

RIGID PLASTICS AND FILM RECYCLING SYSTEM

硬杂塑料及薄膜回收解决方案

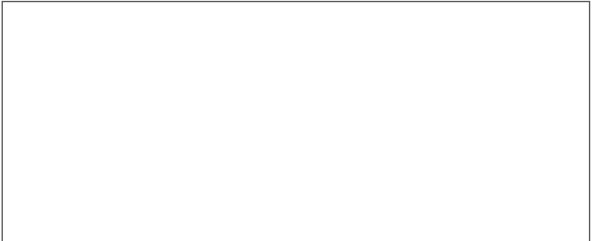
浙江宝绿特环保技术工程有限公司
ZHEJIANG BORETECH ENVIRONMENTAL ENGINEERING CO., LTD.
浙江省平湖市曹桥街道九里亭大道888号
No.888, Jiuliting Avenue, Caoqiao Street, Pinghu City, Zhejiang, China.
T: +86-573-8512-0186 F: +86-573-8511-3959
E-mail: sales@bo-re-tech.com

www.bo-re-tech.com



2024 / 04 ver.3 uCloud

Agent 代理



THE GLOBAL PIONEER IN PLASTIC RECYCLING INGENUITY
成为国际塑料环保事业的领先团队

www.bo-re-tech.com

THE GLOBAL PIONEER IN PLASTIC RECYCLING INGENUITY

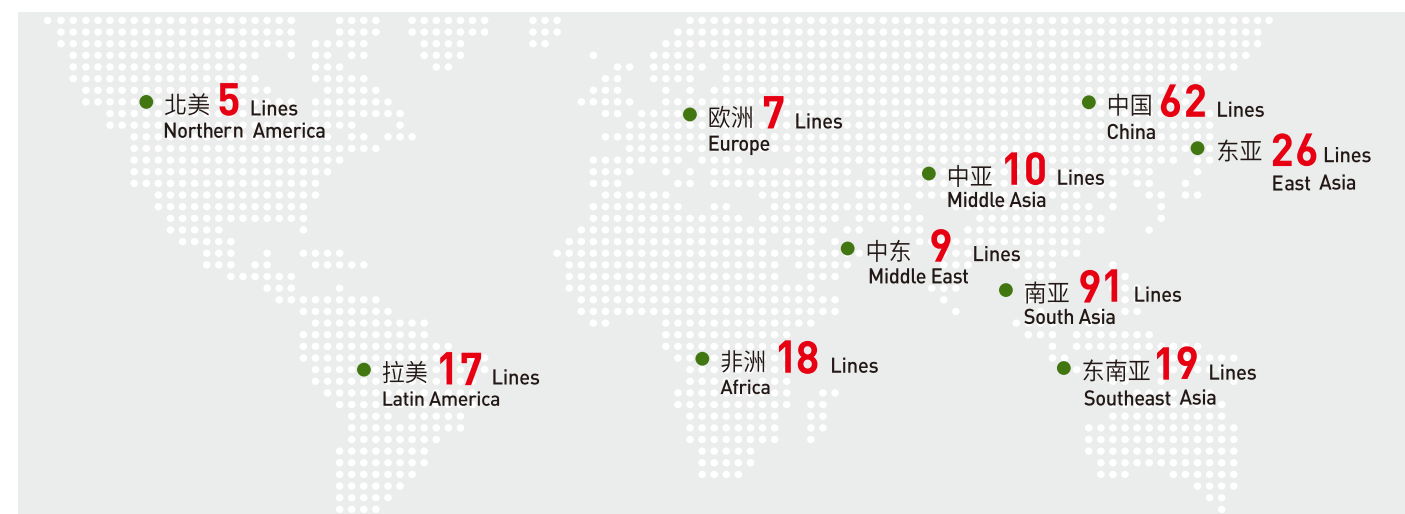
成为国际塑料环保事业的领先团队

Boretech was founded in 2005. The group's business started in 1989 with post-consumer PET bottles recycling in Taiwan. We are a new generation of an engineering company that focuses on the R&D and manufacturing of waste plastic recycling equipment, and technologies. Boretech also focus on the integration of up and downstream industries, with 30 years of plastics recovery and more than 15 years of equipment manufacturing experience who can provide a complete comprehensive plastic recycling solutions, and have the qualification of foreign contacted projects.

浙江宝绿特环保技术工程有限公司创立于2005年，集团业务从1989年在台湾从事PET瓶回收清洗事业开始，是一家聚焦废塑料资源再生设备研发制造、环保类技术应用与开发的综合性新生代工程公司。宝绿特专注于塑料回收清洗工艺，设备研发与下游产业整合，具有30年塑料回收清洗再生生产经验和超过15年的设备制造经验。提供一整套综合性塑料回收清洗系统解决方案，拥有对外承包工程资质。

CUSTOMER SERVICE AND PROJECTS

客户服务 行销全球



40⁺ 国家及地区
Countries and regions

260⁺ 条产线分布
Lines

5,500,000⁺ 吨瓶子被回收
tons plastic bottles are recycled

通过众多管理体系认证



质量管理体系



环境管理体系



欧盟CE认证



美国食药署

BUSINESS SCOPE

业务范围

- 1 Recyclable plastic recycling solutions and engineering services (process layout, whole plant planning, equipment research and development, manufacturing, sales, services, etc.), including waste PET recycling and rigid plastic and soft plastic recycling system.
 - 1.1 PET recycling solutions and engineering service that specialize in processing label bottles, clean bottles, PET flakes, etc.
 - 1.2 Soft and rigid plastic recycling solutions and engineering service specializes in rigid plastics such as PE, PP, ABS, PS, PC, and PE film, PP woven bags, etc., and provide one-stop granulation solutions and equipment.
- 2 Recyclable PET bottle to polyester staple fiber production line, POY, FDY, DTY production line, bi-component fiber production line, and textile machinery and equipment.
- 3 Recycled PET bottle-to-bottle full production equipment (recycled PET washing + granulation + SSP) and engineering services.

- 1 可再生塑料回收清洗整体解决方案及工程服务 (工艺布置、整厂规划、设备研发、制造、销售、服务等)，包括再生PET清洗与非PET类软、硬质废塑料回收清洗。
 - 1.1 PET回收清洗解决方案及工程服务方面以处理标签瓶、净瓶、瓶片等业务见长。
 - 1.2 软、硬质塑料清洗解决方案及工程服务方面以处理PE、PP、ABS、PS、PC等硬质塑料，及PE类膜、PP类编织袋等业务见长，并提供一站式造粒方案及设备。
- 2 可再生PET瓶到聚酯短纤维生产线，POY，FDY，DTY生产线，双组分纤维生产线和纺织机械设备。
- 3 再生PET瓶到瓶全制成设备 (再生PET清洗+造粒+ SSP) 和工程服务。



Rigid plastics are widely used. For the recycling of different plastics, Boretech provides corresponding solutions 杂塑料的应用广泛，针对不同塑料的回收清洗再生，宝绿特提供相应的回收清洗解决方案

WORLD'S ACTION ON PLASTIC RECYCLING IMPERATIVE!

塑料回收已成为亟不可待的全球行动!

According to our statistics, humankind produces 20,000 plastic bottles per second. In 2016, the global consumption of plastic beverage bottles was as high as 480 billion. It has now exceeded 500 billion per year, which is equivalent to 1 million per minute. Other rigid plastics (HDPE, PP, PVC, PS, etc.), film (LDPE, LLDPE) in packaging applications account for 70% of all plastic applications, and more than 90% of plastic products in the world are still not recycled.

In 2025, global solid waste will increase by 70% compared to 2010, and 32% of post-consumer plastic packaging will be discarded in nature. Take Europe as an example, the recycling rate of all plastic packaging is only 22.5%, and it will reach 50% by 2025.

据不完全统计,人类每秒生产2万个塑料瓶,2016年全球塑料饮料瓶消费量高达4800亿个,目前已超过每年5000多亿个,相当于每分钟100万个,而塑料包装不等于饮料瓶,硬杂塑料(HDPE, PP, PVC, PS等),薄膜(LDPE, LLDPE)在包装方面的应用占据所有塑料应用的70%,而全球仍有超过90%的塑料制品未被回收。

2025年,全球固体废弃物比2010年增长70%,32%的消费后塑料包装被丢弃在大自然中,以欧洲为例,所有的塑料包装回收率仅为22.5%,到2025年以期达到50%。

FEATURES

特色

- 1 Boretech rigid plastic recycling system can process a wide variety of plastic, with process design proven over the years. With a hot chemical washing module, the washing line can achieve better and more consistent quality for the end product.
 - 2 The entire plastic washing line can be equipped with a DCS system and PLC control to minimize the usage of manpower.
 - 3 The washing line is also designed with a chemical water circulation system and an inline rinse water circulation system to reduce carbon footprint.
 - 4 The washing line has a one-button start and stops design that makes it much easier on operation and maintenance.
- 1 宝绿特硬杂塑料回收清洗线可处理塑料种类广泛,清洗工艺成熟,配备药剂热洗模块,物料清洗效果更佳,产出成品品质稳定,洁净度高。
 - 2 整线运行可采用智能化控制,集成PLC电控系统、最大化减少现场操作用工。
 - 3 节能环保,配备热洗药剂循环系统,清洗水在线循环系统。
 - 4 系统运行操作简单,一键开启运行模式,易损件及备件稳定耐用,日常检修维护便利。

1 PP/PE ROPE RECYCLING LINE

PP/PE化纤揽绳回收清洗线

The PP / PE rope recycling line is suitable for the recycling ropes mainly composed of PP / PE. By going through a series of shredding, crushing, multi-floating separation, and friction washing, flocculent PP / PE can be obtained which can be directly used for filament production after granulation. The process also be used for recycling PP / PE film and woven bag.

宝绿特PP/PE揽绳回收清洗线,适用于以高分子量聚乙烯,聚丙烯为主要组成成分的海洋废弃揽绳回收清洗,通过撕碎,粉碎,多道沉浮分选以及摩擦清洗后,可获得絮状PP/PE的原料,后道加以造粒可直接用于长丝生产。该制程也可用于PP/PE薄膜和编织袋,生活杂膜清洗。



The capacity of PP/PE Rope Recycling Line: 500 – 2000 kg/h

PP/PE揽绳回收清洗线处理量: 500 – 2000 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意,实际依据原料状况及实际厂况排布

2 RIGID PLASTIC (HDPE) RECYCLING LINE 硬杂塑料(HDPE专用)高品质回收清洗线

Rigid Plastic Recycling Line, is suitable for recycling daily use rigid plastic (especially those with high recycling value such as HDPE milk container / small HDPE blue container as well as 2.5L motor oil containers.) This washing line can greatly increase the value of the final product and belongs to our high-end equipment series.

硬杂塑料高品质回收清洗线,适用于日常生活消费产生的硬质塑料,特别针对高回收价值的HDPE牛奶瓶/小型HDPE蓝桶,且可处理日常硬杂塑料,甚至2.5L的机油壶料,属于硬杂塑料清洗线中高端系列的回收清洗工艺。



The capacity of rigid plastic (HDPE) recycling line: 1500~3000 kg/h
硬杂塑料(HDPE)专用高品质回收清洗线处理量: 1500~3000 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意,实际依据原料状况及实际厂况排布

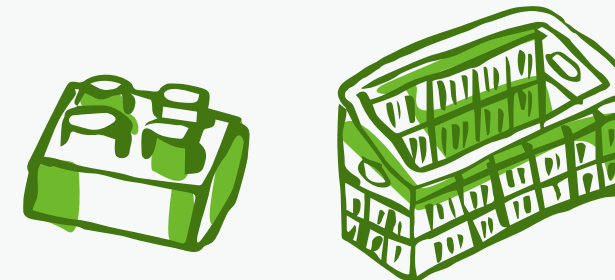
3 RIGID PLASTICS RECYCLING SYSTEM 城市日杂硬塑料回收清洗线

PE / PP / LDPE / HDPE / PO / PS / EPS / ABS / PA / PC / PVC

Boretech offers rigid waste plastic washing line is mainly used to recycle plastic products used in daily life. Through the classification, crushing, and washing, clean and reusable materials are obtained for downstream use for a hard plastics close loop. The raw materials that can be processed by the system include:
- PE、PP、LDPE、HDPE、PO、PS、EPS、ABS、PA、PC、PVC
The commonly seen products made from the materials above are hollow consumer goods, plastic toys, small plastic household goods, blue plastic vats, etc.

宝绿特城市日杂硬废塑料回收清洗线主要用于回收日常生活消费使用的塑料制品,通过整个制程的分类,粉碎,清洗获得干净的可再生原料,用于下游再利用,实现硬杂塑料循环再生,该系统可处理原料包括:
- PE、PP、LDPE、HDPE、PO、PS、EPS、ABS、PA、PC、PVC

由以上原料制成较为常见的制品有:
中空类消费品,塑料玩具,
小型塑料居家用品,
蓝色塑料大桶等。



The capacity of the system: 1500~3000 kg/h
城市日杂硬塑料回收清洗线处理量: 1500~3000 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意,实际依据原料状况及实际厂况排布

4 RIGID PLASTICS AND PP/LDPE FILM RECYCLING SYSTEM

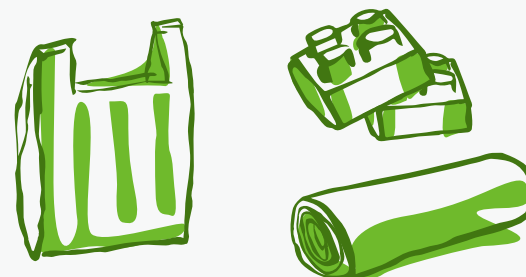
日常硬杂塑料及薄膜一体式回收清洗线

Boretech offers rigid waste plastic and film washing system is mainly used to recycle plastic products and waste film used in daily life. (eg. PE, LDPE, HDPE, PO) Through the classification, crushing, and washing, clean and reusable materials are obtained for downstream use for a hard plastics and film plastic close loop.

The process design of this recycling line can process rigid plastics and waste LDPE/PP film products, with two functions are integrated into a process, to maximize the production and utilization of equipment. The raw materials that can be processed by the system include: post-consumer hollow bottle plastic products, LDPE, LLDPE, HDPE, BOPP film, PP woven bags, garbage bags and shopping bag

宝绿特日常硬杂塑料及LDPE薄膜一体式回收清洗线,主要用于回收清洗日常生活消费产生的硬质塑料以及废旧LDPE/PP薄膜等物料(如PE、LDPE、HDPE、PO)。通过分类、粉碎、清洗获得干净的可再生原料,用于下游再利用,实现硬杂塑料、薄膜塑料的循环再生。

该条产线工艺设计可同时处理硬质塑料与废旧LDPE/PP薄膜制品,一机两用,达到设备生产利用的最大化,可处理原料主要包括消费后的中空类瓶状塑料制品,LDPE、LLDPE、HDPE、BOPP薄膜,PP编织袋,垃圾袋,购物袋。



The capacity of the system (Rigid Plastics): 1000~1500 kg/h

The capacity of the system (Film): 500~600 kg/h

硬杂塑料处理量:1000-1500 kg/h

薄膜类回收处理量:500-600 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意,实际依据原料状况及实际厂况排布

5 PC/ABS HOME APPLIANCE PLASTIC WASHING LINE

PC/ABS塑料家电拆解回收清洗线

PC / ABS Home Appliance Plastic Washing Line, this line is suitable for recycling PC / ABS that is been disassembled from home appliances. This washing line can greatly increase the value of the final product and belongs to our high-end equipment series.

PC / ABS 家电拆解清洗回收线,适用于家电拆解后的PC/ABS塑料壳体的回收清洗,通过该清洗线的作业能有效提升最终塑料产品质量,该工艺属于硬杂塑料回收清洗线中高端系列的回收清洗再利用。



The capacity of PC/ABS Home Appliance Plastic Washing Lin: 1500 ~3000 kg/h

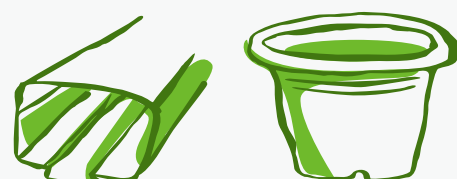
PC\ABS家电拆解清洗回收线处理量:1500-3000 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意,实际依据原料状况及实际厂况排布

6 IRREGULAR PLASTIC RECYCLING LINE (COLD WASH) 日杂不规则塑料冷洗回收清洗线

Boretech offers irregular plastic recycling line is mainly used to recycle rigid plastic products used in daily life. (eg. PE、PP hollow consumer goods, pipe, bucket, home appliance cover)

日杂不规则塑料冷洗回收线,适用于日常生活中产生的硬质塑料垃圾如PE、PP类中空塑料瓶、盆、桶、型材(管材、板材)、机头料、家电拆解壳等硬杂塑料。



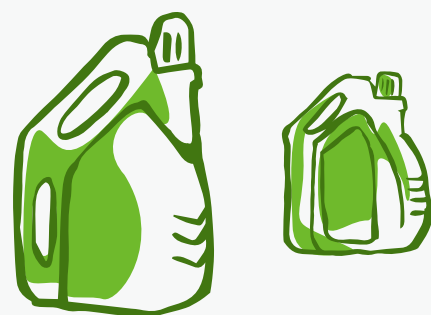
The capacity of Irregular Plastic Recycling Line: 1500 kg/h-3000 kg/h
日杂不规则塑料冷洗回收线处理量: 1500 kg/h-3000 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意, 实际依据原料状况及实际厂况排布

7 PE MOTOR OIL CONTAINER RECYCLING LINE PE机油壶回收清洗线

Boretech Motor Oil Container Recycling Line is mainly used for processing post-consumer motor oil containers. By going through a series of screening, crushing and washing this line is able to turn volume at 2.5L or smaller used container into clean reusable resource. These type of motor oil are most commonly made of polyethene and processed material can be again made into roto-molding, extrusion, pallet, plastic traffic cone etc.

宝绿特机油壶回收清洗线主要用于回收消费后的汽车用机油壶料,一般可处理的机油壶单个容量在2.5L左右,该线可同时用于PP\HDPE中空类($\leq 2.5L$)塑料回收清洗,通过系统的筛分,粉碎,清洗等工艺获得干净的原料再生利用。机油壶一般多为PE材料,回收后的原料可用于滚塑,注塑,挤塑,吹塑等。



The capacity of PE Motor Oil Container Recycling Line: 500-1000 kg/h
PE机油壶回收清洗线处理量: 500 -1000 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意, 实际依据原料状况及实际厂况排布

8 LDPE/PP FILM PLASTIC WASHING LINE LDPE/PP膜类专用回收清洗线

LDPE / PP film recycling line, is suitable for recycling of waste LDPE, LLDPE, HDPE, BOPP film / PP woven bags / garbage bags / shopping bags in daily life.

薄膜类回收清洗线,适用于人类日常生活中产生废旧LDPE、LLDPE、HDPE、BOPP薄膜 / PP编织袋 / 垃圾袋 / 购物袋的回收清洗再生。



The capacity of LDPE/PP film plastic washing line: 500-1500 kg/h
LDPE/PP膜类回收清洗线处理量: 500-1500 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意, 实际依据原料状况及实际厂况排布

9 PA FISHING NET RECYCLING LINE PA渔网回收清洗线

This process is mainly used for the recycling of PA fishing nets with different shapes and sizes. It is highly efficient with a low loss rate. Because of the high strength, corrosion resistance, and non-absorbent properties of PA, through the sorting, crushing, hot washing, friction, floating processes are obtained 8-12mm scraps and then made into granules, which can be used in downstream nylon applications, such as automobiles accessories, bearings, glasses frame, etc.

该制程特别针对海洋渔业中的PA渔网的回收,可处理大小,形状不一的各式废旧渔网,损耗率低。PA塑料因其强度高、抗腐蚀、不吸水的特性,在通过分拣,粉碎,热洗、摩擦、漂浮等工序后可获8-12mm的细碎料,再制成颗粒,可用于下游工业尼龙的应用,譬如汽车、轴承、眼镜框架等。



The capacity of PA Fishing Net Recycling Line: 300 - 1500 kg/h
PA渔网回收清洗线处理量: 300 - 1500 kg/h

The 3D flow chart is a general process flow, it will be designed according to the raw material condition and the customer demand.
3D流程图仅为一般工艺流程示意, 实际依据原料状况及实际厂况排布

10 FUNCTIONAL MACHINE FOR RIGID PLASTIC & FILM PLASTIC RECYCLING LINE

杂塑清洗功能性单机

Floatation Tank 浮料漂洗槽

It is suitable for separating floatable material such as PP / HDPE / PE. It is divided into three designs: ordinary, shallow and deep water. Compared with the traditional floatation tank, the special designed discharge wheel could greatly reduce water consumption. The floatation tank platform adopts a grid barrier design, the guardrail is made of a curled round tube for better safety and easy installation.

适用于PP / HDPE / PE等浮水料的漂洗,分为普通,浅水及深水三种设计,与一般浮洗槽相比,本机排料拨轮设计将排水量大为降低,漂洗槽平台采用格栅式设计,护栏采用圆管卷曲而成,符合人体工学设计,安全性佳,模块化组装结构,维护安装更加方便。



Input capacity
处理量 300-3000 kg/h

Inclined Turbo Washer 倾斜式摩擦机

For PET / HDPE / PP washing purpose, with a double feature of washing and drying. The main body is designed with fasten style installation, mesh with easy dismount and replacement ability. The mesh is also equipped with a self-cleaning mechanism and anti-plugging feature to keep the unit at a consistent high performance.

适用于PET / HDPE / PP等材质的硬塑料摩擦清洗,具备快速摩擦清洗与脱水双功能,主体采用分段式组装设计,筛网可拆卸式设计,更换便捷,配置筛网自动清理、防堵装置,时刻保持高效运行。



Input capacity
处理量 1000-6000 kg/h

Hydro Washer 高速清洗机

Hydro Washer is a multi-functional unit with friction washing, hot chemical washing and floatation washing all in one, it applicable to PET / HDPE / PP. With a small footprint needed and a special design, it is a high ability to remove residual/chemical.

高速清洗机集摩擦洗,热洗,漂洗功效于一体,应用于PET / HDPE / PP等材质的清洗,占地空间小,依托特殊设计的内部结构,在漂洗功能下,药剂残留去除率高,清洗能力大大增强。

Input capacity
处理量 1000-4000 kg/h



Spin Washer 多功能杂塑清洗机

It is suitable for the separation and washing of hard plastics and films to remove sediment, impurities, and other pollutants in materials to obtain clean plastics. The mesh with easy dismount and replacement ability at the same time it has a self-cleaning mechanism and anti-plugging feature. It has an efficient cleaning effect on materials with high complex composition and heavy pollutions, such as aluminized composite film. Multiple-use can replace the squeezing machine under the washing function.

适用于硬杂塑,薄膜的干式清洗及湿式清洗,去除物料中的泥沙,杂质等污染物以获得干净的原料。筛网可拆卸式设计,更换便捷,同时具备自洁功能、配备防堵装置;对于原料组成复杂性高及特别重污染的物料,具有高效的清洁效果,譬如镀铝复合膜的处理。在湿式清洗效果下,组合使用可替代挤干机。



Input capacity
处理量 500-2000 kg/h

Dryer 脱水机

Suitable for PET / HDPE / PP and other rigid material. The main body is designed with fasten style installation, mesh with easy dismount and replacement ability at the same time it has a self-cleaning mechanism and anti-plugging feature to keep the unit at a consistent high performance.

适用于PET / HDPE / PP等材质的硬料脱水,主体采用分段式组装设计,磨损的壳体更换方便;筛网可拆卸式设计,更换便捷,同时具备自洁功能、配备防堵装置,时刻保持高效运行。



Input capacity
处理量 500-3000 kg/h

Squeeze Dryer 挤干机

It is suitable for separating floatable material such as PP / HDPE / PE. It is divided into three designs: ordinary, shallow and deep water. Compared with the traditional floatation tank, the special designed discharge wheel could greatly reduce water consumption. The floatation tank platform adopts a grid barrier design, the guardrail is made of a curled round tube for better safety and easy installation.

适用于PP / HDPE / PE等浮水料的漂洗,分为普通,浅水及深水三种设计,与一般浮洗槽相比,本机排料拨轮设计将排水量大为降低,漂洗槽平台采用格栅式设计,护栏采用圆管卷曲而成,符合人体工学设计,安全性佳,模块化组装结构,维护安装更加方便。



Input capacity
处理量 500-700 kg/h