



PET BOTTLE WASHING LINE

PET Bottle Washing Line - Recycling PET bottles remains a significant venture in the recycling sector, even amid low prices for PET raw materials. Our team has extensive expertise in the global PET recycling industry. Our recycling initiative aims to lower operational expenses while ensuring the production of top-notch PET flakes.

Leveraging years of manufacturing Plastic Recycling Machines and incorporating invaluable input from customers regarding PET bottle cleaning processes, our company, without using the specific company name, consistently enhances PET recycling solutions. This commitment results in delivering customers with high-volume, high-quality bottle flakes, and cost-effective recycling setups.

APPLICATIONS

- **Post-Consumer PET Recycling:** Convert discarded PET beverage bottles into clean flakes ready for reuse.
- **Food & Beverage Packaging:** Provide recycled flakes suitable for bottle-to-bottle processes and food-grade packaging.
- **Textile Industry:** Transform PET flakes into polyester fibers, yarns, and fabrics.
- **Plastic Sheet & Film Production:** Supply rPET flakes for thermoforming sheets, films, and packaging trays.
- **Strapping & Injection Products:** Support the manufacturing of PET strapping bands, containers, and molded components.
- **Municipal & Industrial Waste Recycling:** Process PET bottles collected from urban and industrial waste streams.
- **High-Purity Flake Production:** Deliver stable, contaminant-free PET flakes for extrusion and molding applications.
- **Circular Economy Solutions:** Promote closed-loop recycling to reduce raw material dependency and environmental impact.

FEATURES

Chain Plate Conveyor

CHAIN PLATE CONVEYOR

Wide chain-plate conveyor engineered for PET bottle infeed, delivering stable, high-volume transport of baled or loose bottles to the line's first stage.

De-Baler

DE-BALER

Automatically opens and fluffs compacted bottle bales to ensure even downstream feeding and higher washing efficiency.

Belt Conveyor

BELT CONVEYOR

Inverter-controlled belt ensures smooth transfer to subsequent stations.

- **Application:** Bottle conveying
- **Belt Width:** 1000 mm
- **Material:** PVC
- **Motor Power:** 2.2 kW

Trommel Screen

TROMMEL

Removes stones, dust, caps, and small metals prior to washing to protect equipment and elevate purity.

- **Barrel Ø:** 1500 mm | **Length:** 5000 mm
- **Hole Ø:** 50 mm
- **Motor Power:** 5.5 kW
- **Build:** Galvanized carbon-steel drum with carbon-steel frame

Ferrous Remover Magnet

FERROUS REMOVER

Over-belt magnet extracts iron, chromium, manganese, and other ferrous metals to protect downstream cutters and pumps.

- **Power:** 3 kW

Label Remover

LABEL REMOVER

Dry, high-yield label removal—no water, zero flake loss.

- **Removal Rate:** > 90% (standard & compressed bottles)
- **Motor Power:** 15 kW | **Suction Fan:** 5.5 kW
- **Blades:** 42 rotary (378 teeth); 180 fixed (1080 teeth)

Pre-Washer Drum

PRE-WASHER

Reduces fines and light contaminants to relieve load on downstream hot wash.

- **Tank:** SS304 | Ø1500 mm × 6000 mm
- **Main Motor:** 7.5 kW | **Screw:** 2.2 kW, Ø250 mm

Screw Loader with Screening

SCREW LOADER

Multiple rolling screws convey and simultaneously screen; fines and debris fall through to a dedicated collection port to keep the line clean.

Disk Separator

DISK SEPARATOR

Bouncing-screen action separates loose labels, caps, and fines from PET bottles prior to cutting and wash.

Bottle Sorting Machine

BOTTLE SORTING MACHINE

Automated sorting by customer-specified criteria (e.g., color) to maximize rPET quality and stability in downstream processing.

Manual Sorting Stations

MANUAL SORTING

Dual manual stations provide final QA removal of off-spec materials before size reduction.

Bottle Crusher

CRUSHER

Converts bottles into uniform flakes sized for efficient washing and drying performance.

Flake Screw Loader

SCREW LOADER

- **Function:** PET flake conveying
- **Motor Power:** 4 kW
- **Screw Ø:** 310 mm
- **Product-Contact:** Stainless steel

Separation Floating Tank

SEPARATION FLOATING TANK

Density separation removes PP/PE and other floatables from PET flakes while washing.

- **Screw Loader Motor:** 5.5 kW
- **Thumbwheel:** 3 × 0.55 kW
- **Screw Ø:** 250 mm
- **Product-Contact:** Stainless steel; includes water tank & pump

Label Separator Post-Crush

LABEL SEPARATOR

Secondary stage to strip remaining labels for cleaner PET flake output.

Hot Washer Caustic System

HOT WASHER

Intensive caustic wash to remove glue, oils, and stubborn contamination with continuous in/out flake flow.

- **Motor:** 5.5 kW | **Chamber Volume:** ~4.07 m³
- **Construction:** CS outer, SS inner, rock-wool insulation
- **Conditions:** 1-2% NaOH, 70-90 °C

High Speed Friction Washer

HIGH SPEED FRICTION WASHER

Shear-and-rinse action scrubs away residual glue and fines for superior flake cleanliness.

- **Main Motor:** 30 kW | **Pump:** 1.5 kW
- **Rotor Speed:** 1200 rpm
- **Product-Contact:** Stainless steel

Centrifugal Dryer

CENTRIFUGAL DRYER

High-G dewatering drives flake moisture down to ~2% prior to final hot-air drying.

- **Main Motor:** 22 kW | **Lid Motor:** 0.75 kW
- **Screw Speed:** 2200 rpm
- **Product-Contact:** Stainless steel

Pipeline Hot Air Dryer

PIPELINE DRYER

Final hot-air drying to achieve <1% residual moisture, ready for extrusion or bagging.

- **Heating Power:** 48 kW (steam option reduces electrical load)
- **Blower:** 5.5 kW | **Suction:** 5.5 kW

Vibration Dryer

VIBRATION DRYER

Vibratory sieve removes surface moisture beads and fines for clean, flowable PET flakes.

Intelligent Control System

INTELLIGENT CONTROL SYSTEM

Touchscreen control with safety interlocks and premium components ensures reliable, standards-compliant operation.

- **Standards:** CE / CSA / TUV / SGS / ISO
- **Components:** Schneider circuit breakers, contactors, pushbuttons, pilot lamps
- **Architecture:** Safety interlock logic across the full system
- **Vendors:** LS, Schneider, ABB

TECHNICAL SPECIFICATIONS

Device parameters			
Size	Capacity	Motor Power	Equipment footprint
TT-AWS-PET10	1000kg/h	220KW	250m 2
TT-AWS-PET20	2000kg/h	260KW	350m 2
TT-AWS-PET30	3000kg/h	380KW	500m 2
TT-AWS-PET40	4000kg/h	500KW	700m 2
Unit energy consumption			
Content	Average energy consumption per ton of bottle		
Electricity	70-90KW		
Water	1-1.5T		
Compressed air	0.5-1m3		
Steam (optional)	250-400KG		
Detergent (optional)	4-8KG		
Bottle quality reference			

Description	AA ppm	A ppm
PVC content	≤25	≤100
PE/PP/colored bottle/metal/other	≤75	≤100
Total impurity	≤100	≤200



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