

Applications

Large-scale land-based aquaculture farms, seawater nursery farms, large-scale aquaculture temporary bases, public aquariums, commercial aquariums, sewage treatment plants, gas and liquid dissolution or reaction in chemical industry.

Installation diagram





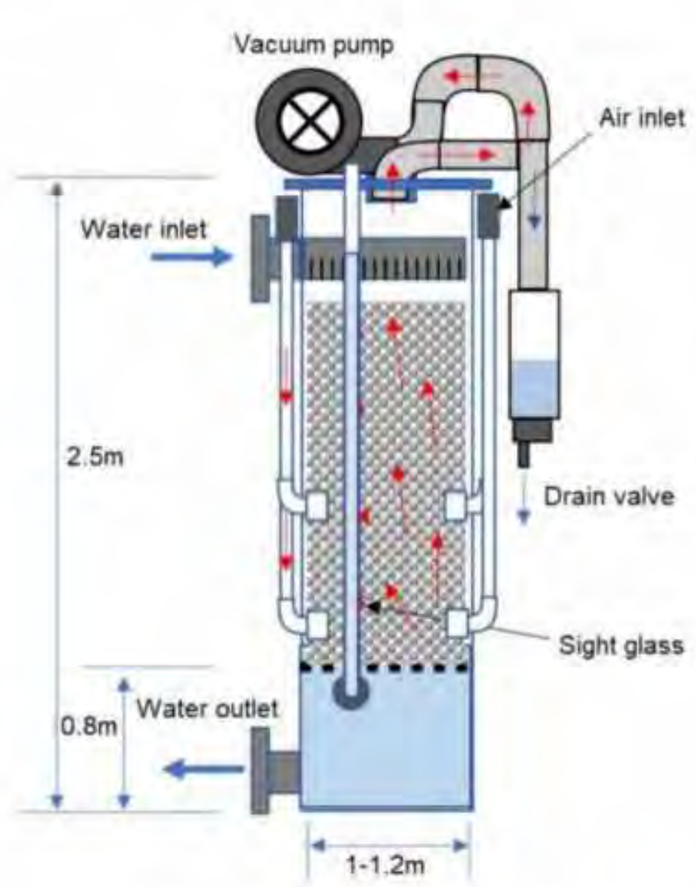
Product parameters

Item NO.	Model	Diameter D (mm)	Height H(mm)	Inlet and outlet diameter (mm)	Design max. flow rate (t/h)	Air Pressure (PSI)	Dissolved oxygen rate @20℃ (kg/h)	Outlet water dissolved oxygen (kg/h)
603101	FZ4010	ϕ400	1050	2"/63mm flange	8	20	1	65
603102	FZ4013	ϕ400	1300	2"/63mm flange	10	20	1	65
603103	FZ5012	ϕ500	1200	2"/63mm flange	12	20	1.2	65
603104	FZ6015	ϕ600	1520	2"/63mm flange	15	20	1.2	65
603105	FZ7017	ϕ700	1700	3"/90mm flange	25	20	1.5	65
603106	FZ8019	ϕ800	1900	3"/90mm flange	30	20	1.8	65
603107	FZ8523	ϕ850	2250	3"/90mm flange	35	20	2	65
603108	FZ9021	ϕ900	2100	4"/110mm flange	50	20	2.4	65
603109	FZ1025	ϕ1000	2500	4"/110mm flange	60	20	3.5	65
603110	FZ1027	ϕ1000	2720	4"/110mm flange	110	20	3.9	65
603111	FZ1127	ϕ1100	2700	5"/140mm flange	120	20	4.5	65
603112	FZ1230	ϕ1200	3000	5"/140mm flange	140	20	5	65

DEGASSER

Vacuum degasser is a necessary equipment for high-density aquaculture and aquarium water treatment. When fish breathe oxygen in water, the CO2 discharged is 1.5 times that of O2, and the CO2 gas will be dissolved in the water, so degasser is needed to protect the O2 content of fish in the culture tank, and inhibit the growth of bacteria, and promote the healthy growth of fish.

Vacuum degasser adopts the internationally advanced "semi-vacuum-air-water convection" treatment technology, which can effectively separate and discharge gas from water, and has the advantages of high-efficiency treatment capacity and low energy consumption.



Features:

- Adopting semi-vacuum negative pressure technology, completely degass.
- Can dissolve carbon dioxide (CO_2), nitrogen (N) gas
- Can reduce nitrite (NO_2) and nitrate (NO_3) in water and increase the rate of dissolved oxygen.
- PP board structure, standard looper flange inlet and outlet.
- Filter media: optional K5 bio-ball or PET bio-film.
- Effective degass CO_2: 50-75% , gas water ratio (G/L): 3-5.

Product parameters

Model	Ø (mm)	Cross-sectional area(m^2)	Chamber height (m)	Fillter media height (m)	Flow rate (m^3/h)	Inlet (DN)	Outlet (DN)	Air intake (m^3/h)	G/L (Ratio)
C025	400	0.126	2.2	1.5	25	80	100	125	5-1
C050	600	0.283	2.2	1.5	50	100	150	200	4-1
C0100	1000	0.785	2.5	1.5	100	150	200	500	5-1
C0200	1400	1.571	3	1.5	200	200	250	800	4-1
C0300	1750	2.3562	3	1.5	300	300	400	1200	4-1

The air intake ratio can be adjusted appropriately to achieve a balance between power consumption and degassing efficiency.

DEGASSER WITH OXYGEN INJECTION

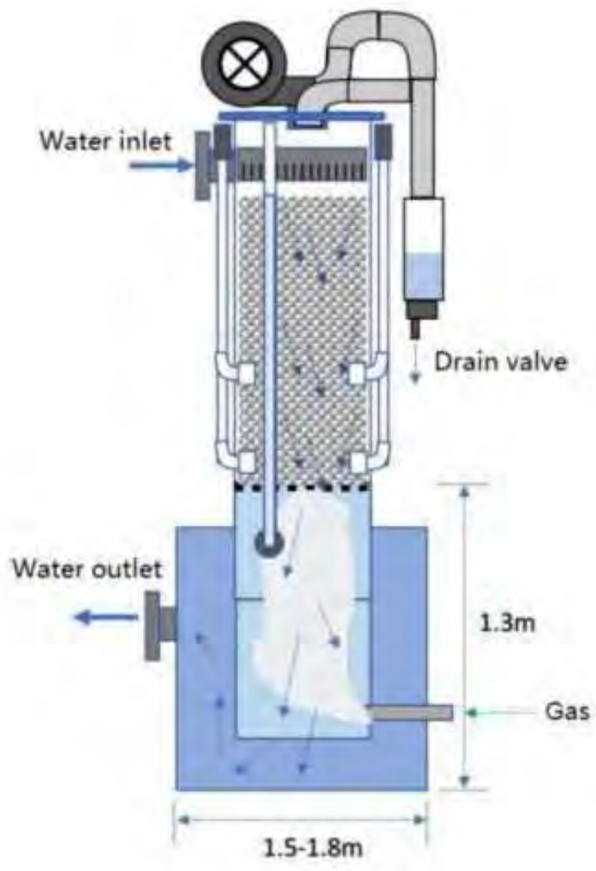
When using a vacum degasser, the effective degassing of the water will reduce the gas saturation in the water and enhance the ability of accepting other gases. Therefore, when high-density aquaculture needs to add oxygen, you can choose the accessories of degasser to enable the degasser to add oxygen.

Features:

- Integrated design to reduce the space required for equipment.
- The injected gas will dissolved in the water, which is easy to operate and requires less maintenance.

Injectable gas:

Pure oxygen (Effectively increasing the dissolved oxygen ratio)
Ozone (Effective sterilization and elimination of viruses)



Product parameters

Model	Upper part (mm)	Lower part (mm)	Chamber height (m)	Flow rate (m^3/h)	Inlet (DN)	Outlet (DN)
CO25+	400	600	2.8	25	80	100
CO50+	600	800	3	50	100	150
CO100+	1000	1200	3.5	100	150	200
CO200+	1400	1600	3.8	200	200	300
CO300+	1750	2000	4	300	300	400

NANO BUBBLE AIR DIFFUSER

Laswim nano air bubble diffusers are among the most efficient diffusers available, allowing you to increase yield while controlling the cost of expensive gas. The gas passes through the ultra fine pore ceramic plate that produces a cloud of extremely fine bubbles of approximately 50 to 500 microns. The flat plate design ensures uniform bubbles across the entire surface and minimizes bubble coalescence to achieve a high absorption rate.

Features:

- Extremely efficient, the bubbles produced are extremely fine which are not even visible but appear as a cloud.
- The product sinks by itself, very easy for installation, just needs to be dropped at the appropriate place.
- Wide applications. Can be readily used in the recirculation aquaculture systems, hatcheries and places where very fine bubble size are required along with a very high oxygen transfer efficiency.

Product parameters

Model	Size (cm)	Ceramic plate area (cm^2)	Advised optimal working pressure (Mpa)	Advised max. working pressure (Mpa)	Max. pressure (Mpa)	Advised flow rate (L/min)	Base material	Gas tube
NBQ50	19.0×10.5×2.2	50	0.15–0.2	0.35	0.7	0.25–0.35	PC	Can be connected to air tubes with an external diameter of 8 or 12 mm.
NBQ200	35.5×10.5×2.2	200	0.15–0.2	0.35	0.7	1.0–1.5	PC	

TEMPERATURE CONTROL

Water quality is extremely important and critical for aquaculture and aquarium. Water temperature not only directly affects the metabolic activities of aquatic life, but also affects their growth by changing other elements of the water indirectly. According to the biological habits of different species, fish can be divided into cold water fish, warm water fish and tropical fish. The right and stable water temperature is essential to their health. Different fishes have different requirements for water temperature, some fishes need the water to be heated at a constant temperature while some fishes need to be cooled at a constant temperature. Laswim air source heat pump is an optimal, cost-effective and eco-friendly solution to provide a perfect water condition for different fish species. And as we know, animals that are healthy and happy will grow faster, live longer, and require less maintenance.

HEAT PUMP

LAS21-KP

LAS35-KP - LAS52-KP

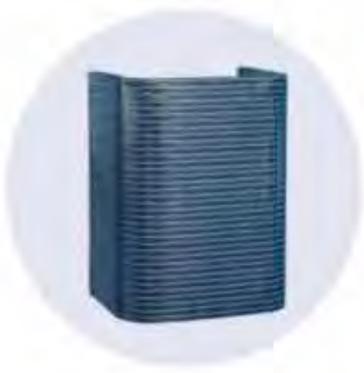
LAS70-KP - LAS105-KP

This series air source heat pump is specially designed according to the special breeding needs of aquaculture and aquarium, can precisely maintain the water temperature.

FEATURES OF HEAT PUMP FOR AQUACULTURE & AQUARIUM

1. More economical and energy saving

The COP of this aquaculture heat pump is higher than that the ordinary heat pump, which means that the time for this unit to reach the same temperature is shorter, and the daily use and maintenance costs are lower!



■ Evaporator:

- With large surface for big air flow and good heat absorption.
- With great corrosion and heat resistance, COP is stable.

■ Dual coil Titanium heat exchanger:

- Enlarges the heat exchanging surface that increases efficiency by providing an sufficient action area.
- Effectively resists the corrosion of chloride in water.

■ Electric expansion valve:

- Automatically adjust the refrigerant flow rate, ensuring
- the units operate with high efficiency in all weather conditions.

■ Intelligent and high efficient control system

- Automatic electric control system with a touch display, the operation and settings are more easy and convenient.
- The control panel adopts advanced SMT technology and ST micro -computer chip, with stable & reliable performance and powerful functions.

■ International standard compressor:

- International famous brand compressor with precise energy stage settings ensures the working unit to achieve the desired energy saving effect.

2. Longer service life and more in return

The materials of Laswim aquaculture heat pumps are more suitable for use in aquaculture environments, with a long life span (about 10-12 years) and a high return on investment.

Features:

- The titanium heat exchanger does not react with weak acids and weak bases, and is not affected by sea water and scale. It can adapt to aquarium and aquaculture farms' condition.
- The housing is made of high quality metal material and the surface is specially treated, which does not fade, does not change color and has good corrosion resistance, which ensures the service life of the heat pump for more than 10 years.
- Adopts hydrophilic blue film fins to make the evaporator resistant to heat and corrosion, and not affected by operating time.
- The copper tube adopts multiple anti-corrosion measures to prevent the corrosion of the sea. Its service life is 4 to 6 times longer than the normal aluminum tube (average service life is 2-3 years).

Technical parameters

Model		LAS21-KP	LAS35-KP	LAS42-KP	LAS52-KP
A24/W26 condition	Heating capacity (kW)	28.3	45.5	56.2	68.1
	COP	6.63	6.66	5.72	6.77
A20/W26 condition	Heating capacity (kW)	25.0	40.2	49.6	60.2
	COP	5.97	6.00	6.05	6.08
A7/W26 condition	Heating capacity (kW)	18.4	30.6	37.9	45.8
	COP	4.50	4.57	4.62	4.63
Cooling condition(35°C)	Cooling capacity (kW)	15.4	26.8	33.2	40.1
	EER	3.44	3.45	3.49	3.50
Power supply		380V/3N/50Hz			
Rated input power (kW)		4.2	6.7	8.2	9.9
Rated input current (A)		7.5	12.0	14.3	17.7
Maximum input power (kW)		7.1	11.8	14.2	16.5
Maximum input current (A)		11.9	19.8	23.8	27.7
Maximum outlet water temperature (°C)		40			
Grade of waterproof		IPX4			
Anti-shock type		I			
Operating air temperature (℃)		-5℃~43℃			
Heat exchanger		PVC+Titanium			
Maximum pressure (MPa)		4.2			
Refrigerant		R410A			
Noise Level dB(A)		≤65	≤68	≤68	≤68
Water inlet/outlet size		DN40(Internal)	DN40(Internal)	DN40(Internal)	DN50(Internal)
Circulating water flow rate (m^3/h)		6	10	12	15
Water pressure drop (kPa)		47	48	50	50
Net weight (kg)		165	280	320	420
Dimensions	Length (mm)	745	1425	1425	1425
	Width (mm)	745	745	745	745
	Height (mm)	1100	1100	1100	1100

Remarks:

1.A24/W26 Standard heating condition: 24°C DB, 19°C WB, inlet water temperature 26°C;
2.A20/W26 Standard heating condition: 20°C DB, 15°C WB, inlet water temperature 26°C;
3.A7/W26 condition: 7°C DB, 6°C WB, inlet water temperature 26°C;
4.Cooling condition: 35°C DB, 27°C WB, inlet water temperature 28°C;
5.Due to the continuous improvement of products, the actual data will be subject to change without prior notice, please refer to the nameplate.

3. Simple and convenient operation

Laswim aquaculture heat pump adopts an advanced computer control system, one-time setting and intelligent operation, fully automatic and precise control of water temperature and the unit's operation status, making the constant temperature easier and more labor-saving.

4. Various choices and can be customized

Laswim heat pumps for aquaculture include air source heat pump and water source heat pump. Customers can choose according to the actual conditions. At the same time, Laswim's professional technical team can provide customers with customized services, so that the heat pumps can be more targeted.

Technical parameters

Model		LAS70-KP	LAS85-KP	LAS105-KP
A24/W26 condition	Heating capacity (kW)	91.0	109.1	132.4
	COP	6.66	6.69	6.73
A20/W26 condition	Heating capacity (kW)	80.4	96.4	117.1
	COP	6.00	6.03	6.01
A7/W26 condition	Heating capacity (kW)	61.2	73.6	89.1
	COP	4.57	4.60	4.57
Cooling condition(35℃)	Cooling capacity (kW)	53.6	64.4	78.1
	EER	3.45	3.47	3.46
Power supply			380V/3N/50Hz	
Rated input power (kW)		134.4	16.0	19.5
Rated input current (A)		23.9	28.6	34.8
Maximum input power (kW)		23.6	28.4	33.0
Maximum input current (A)		39.6	47.6	55.4
Maximum outlet water temperature (℃)			40	
Grade of waterproof			IPX4	
Anti-shock type			I	
Operating air temperature (℃)			-5℃~43℃	
Heat exchanger			PVC+Titanium	
Maximum pressure (MPa)			4.2	
Refrigerant			R410A	
Noise Level dB(A)		≤70	≤70	≤70
Water inlet/outlet size		DN50(Internal)	DN65(Internal)	DN65(Internal)
Circulating water flow rate (m^3/h)		20	25	30
Water pressure drop (kPa)		51	53	55
Net weight (kg)		560	650	760
Dimensions	Length (mm)	2250	2250	2250
	Width (mm)	1035	1035	1035
	Height (mm)	1210	1210	1210

ADVANTAGES OF HEAT PUMP FOR AQUACULTURE

1. Cost-effective

Whether the first heating or daily constant temperature, what you gain from the heat pump will be much more than what you pay. It helps the user to save big operation cost and daily maintenance cost. Its long service life (12-15 years) also let aquaculture farmers benefit a lot.

2. Safe

Extracts the latent heat from the ambient air and transfer it to the water. The water does not contact with electricity, no waste gas, waste residue, smoke and dust will be produced, and does not have the danger of electric leakage, gas leakage and explosion. This process is clean and safe for the environment, very suitable for any aquarium and aquaculture.

3. Intelligent control

Adopts an intelligent control system, it runs automatically after starting, automatically monitor the water temperature and keep the water at a constant temperature, minimizing the labor cost!

4. Trouble-free

Heat pump only needs small amount of electricity for the running. The electricity supply method is simple and no need to worry about the price fluctuations. As long as the power supply is normal, the water can be kept at a constant temperature all the year round.

5. Higher yields and increased growth rate

By precisely controlling the water temperature, heat pump helps to greatly improve the aquatic life's survival rates, reproduction rates and grow-out cycles.

CHILLER

Lights and pumps can quickly raise water temperature of aquarium and aquaculture to dangerous levels, but water chiller will help to lower and maintain a safe temperature. Laswim chiller utilizes high efficiency internal threaded tube, its high heat exchange efficiency is more than twice that of traditional shell and tube heat exchangers. The inlet and outlet of the refrigerant is excellent sealed to avoid leakage. The sealing is made of high temperature resistant materials, which can withstand a wide temperature range of -20℃ to 200℃. Filling with heat insulation material between the steel housing and the engineering plastic housing, which can effectively reduce the heat loss of the heat exchanger. Durable independent joint, water inlet and outlet is made of metal materials, sturdy and durable, can can be used under special water quality and effectively resist the corrosion of acid, alkali, chloride ion and erosion of sediment.

Features:

- Adopts digital controller to keep the water temperature more accurate and stable.
- The digital controller can monitor the high and low pressure of the compressor, when the pressure is too high or too low, an alarm will be triggered automatically.
- The power-off memory function can effectively ensure that when the power is turned off, it will automatically continue to work at the original set temperature when the power is turned on again, ensuring the safety and health of the animals and plants in the aquarium.

Product parameters

Model		LAS-30-WA	LAS-50-WA	LAS-70-WA	LAS-100-WA	LAS-120-WA	LAS-150-WA
Rated Cooling Capacity (A35°C/w7°C)	Cooling Capacity (kW)	8.5	14.5	18.0	28.5	35.0	42.8
	EER (W/W)	3.1	3.1	3.1	3.1	3.1	3.1
	Power (kW)	2.7	4.7	5.8	9.2	11.3	13.8
	Current (A)	12.5	8.0	9.9	15.7	19.3	23.6
Power Supply Form		220V~/~50Hz			380V/3N~/50Hz		
Maximum Input Current (A)		18	13	17	25	27	32
Maximum Input Power (kW)		4.0	7.3	9.5	14.0	15.1	17.9
Compressor Type		Rotary			Fully Enclosed Scroll		
Water Pressure Drop (kPa)		30	36	41	42	48	52
Noise (dB(A))		58	60	62	65	66	68
Water Inlet/Outlet Diameter (PVC) (mm)		DE50 Union	DE50 Union	DE63 Union	DE63 Union	DE63 Union	DE75 Flange
Water Flow Rate (m^3/h)		5	8	11	13	17	20
Refrigerant		R410A					
Operating Temperature Range (℃)		≤48					
Exterior Dimensions (Length*Width*Height) (mm)		768*709*868	805*750*1068	870*810*1268	1450*780*1073	1580*900*1660	1580*900*1660
Weight (Kg)		95	145	160	235	325	385

- Rated cooling conditions: outdoor dry/wet bulb temperature is 35℃/24℃, inlet water temperature is 12℃, outlet water temperature is 7℃;
- Performance parameters may change due to product improvements; please refer to the unit's nameplate for specific parameters.

PLATE HEAT EXCHANGER

1.Economical and high-efficiency

Assembled from corrugated plates formed by one-time stamping and has low metal consumption. When using corrosion-resistant materials, the investment cost is significantly lower than other types of heat exchangers.

2.High heat transfer coefficient

When the Reynolds number> 10, severe turbulence can be generated, and the general total heat transfer coefficient can be as high as 3000 -7000W/m^2k.

3.Less heat loss

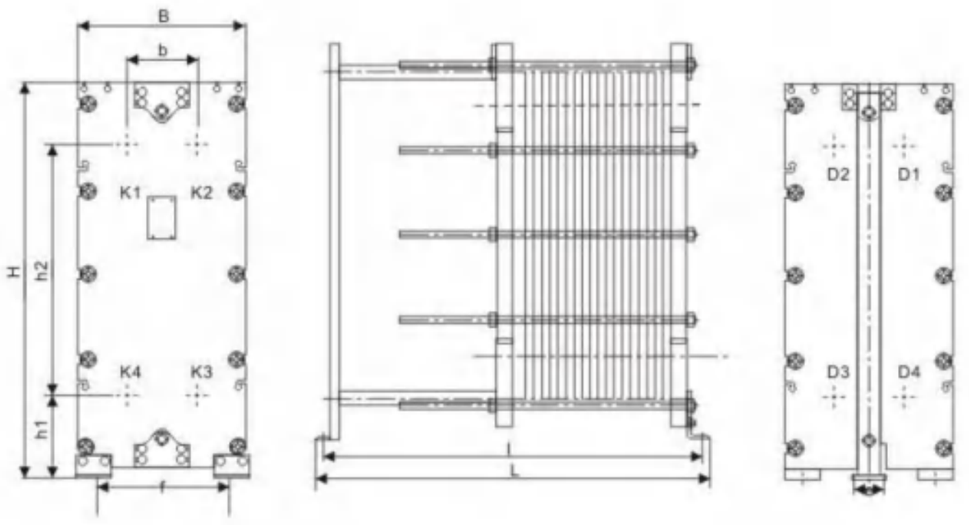
The heat exchange is carried out in the form of countercurrent, which can reach a temperature difference of 1℃ at the end, and the thermal efficiency is ≥95%. Only the edges of the plates are exposed, with minimal heat loss and no need for heat preservation.

4.Compact structure, small footprint

A small space can provide large heat exchange area, and its occupied space is a small part of other types of heat exchangers, and no additional space for disassembly and assembly is required.

5. Long service life and easy maintenance

High turbulence degree of water flow, effectively reduces scaling, and the stainless steel plate is not corroded. When it needs to be disassembled and cleaned, just loosen the fastening bolts, and the gasket can be quickly replaced.



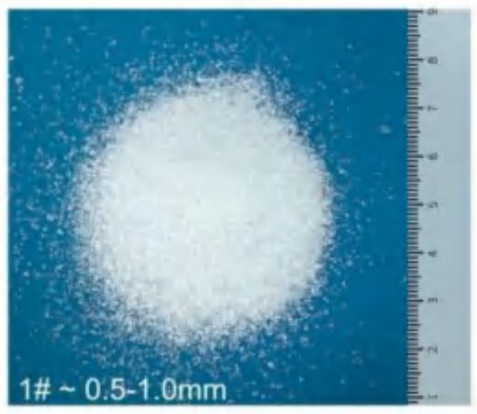
6. Wide adaptability

Each model has four different specifications of plates, and different combinations can flexibly meet various conditions of use. The plate is an independent unit, and the number of plates can be increased or decreased to match the changing heat requirements.

Product parameters

Size \ Model		BH0.05	BH0.1	BH0.2	BH0.3	BH0.5	BH0.8	BH1.3	BH1.8
Single plate heat exchange area(m^2)		0.05	0.11	0.18	0.27	0.52	0.82	1.34	1.80
b		80	151	174	238	310	348	516	628
B		200	320	380	500	630	900	1150	1370
e		---	140	140	140	150	240	240	300
f		---	220	280	400	480	830	1050	1270
h1		50	262	230	330	342	279	380	500
h2		430	554	739	854	1208	1438	1778	2100
H		530	930	1100	1350	1750	2055	2430	3000
Φ		---	14	14	14	18	22	22	26
L	MIN	110	565	623	780	759	1265	1100	1600
	MAX	330	1105	1623	1625	1629	2050	2600	4200
Connecting size(flange)		DN25	DN40	DN50	DN80	DN125	DN200	DN250	DN250
Weight	MIN	26	150	280	540	1300	1800	2600	3300
	MAX	48	240	400	800	1800	2350	4400	6500

FILTER MEDIA



Crystal filter media

Crystal glass filter media is a new type of renewable water treatment filter material, has the characteristics of high efficiency, clean, environmental friendly and long service life. It is an ideal replacement of traditional silica sand. Application: swimming pool, water park, aquarium, SPA, water feature

Ceramic filter ring

Specification: 20*20*20mm
Main ingredients: sodium Silicate, calcium silicate
Suitable for: biological filter, sand filter
Application: biological bacteria culture for wastewater treatment, aquaculture water treatment, aquarium project, family aquarium and other treatment projects.

Activate carbon

Main ingredients: coal carbon or wood carbon
Application:
1. Use to remove color or impurities in liquid.
2. Use to remove odors and fumes in gas.
3. Used in the field of catalysis, and as a carrier of a substance.

Bio ball

Specification(diameter): 32-42-48mm
(not contain cotton core)
Main ingredients: nontoxic PP or PVC plastic

Coral sand

Main ingredients: natural coral bone stone sand
Application: it can help to eliminating chlorine, sterilize, remove odor and balance PH value, and can improve the water quality of fish tank. It is often used in seawater aquaculture filtration systems.

K1 filter media

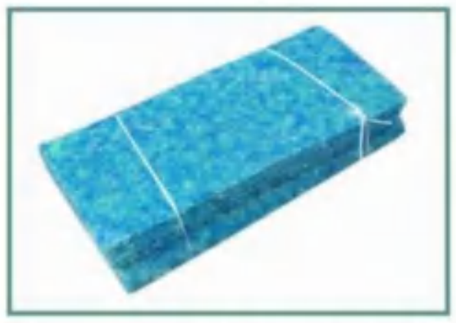
Specification (diameter): about 11mm
Main ingredients: PE material
Application: can be used in the field of environmental protection, chemical industry, wastewater treatment, drinking water treatment, aquaculture water treatment and so on.

K3 filter media

Specification: 25*12mm
Suitable for: biological filter or trickle-flow bio-filter
Application: Reuse reclaimed water after biochemical treatment, denitrification and phosphorus removal of river regulation, the removal of ammonia and nitrogen in aquaculture and water purification.

Volcanic stone

Specification: 25kg/pack
Suitable for: biological filter
Main ingredients: Sodium, magnesium, aluminum, silicon, perovskite, manganese, iron, nickel, cobalt, molybdenum and other minerals and trace elements.



Filter mat

Specification: 200*100*4.5cm
Recommend combination: volcanic stone, ceramic filter ring and fil ter brushes
Application: sea water recirculating aquaculture project, sewage treatment project, drinking water treatment and biological filtration of many other industries.

Cross sponge ball

Material: polyurethane + PP plastic
Specific surface area: 5000m^2/m^3
Voidage: >90%
Application: it is widely used in biological filtration of various water treatment.

Filter brushes

Specification: 100*500mm
Main ingredients: 316 stainless steel core and high quality PVC brushes.

CLASSIC PROJECTS