

HOT ALKALI WASHER ONLINE WATER RECYCLING TREATMENT AND REUSE SYSTEM (3T/H) TT-WTS



During the plastic cleaning process, Hot Alkali Washer Online Water Recycling Treatment And Reuse System is the usual method for cleansing the plastic, resulting in the production of hot alkali wastewater.

If this wastewater is directly sent to the treatment station, it requires adding more chemicals and heat, substantially increasing the station's treatment expenses. To address this, we've installed online water treatment devices, significantly reducing energy consumption, minimizing chemical usage, and ultimately cutting down operational costs.

APPLICATIONS

- **Plastic Recycling Plants:** Designed for hot alkali washing lines in PET and HDPE recycling facilities.
- **Bottle and Packaging Recycling:** Ideal for reusing water in PET bottle and rigid plastic washing processes.
- **Water Reuse Systems:** Recycles up to 80% of hot alkali wastewater directly back into cleaning lines.
- **Industrial Wastewater Reduction:** Reduces chemical and energy consumption compared to conventional treatment stations.
- **Sustainable Operations:** Lowers operational costs while maintaining stable water quality for efficient cleaning.
- **Eco-Friendly Facilities:** Supports compliance with environmental regulations by minimizing effluent discharge.

FEATURES

Advantages of Online Recycling Technology

Using online recovery in water treatment allows up to 80% of hot alkali water from the cleaning process to be reclaimed and reused. Benefits include:

- No additional treatment agents required, enabling recovery of chemicals and reducing consumption.
- Heat recovery and streamlined processing that minimize heat loss and cut heating energy use.

- Wastewater reuse that lowers fresh water demand and treatment costs.
- High automation that maintains chemical concentration automatically.
- Stable water quality that improves cleaning effectiveness.

Design Principles

- Select a process route based on sewage quality and treatment criteria, using advanced technology to meet discharge standards.
- Leverage existing facilities to minimize investment while considering plant aesthetics.
- Prioritize easy operation, simple maintenance, and reliable, high-performance equipment.

Design Parameters

- **Wastewater source:** Hot alkali washing from the cleaning line of a plastic recycling plant
- **Designed treatment capacity:** 3 m³/h

Treatment Technology

The hot alkali water filtration system removes suspended solids while retaining the chemical agent. The process combines precipitation and filtration.

Process Flowchart

Process flowchart of hot alkali water filtration system

Main Process Introduction

a. Grille System (Round Screen)

A circular vibrating screen at the hot washing tank discharge separates larger particles from the outgoing alkali water. This improves downstream precipitation and reduces wear on equipment.

- **Model:** YZS1000 (1 set)
- **Main material:** SUS304

Circular vibrating screen used at hot wash discharge

b. Sedimentation Tank

The vertical-flow sedimentation tank receives water from a central inlet at the top. An umbrella baffle disperses flow evenly so water rises uniformly, allowing gravity separation of solids and clarified water. A hot water tower stores purified alkaline water. An automatic dosing device adds a small amount of agent to optimize pH.

- **Sedimentation tower:** SLCDT-3000 (1 unit)
- **Hot water tower:** RST-3000 (1 unit)
- **Material:** SUS304

c. Filtration System

An intermediate water tank feeds a filter pump and filter press. Filtration through filter cloth removes fine suspended particles, clarifies water, and dewateres sludge for further handling.

- **Filter press:** 630 (1 unit)
- **Filter:** ZQX-30 (2 units)

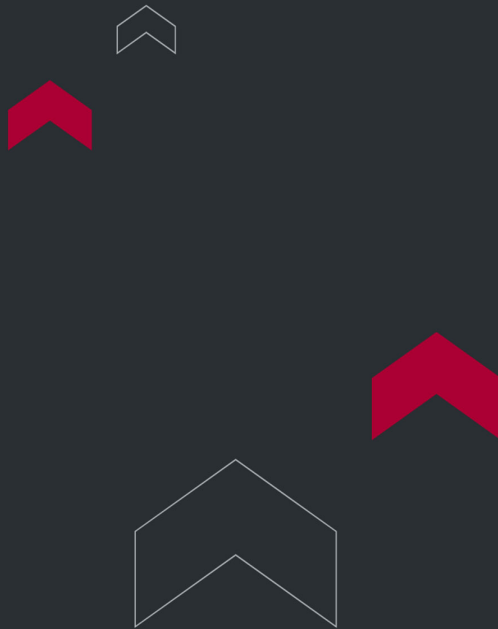
Filter press and filtration units for suspended solids removal

d. Dosing System

The dosing skid includes a metering pump, reagent barrel, and stirrer for precise chemical addition. An online pH device controls automatic dosing to keep pH within the required range for hot alkali washing.

- **Automatic dosing device:** ZDJYZZ-1000 (1 unit)
- **Material:** SUS304

Automatic chemical dosing system with metering pump and mixer



Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 

Phone: +971 488 19252
Email: me@torontech.com

