

# TCH-RC4-B500 PET BOTTLES RECOVERY LINE

**BOTTLES TREATMENT : 400 – 500 Kg/h in entrance**

**INSTALLED POWER : ~ 205 Kw**

## **CONSTITUTION OF RECOVERY LINE PET BOTTLES (possibility of recycling)**

**1- CAPACITY** of PET bottles recovery of **400/500** Kg/h  
Material in entrance

**2- GENERAL CHARACTERISTICS** : material in entrance

- I. PET bottles of 0.25 ÷ 2 L. of Volume
- II. Colored bottles will be manually separated on selection table
- III. It is possible to recover bottles containing cooking oil until 10 ÷ 15 %
- IV. screwed cap Pe HD – PP
- V. Not acceptable :
  - PVC/EVA aluminum cap
  - PVC bottles
  - giant PET bottles 5 ÷ 20 l

VI. OPS < DPE, PP, film and paper labels  
VII. Maximum percentage of contamination 10/12%

### **3. COMPOSITION OF THE LINE devided in groups**

- A- Preparation and separation group
- B- Crushing and fragmentation group
- C- Cold and hot washing group
- D- Cold washing and discharging group
- E- Drying and dehumidification Group
- F- Storage group

### **4. ENVIRONMENTAL CONDITIONS:**

- Inside location
- No dangerous area
- Humidity: 85% without condensation
- Temperature: 0-45 C°

### **5. WORK CONDITIONS :**

- installed power : ~ 205 Kw
- electric energy : Three phase 380 V, 50 Hz
- Circulating water volume: 2 Ton/h
- Consummated water for the plant reintegration: 0.07 Ton/h
- Recycled water pressure: 0.4 Mpa
- Air pressure: 8 ÷ 10 Bar

## **6. OTHER CONDITIONS**

- Technical documentation will be supplied in Italian, English or French.

## **COMPOSITION OF THE INSTALLATION**

### **A- PREPARATION AND SEPARATION GROUP**

- 1- Belt conveyor
- 2- Trommel
- 3- Belt conveyor
- 4- Labels separator
- 5- Manual selection table

### **B- CRUSHING AND FRAGMENTATION GROUP**

- 1- Belt conveyor
- 2- Water grinder shredder
- 3- Screw loader to the separation tank

### **C- COLD AND HOT WASHING GROUP**

- 1- Washing and separating tank with screw loader
- 2- Hot washing tank
- 3- Sorting screw loader

### **D – COLD WASHING AND DISCHARGING GROUP**

- 1- High speed frictionating tank
- 2- Discharging screw loader
- 3- First washing and floating tank
- 4- Second washing and floating tank
- 5- Final washing tank

### **E - DRYING AND DEHUMIDIFICATION GROUP**

- 1- Horizontal spin-dryer
- 2- Pipeline dryer
- 3- Dust remover

### **F – STOCKAGE GROUP**

- 1- Big bags support with cyclone

The specifications of this offer are indicative and may be modified by the manufacturer, for an optimal utilization of the installation

**SYNTHETIC DESCRIPTION OF THE COMPLETE INSTALLATION  
PET BOTTLES RECOVERY LINE**

**Composed by :**

**GROUP A – PREPARATION AND SEPARATION**

A/1	<b>BELT CONVEYOR</b>	With steel frame and belt made in PVC Width: 475 mm Power: 1.5 Kw <b>Function / characteristics</b> To bring the bottles to the Trommel
-----	----------------------	---

A/2	<b>TROMMEL</b>	Motor: 3 Kw Net diameter: 20-50 mm Mesh diameter: 1000 mm Length: 4 mt In carbon steel <b>Function / characteristics</b> This machine runs in circle by a motor, separating and cleaning the bottles from impurities. Small scraps and metal parts escape from the holes of Trommel.
-----	----------------	--

A/3	<b>BELT CONVEYOR</b>	<p>With steel frame and belt made in PVC  Width: 475 mm  Power: 1.5 Kw  <b>Function / characteristics</b>  To bring the bottles to the labels separator</p>
-----	----------------------	---

A/4	<b>LABELS SEPARATOR</b>	<p>Motor: 7.5 Kw  Fans: 3 Kw  <b>Function / characteristics</b>  To remove labels from bottles.  Treatment up to 90% efficiency for paper or plastic ones</p>
-----	-------------------------	---

A/5	<b>MANUAL SELECTION PLATFORM</b>	<p>Motor: 1.5 Kw  Dimensions: 5000 x 475 x 900 mm  Continuous speed control  <b>Function / characteristics</b>  Selection of different color bottles. Selection of large size impurities and separation of metal parts (if any)</p>
-----	----------------------------------	---

**GROUP B – CRUSHING AND FRAGMENTATION**

B/1	<b>BELT CONVEYOR</b>	<p>With steel frame and PVC belt  Width: 475 mm  Power: 1.5 Kw  <b>Function / characteristics</b>  After labels separation and manual selection transports the bottles to water grinder</p>
-----	----------------------	---

		<p>Motor: 37 kw  Fix blades 6 pcs  Rotating blades 10 pcs</p>
--	--	---

B/2	<b>WET GRINDER SHREDDER</b>	<p>Blades material: SKD11  Speed: 600 rpm  Grid Ø 16  Dimensions of flakes in exit: 14 mm</p> <p><b>Function / characteristics</b>  Crushing bottles with many inputs of water; grinder with two entrance levels with a design for noise resistance, high performance and low power consumption</p>
-----	-----------------------------	---

B/3	<b>SCREW LOADER TO THE SEPARATION TANK</b>	<p>Motor : 2.2 Kw  Ø : 250 mm  In stainless steel</p> <p><b>Function / characteristics</b>  Conveying of PET flakes to the washing tank for subsequent separation of the impurities of small size, dust</p>
-----	--	---

**GROUP C- COLD AND HOT WASHING**

C/1	<b>WASHING AND SEPARATING TANK With screw loader to the hot washing tank</b>	<p>No. of wheels: 3 pcs  Wheel motor : 0.55 Kw  Screw loader motor : 4 Kw  Diameter: 219 mm  Tank complete of floating and agitation motor.  In stainless steel</p> <p><b>Function / characteristics</b>  Conveys, shakes the flakes, facilitating the falling of remained impurities and separate different materials.</p>
-----	--	---

C/2	<b>CONTINUOUS HOT WASHING TANK WITH SODIUM AND ADDITIVES</b>	<p>Motor : 4 Kw  Tank dimensions: 1.4 x 2 mt  Tank 3 m<sup>3</sup> with liquid heated insulated with rock wool  In stainless steel inside</p> <p><b>Function / characteristics</b>  The temperature of the water with sodium hydroxide (1-2%) is normally between 70° and 90°  Inner blades move the hot liquid, allowing the separation of labels glues or resins and different impurities making flakes pure with filing of heavy parts.  This tank is highly insulated to keep heat therein and in the processing circuit of water purification</p>
-----	--	--

--	--	--

C/3	<b>SORTING SCREW LOADER</b>	<p>Motor : 2.2 Kw  Diameter: 219 mm  In stainless steel  <b>Function/characteristics</b>  Screw loader that conveys cleaned flakes to the frictionating tank with discharging of remained impurities.</p>
-----	-----------------------------	---

**GROUP D – COLD WASHING AND DISCHARGING**

D/1	<b>HIGH SPEED FRICTIONATING TANK</b>	<p>Motor : 15 Kw  Strong frictionating  Water pump power: 1.5 Kw  Rotation speed: 1200 rpm  In stainless steel  <b>Function/characteristics</b>  The high speed of blades removes eventual impurities and chemical products remained on flakes.</p>
-----	--------------------------------------	---

D/2	<b>DISCHARGING SCREW LOADER</b>	<p>Motor : 2.2 Kw  Ø: 250 mm  In stainless steel  <b>Function/characteristics</b>  To convey flakes to the first washing and floating tank</p>
-----	---------------------------------	--

D/3	<b>FIRST WASHING AND FLOATING TANK with screw loader</b>	<p>No. of wheels: 3 pcs  Wheel motor : 0.55 Kw  Screw loader motor : 4 Kw  Diameter: 219 mm  Tank complete of floating and agitation motor.  In stainless steel  <b>Function/characteristics</b>  Convey flakes to a further purification from chemical products -labels etc.</p>
-----	--	---



D/4	<b>SECOND WASHING AND FLOATING TANK with screw loader</b>	Equal to the first one <b>Function/characteristics</b> Repeats the purification of flakes.
-----	---	--

D/5	<b>FINAL WASHING TANK</b>	Motor: 3 Kw Diameter of screw: 196 mm In stainless steel <b>Function/characteristics</b> Depurates again the flakes and removes sodium
-----	---------------------------	--

**GROUP E – DRYING AND DEHUMIDIFICATION**

E/1	<b>HORIZONTAL SPIN-DRYER</b>	Power: 11 Kw Motor power for cover opening : 0.37 Kw Speed: 2200 rpm High speed tangential action Possibility to remove blades In stainless steel <b>Function / characteristics</b> Specifically designed to provide excellent drying of PET flakes with minimum residual moisture (2%).
-----	------------------------------	---

E/2	<b>PIPELINE DRYER</b>	Heating motor : 36 Kw or boiler heating Fan power: 5.5 Kw Aspiration motor power: 4 Kw <b>Function / characteristics</b> PET flakes will be dried again to reduce/eliminate the humidity level ( $\leq 1\%$ ).
-----	-----------------------	--

E/3	<b>DUST REMOVER</b>	<p>Motor of cyclone : 4 Kw  In stainless steel  <b>Function - characteristics</b>  Removes dust and eventual small labels residues on PET flakes.</p>
-----	---------------------	---

**GROUP F - STORAGE**

F/1	<b>BIG SAC STRUCTURE WITH CYCLONE</b>	<p>Cyclone motor: 4 Kw  Silos volume: 1 m<sup>3</sup>  In stainless steel  <b>Function /Characteristics</b>  To stock the flakes  Practice to replace the bag</p>
-----	---------------------------------------	---

**GROUP G – (OPTIONALS)**

G/1	<b>COLD WATER FILTRATION GROUP</b>	<p>Filtration treatment of cold water through continuous rotating disks to 200μ  <b>Function/Characteristics</b>  Complete with pump, electric panel and installation diagram</p>
-----	------------------------------------	---

G/2	<b>HOT WATER FILTRATION GROUP</b>	<p>Filtration treatment of hot water through continuous rotating disks to 200μ  <b>Function/Characteristics</b>  Complete with pump, electric panel and installation diagram</p>
-----	-----------------------------------	--

G/3	<b>BOILER</b>	<p>Boiler for hot water  <b>Function/Characteristics</b>  Capacity: 200 Kg/h</p>
-----	---------------	--

		Steam temperature: 170 °C Steam pressure: 0.7 Mpa Dimensions: 1080 x 1180 x 1900 mm Weight: 650 Kg
--	--	---

The installation can be supplied complete of cold and hot water treatment and heated liquid circuit according with the customer, in relation to environmental conditions and to the laws of the country where the line should be installed.

<h2 style="color: blue; margin: 0;">PET BOTTLES RECOVERY LINE 400-500 Kg/h</h2>	
<b>A. PREPARATION AND SEPARATION GROUP</b>	
<ol style="list-style-type: none"> <li>1 BELT CONVEYOR</li> <li>2 TROMMEL</li> <li>3 BELT CONVEYOR</li> <li>4 LABELS REMOVER</li> <li>5 SELECTION TABLE</li> </ol>	
<b>B CRUSHING AND FRAGMENTATION GROUP</b>	
<ol style="list-style-type: none"> <li>1 BELT CONVEYOR</li> <li>2 WATER GRINDER SHREDDER</li> <li>3 SCREW LOADER TO THE SEPARATION TANK</li> </ol>	
<b>C . COLD AND HOT WASHING GROUP</b>	
<ol style="list-style-type: none"> <li>1 WASHING AND SEPARATING TANK WITH SCREW LOADER</li> <li>2 HOT WASHING TANK</li> <li>3 SORTING SCREW LOADER</li> </ol>	
<b>D. COLD WASHING AND DISCHARGING GROUP</b>	
<ol style="list-style-type: none"> <li>1 FRICTIONATING AND WASHING TANK</li> <li>2 DISCHARGING SCREW LOADER</li> <li>3 FIRST WASHING AND FLOATING TANK WITH SCREW LOADER</li> <li>4 SECOND WASHING AND FLOATING TANK WITH SCREW LOADER</li> <li>5 FINAL WASHING TANK</li> </ol>	
<b>E. DRYING AND DEHUMIDIFICATION GROUP</b>	
<ol style="list-style-type: none"> <li>1 HORIZONTAL SPIN-DRYER</li> <li>2 PIPELINE DRYER</li> <li>3 DUST REMOVER</li> </ol>	
<b>F. STORAGE GROUP</b>	
<ol style="list-style-type: none"> <li>1 BIG BAG SUPPORT WITH CYCLONE</li> </ol>	