

BESTE III

BESTE III follows the process of combining activated sludge process and biofilm process with Hexu A³/O-MBBR patented technology and add a new technology of soft fixed packing filtration, which aims to create a new type of high-efficiency process for biological nitrogen and phosphorus removal to meet all the the standard limits.

The greatest highlight of BESTE III is the good and stable effluent water quality. In the pre-denitrification zone and the anaerobic zone, an adjustable sectional water inlet design is added, the effect of low C/N ratio on denitrification is improved, to eliminate the addition of external carbon source, enhancing the nitrification and denitrification, achieving the optimization of biological phosphorus removal and sludge reduction, and maintaining biological phosphorus removal rate of more than 85%. The newly developed soft fixed packing filter module is configured to upgrade the precipitation system to ensure that the effluent SS is stably controlled and remained below 10 mg/L. The effluent quality from the BESTE can reach the " class A Pollutant Discharge Standard for Urban Sewage Treatment Plant"(GB18918-2002)-effluent standard.

The second highlight of BESTE III is the overall upgrading of industrial design. It continues to utilize and optimize the scheme of low energy gas consumption pump set which is prepared for each other and it has the advantages of low noise, low energy consumption and simple routine inspection. Through the combination of numerical simulation and experimental analysis, the design of circular water distribution is optimized, the flow direction of the liquid is arranged scientifically, the gas path is reasonably arranged, the blindspot and short circuiting are avoided to the maximum extent, and the space utilization effect of the equipment is maximized. The central maintenance channel is set up at the top of the equipment, the valve pipeline maintenance area is located on both sides of the channel, the layout is clean and clear, and the operation is convenient and safe.

The scene control software is integrated, and the operation mode one-key setting in different areas and different water inlet conditions is realized for the first time. The system of Hexu Environment operates data development with regards to the operation data in Beste station project for many years, and it can provide preset operation procedures for more than 40 kinds of operation stations with different water quality and quantity characteristics so that the problem of setting the operating parameters of the equipment is solved when the quality and quantity of water are changed in the long-term operation of the station.

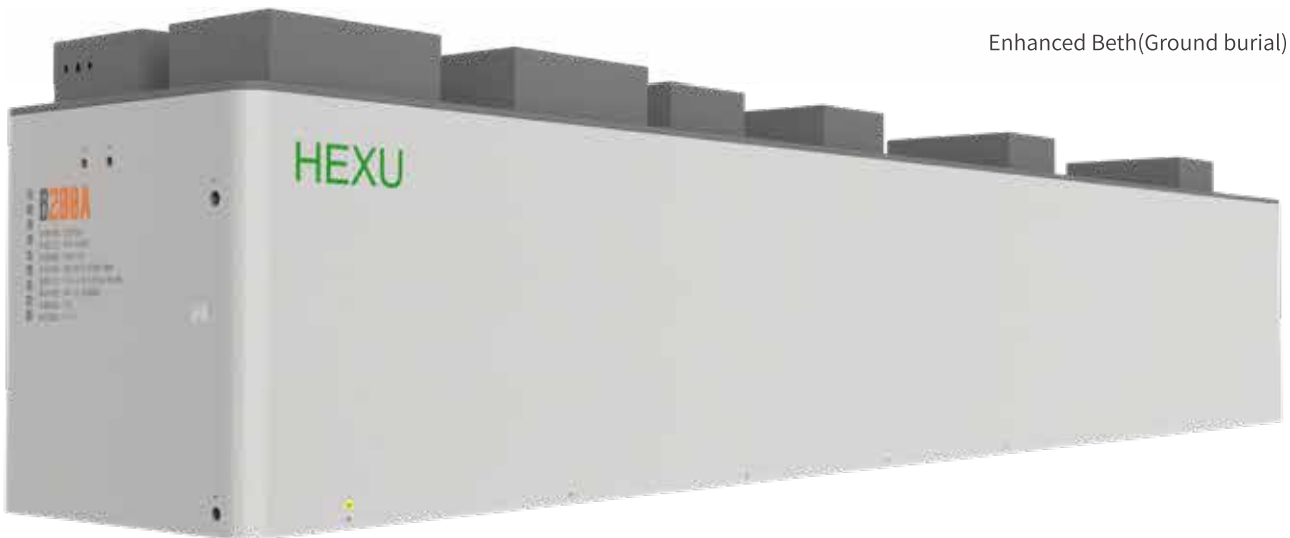
The third highlight of Beste III is the overall upgrades of the product quality. The series of products have undergone 8 design reviews, and 14 categories of 413 items of the content meter are reviewed, the first sample of the product is confirmed by the 9 categories of 231 test items. The production products pass through the 11categories of 84 items of strict incoming materials and processes, and the finished products qualified to be delivered to the factory. Design and manufacture is strictly in accordance with enterprise standards, production and manufacturing industrialization, standardization. SPA-H weather-resistant steel is used as the main material, after more than 20 processes, the modified epoxy coating cured by polyamide is used. The thickness of dry film reaches 300pm, and the anticorrosive quality in the box is guaranteed for ten years.



Photoes:

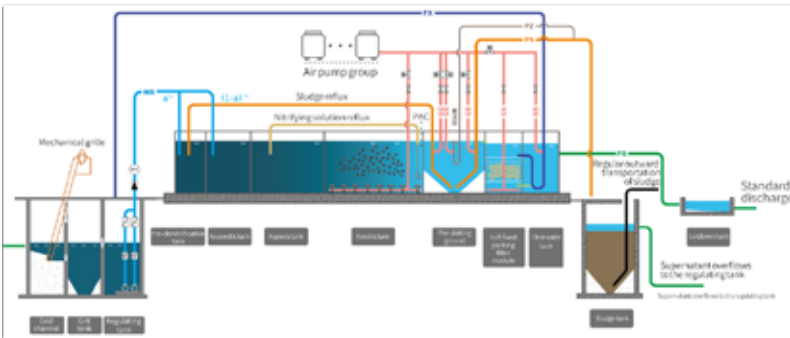


Standard BESTE (Ground)



Enhanced Beth(Ground burial)

Technology:



Outside View

Cut-away View



Vorticella



Vorticella

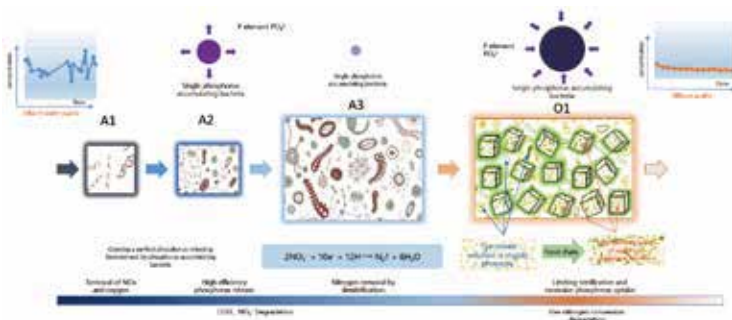


Nematode, Spirulina



Surface Beetle, Vorticella

Beste A³/O-MBBR Biological Process Technology



Working Principle And Characteristics Of Soft Fixed Packing Filter Module:

The effluent after 1.5H precipitation enters the soft fixed packing filter module and passes through the packing layer from top to the bottom by gravity so that the effluent SS can be kept below 10mg/L steadily. The filter module of soft fixed filling does not need filter pump and backwash pump, and automatic gas-water backwashing is carried out by using the difference of water level and aeration device formed by air-lift discharge backwashing water.

The soft fixed packing filter unit can reduce the SS value of the effluent from the final sedimentation tank. The biofacies found that there were a small number of metazoa in the filling, and the total nitrogen and total COD, decreased by 5.5 mg / L, 0.38 mg / L and 0.09 mg / L, respectively. Microbiological microscopic examination showed that microbe could be detected in the filling, while the quantity and species were not as many as that in aerobic pool, and there were metazoa.

Beste A³/O-MBBR Biological Phase

Aerobic Zone Mixture

Aerobic Zone Filling



It is observed that there were more kinds and quantities of microorganisms in the filler than that in the mixed solution, and the high density perch of the epiphytes on the filler is beneficial to the reduction of sludge.

Advantage:



Improve denitrification and carbon removal to reach the standard of effluent stably



Upgrade precipitation filtration system, effluent SS can be controlled to below 10mg/L



Rational regional distribution and scientific gas-liquid flow pattern



Set up maintenance channels, one-click switch operation mode simplicity, user-friendly



Environmentally friendly, low noise



High efficiency and energy saving, with water energy consumption of 0.35 degrees per ton



Strict implementation of product design and manufacturing quality control standards



High grade of anticorrosion, 10-year quality assurance of internal anticorrosion

Scope:



Township group domestic sewage, no municipal pipe network scenic spot treatment



Sewage treatment in schools, guesthouses, inns, etc.



On-site treatment of domestic sewage



Pollution control of black and smelly water body in suburbs without covering for the time being



Temporary domestic sewage treatment

Specification:

Beste III											
Model	B50A-C4	B75A-C4	B100A-C4	B150A-C4	B200A-C4	B50A-MC4	B75A-MC4	B100A-MC4	B150A-MC4	B200A-MC4	
Device Name	High Efficiency Bioreactor										
Processing Object	Typical domestic sewage (COD≤400mg/L, Ammonia nitrogen≤40mg/L, TN≤50mg/L, TP≤5mg/L, SS≤220mg/L)										
Effluent Standard	GB 18918-2002 Level A/B					GB 18918-2002 Level A/B					
Treatment Process	A ³ /O-MBBR										
Daily Capacity	Ton A	50m ³ /d	75m ³ /d	100m ³ /d	150m ³ /d	200m ³ /d	50m ³ /d	75m ³ /d	100m ³ /d	150m ³ /d	200m ³ /d
	Ton B	75m ³ /d	100m ³ /d	150m ³ /d	225m ³ /d	300m ³ /d	75m ³ /d	100m ³ /d	150m ³ /d	225m ³ /d	300m ³ /d
Dimension(m)	6.5×2.4×2.7	9.4×2.4×2.7	12.3×2.4×2.7	14.1×2.9×2.9	17.5×2.9×2.9	6.5×2.4×2.75	9.1×2.4×2.75	11.9×2.4×2.75	14.1×2.9×2.95	17.5×2.9×2.95	

Note: "B50A-C4" and others indicate the above-ground version of the product model, "B50A-MC4" and others indicate the buried version product model.

Township Sewage Treatment Station



Station:

The population of the villages and towns in our country is relatively small, the distribution is wide and scattered, and the drainage network is not perfect. Therefore, it is appropriate to approach them for processing. Because of the large number of migrant workers, the quality of sewage and the quantity of water fluctuate. However, the selected treatment process should be able to resist the impact load. The economic strength of villages and towns is weak. Accordingly, sewage treatment should fully take into account the process of low cost, low operation cost, low energy consumption and no energy consumption. Villages and towns lack sewage treatment professionals. Hence, simple process management and convenient equipment maintenance are important considerations.

The township sewage treatment station designed by Hexu has the advantages of occupying a small space, a short construction period, standardization, high automation of equipment, unattended operation, low power consumption per ton of water, less residual sludge, treatment water volume being adjusted with seasonal variation, etc., all of which make it suitable for township sewage treatment with a capacity of between 30 and 5,000 tons per day.

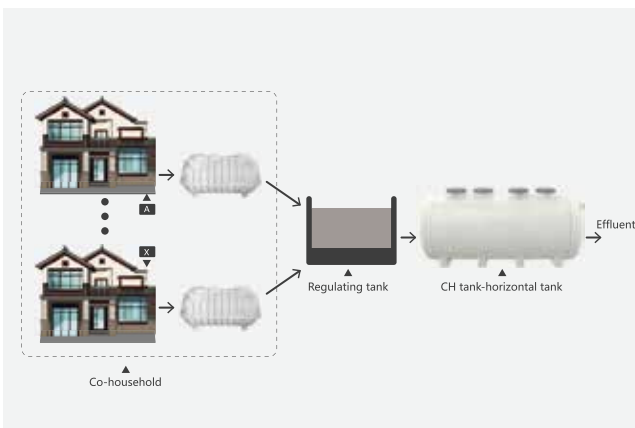
Components:

The Hexu township sewage treatment station is composed of a grid uniform regulating pool and BESTE biofilm processor. 1. The grid homogenization tank contains a grid, sand deposition, homogenization, sewage lifting, etc. 2. The BESTE biofilm processor has its own patent for the A³/O-M BBR process, and has set up the functional areas of clear pre-denitrification zone, anaerobic zone, anoxic zone and aerobic zone, optimized the layout structure of sludge and nitrifying liquid reflux system, and integrated biochemical, precipitation, biofiltration, disinfection and other functional units in one, realizing the production equipment, the implementation standardization and the operation automation.

The Hexu township sewage treatment station is equipped with an optional module, which can be used in the township sewage treatment station where the influent C / N imbalance or the effluent standard requirements are higher than that of Grade A of the "Pollutant discharge Standard (GB18918-2002) of the Urban Sewage Treatment Plant".



Rural Sewage Collection And Treatment Model:



Small Concentration / Co-households



Separate Households Diagram

CHtank-Horizontal Tank

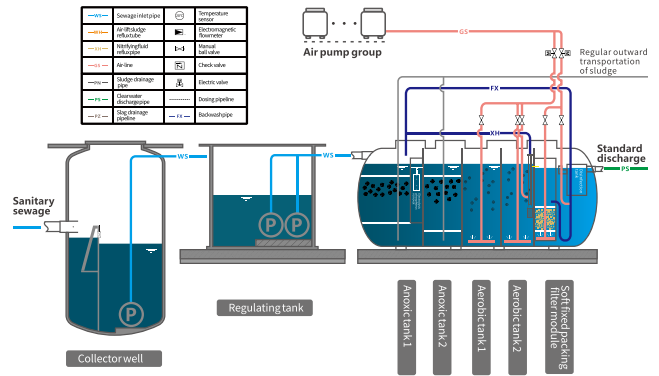
Introduction:

The Chinese tank (CHTank) is a series of products developed on the basis of the combination of the multi-level A / O biological contact oxidation process, which integrates the anoxic tank, aerobic tank, soft fixed packing filter module, electric release phosphorus module (optional) and disinfection tank, etc. There are two kinds of products in this series: the first one is the effluent standard for environmentally sensitive areas, and the effluent can meet the "Pollutant Discharge Standard of Municipal Sewage Treatment Plant" (GB 1898 / 2002)-Grade A standard; the second is a product which is designed according to the local standard level A / B and the local standard level A / B of the provinces and cities (see " water quality meter of influent and effluent").

This series of products is made of high quality PP and glass fiber through a strict extrusion and winding process. The tank body is rigid, high strength, long life and suitable for implementation of the burial mode. The meticulously designed product is of reasonable size and is convenient for hoisting and transportation to the countryside. The adjustable metal fixing strap is standard, which is convenient for anti-floating installation. The device is configured with a continuous network controller, and the cloud platform continually manages the equipment, so that remote monitoring is easy and convenient which facilitates maintenance management.

Water quality meter of influent and effluent						
水质指标	COD _{Cr}	NH3-N	TN	TP	SS	PH
Water outlet design value(WODV)	≤400	≤40	≤50	≤5.0	≤180	6-9
WODV (GB18918-2002 Level 1 A)	≤50	≤5 (8)	≤15	≤0.5	≤10	6-9
WODV (GB18918-2002 Level 1 B)	≤60	≤8 (15)	≤20	≤1	≤20	6-9
WODV (Hexu Rural Level 1 A)	≤50	≤5 (8)	≤20	≤1	≤10	6-9
WODV (Hexu Rural Level 1 B)	≤60	≤8 (15)	≤30	≤3	≤20	6-9
WODV (Hexu Rural Level 2 A)	≤60	≤8 (15)	/	/	/	6-9
WODV (Hexu Rural Level 2 B)	≤100	≤25 (30)	/	/	/	6-9

Technology:



Advantage:



It is stable in operation and strong in water quality and impact resistance



The sludge yield is low, and the inorganic sludge needs to be pumped once a year



The effluent quality is good, and the phosphorus removal by electrolysis technology is efficient



Simple control, fewer fault points, low maintenance frequency



Remote monitoring, easy to manage



Low noise no smell.



The workmanship is of a high standard and the appearance is pleasing to the eye.



Environmentally friendly PP is built, and the buried service life is long

Scope:



Village



Inn



Farm House



Villa Area



Scenic Area

Specification:

Chtank-horizontal Tank												
Model	C50GA-H	C100GA-H	C150GA-H	C200GA-H	C250GA-H	C300GA-H	C50DA-H	C100DA-H	C150DA-H	C200DA-H	C250DA-H	C300DA-H
Device name	High efficiency bioreactor											
Processing object	Typical domestic sewage (COD≤400mg/L, Ammonia nitrogen≤40mg/L, TN≤50mg/L, TP≤5mg/L, SS≤220mg/L)											
Effluent standard	GB 18918-2002 level 1 A						GB 18918-2002 level 1 B, Hexu Rural Level 1 A/B					
Treatment process	多级A/O											
Daily Capacity	5m ³ /d	10m ³ /d	15m ³ /d	20m ³ /d	25m ³ /d	30m ³ /d	5m ³ /d	10m ³ /d	15m ³ /d	20m ³ /d	25m ³ /d	30m ³ /d
							8m ³ /d	15m ³ /d	20m ³ /d	30m ³ /d	35m ³ /d	45m ³ /d
Dimention (m)	5.5×2.0×2.3	9.0×2.0×2.3	8.7×2.5×2.8	10.9×2.5×2.8	10.9×2.8×3.0	12.7×2.8×3.0	4.2×2.0×2.3	6.5×2.0×2.3	6.1×2.5×2.8	8.1×2.5×2.8	7.7×2.8×3.0	9.2×2.8×3.0

Note: GB-B: GB 18918-2002 Level 1 B, DB-B: Rural Level 1 B

■ GB-B/DB-A

■ DB-B

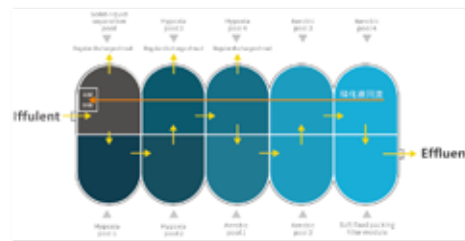
NESTE

Introduction:

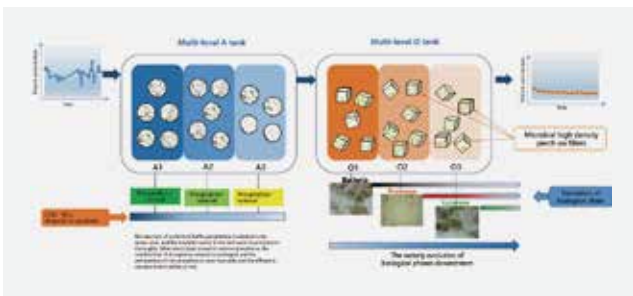
NESTE is a series of products developed based on the integrated multi-level A/O biological treatment process, which integrates the anoxic tank, aerobic tank, soft fixed packing filter module, electric release phosphorus module (optional), and so on. The effluent can meet the "Standard of Pollutant Discharge of Municipal Sewage Treatment Plant" (GB 1898 / 2002)-Grade A standard.

The box body of this series of products is made of high quality weatherproof steel and anticorrosive coating through a strict manufacturing process. The box body is high strength and has excellent anticorrosion performance. The modular combination design of the 5-ton and 10-ton models makes them easy to handle. The integrated design of the 15 to 30 ton models makes them conducive to integral lifting. The built-in controller makes it easy to carry out remote monitoring, operation maintenance and management through the integrated device management cloud platform.

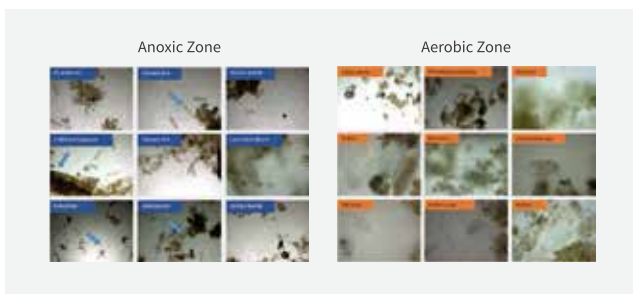
Technology:



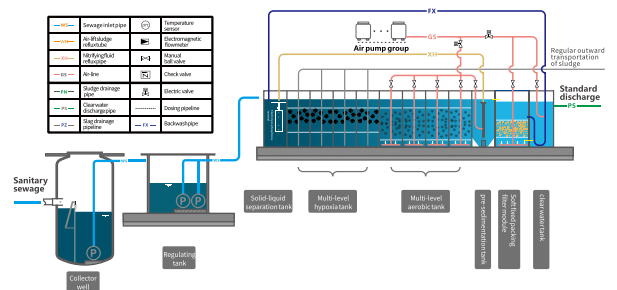
Combination And Process Flow Chart



Multi-level A/O Process Biological Treatment Flow Chart



A/O Process Biological Phase



Integrated Box And Process Flow Chart

Advantage:



It is stable in operation and strong in water quality and impact resistance



The sludge yield is low, and the inorganic sludge needs to be pumped once a year



The effluent quality is good, and the phosphorus removal by electrolysis technology is efficient



Simple controls, fewer fault points, low maintenance frequency



Remote monitoring, easy to manage



Low noise, no smell



The appearance is pleasing to the eye and it is suitable for above-ground installation

Scope:



Village



Inn



Farm House



Villa area



Scenic Area



Landscape Water

Specification:

NESTE							
Model	N50GA	N100GA	N150GA	N200GA	N250GA	N300GA	
Device Name	NESTE						
Processing Object	Typical Domestic Sewage (COD≤400mg/L, Ammonia nitrogen≤40mg/L, TN≤50mg/L, TP≤5mg/L, SS≤220mg/L)						
Effluent Standard	GB 18918-2002 level 1 A / B						
Treatment Process	Multi-Level A/0						
Daily Capacity	Ton A	5	10	15	20	25	30
	Ton B	8	15	20	30	35	45

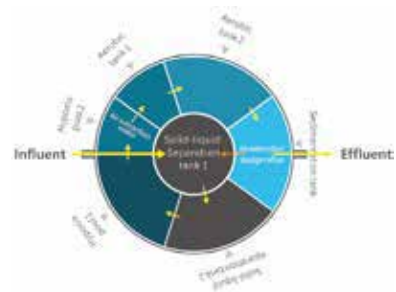
CHtank

Introduction:

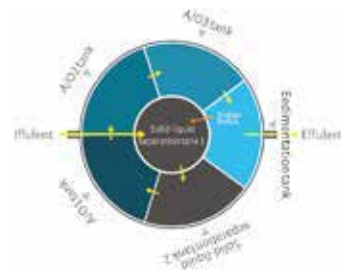
Based on the design concept of "separate / co-household treatment, free combination, the CHTank combined sewage purification tank is designed and manufactured through the hollow blow molding process and using a standardized tank body design. The height of the 0.6-1.0 ton single-tank products is integrated. The solid-liquid separation + multi-level A/O and solid-liquid separation + SND processes are adopted. The 1.5 to 5 tons of multi-tank combined products are connected in a series. The process of solid-liquid separation + multi-level A/O is adopted to meet the processing requirements of different water volumes. The series product has the characteristics of occupying a small space a simple process, stable operation, low operation costs, flexible installation, simple operation, and the like.



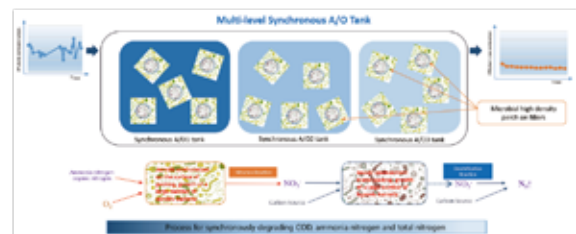
A/O Process Flowchart



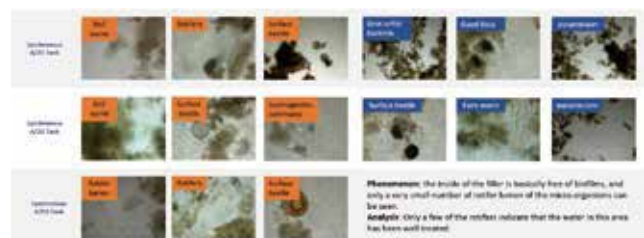
Process Flowchart



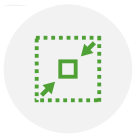
SDN Process



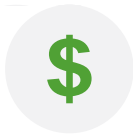
SND Process Biological Phase



Advantage:



Small Floor Space



Low Price



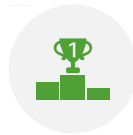
Small Energy Consumption



Odorless



Low Noise



Long Life



Good Processing Effect



Simple Operation And Maintenance Management

Scope:

It is mainly suitable for rural-household sewage treatment, small-scale inns, farm houses and so on.



Specification:

	CHtank					
Model	C6B	C10B	C15B	C20B	C30B	C50B
Device Name	Sewage Purification Tank					
Processing Object	Typical Domestic Sewage (COD≤400mg/L, Ammonia nitrogen≤40mg/L, TN≤50mg/L, TP≤5mg/L, SS≤220mg/L)					
Effluent Standard	GB18918-2002 level 1 B					
Treatment Process	Multi-Level A/O SND		Multi-Level A/ O Contact Oxidation			
Daily Capacity	0.6m ³ /d	1m ³ /d	1.5m ³ /d	2m ³ /d	3m ³ /d	5m ³ /d
Dimension(M)	φ1.2m×1.575m No higher range-1 can	φ1.2m×1.575m No higher range-1 can	φ1.2m×1.575m No higher range-2 can	φ1.2m×1.575m No higher range-2 can	φ1.2m×1.575m No higher range-3 can	φ1.2m×1.575m No higher range-5 can