



# ECOMACCHINE

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**E-mail message n°:**

**a/to:** MODOTec Water Technology Ltd.

**data/date:** 10/12/2018

**e-mail:** [talp@modotec.co.il](mailto:talp@modotec.co.il)

**da/from:** Andrea SANNA

**att. di/of:** Ms. Tal POLLAK

**OGGETTO/SUBJECT:** Your R.f.Q. for Dimona W.W.T.P. – ISRAEL.

Our offer no. 18-741/AS

*Dear Ms. Pollak,*

*In reply to your enquiry, please find herewith enclosed our quotation.*

*Should you need any further information, please do not hesitate to contact us.*

*Looking forward to hearing from you soon, best regards.*

**ECOMACCHINE S.r.l.**

Sales Dept., Andrea SANNA (Mr.)

**SINGLE BELT GRAVITY DECK**

**C/W FREESTANDING MOTORIZED MIXER (Ø800x1250 MM.)**

**MODEL EM 100/2100-M3NV**

**1. Process and operation principles**

The operation principle is to drain the water by gravity and take the sludge away by means of a polyester-made belt that continuously slides supported by a grating made of plastic material. The separating process can be briefly divided into the following phases:

**1.1 *Mixer.***

It is made of painted carbon steel and composed by a cylindrical casing and a propeller, which can properly mix the sludge with the polyelectrolite solution. In this way a flocks suspension is obtained from which the clear water is released on the filtering cloth.

**1.2 *Sludge distribution***

The flocculated sludge is distributed onto the belt by means of a proper device (flow casing).

**1.3 *Drainage by gravity***

The water separates from sludge by gravity. There are some triangular devices along the belt course to move the sludge and make the water separation easier.

**1.4 *Cloth washing system***

Made up of a spray header pipe equipped with self-cleaning nozzles. The system is placed in a proper tight tank, so that to avoid the aerosol effect.

### **1.5     *Cake breakaway***

The sludge remaining on the belt is taken away by a scraping doctor blade, which is kept in touch with the cloth by an adjustable springs system.

## 2. Technical and dimensional data

<b>2.1</b>	<b>Sludge type and characteristics</b>	:	
2.1.1	Dry delivery	: Kg/d	
2.1.2	Sludge concentration	: %	
2.1.3	Sludge amount	: m <sup>3</sup> /d	
2.1.4	Working hours	: hr/d	
2.1.5	Feed flow rate	: m <sup>3</sup> /hr	
2.1.6	Dry delivery	: Kg/hr	600
2.1.7	Filtered sludge required concentration	: %	
2.1.8	Polymer specific dosage	: gr/Kg	3 ÷ 6
<b>2.2</b>	<b>Gravity deck model and dimensions</b>	<b>: EM 100</b>	<b>2100</b>
2.2.1	Clothes width	: mm.	2100
2.2.2	Filtering clothes speed	: mt/min.	1.6 ÷ 8.5
2.2.3	Machine weight	: Kg	2300
2.2.4	Overall width	: mm	2783
2.2.5	Overall length	: mm	5423
2.2.6	Height	: mm	1790
<b>2.3</b>	<b>Mixer characteristics:</b>		
2.3.1	Diameter	: mm	800
2.3.2	Height	: mm	1250

### 3. **Required services**

<b>3.1</b>	<b><i>Cloth washwater:</i></b>		
3.1.1	Head	: bar	5
3.1.2	Consumption	: m <sup>3</sup> /hr	5÷6
<b>3.2</b>	<b><i>Services air:</i></b>		
3.2.1	Mass	: lt/min.	25
3.2.2	Head	: bar	7
<b>3.3</b>	<b><i>Polymer:</i></b>		
3.3.1	Pump delivery	: lt/hr	
3.3.2	Head	: bar	
<b>3.4</b>	<b><i>Electric uses:</i></b>		
3.4.1	Equipment voltage	: V-ph-Hz	380-3-50
3.4.2	Auxiliary services voltage	: V	110
3.4.3	Installed powers for belt traction	: kW	0.75
3.4.4	Freestanding motorized mixer	: kW	0.75

### 4. **Supply description**

#### 4.1 ***Motorized mixer***

Freestanding cylindrical powered mixer, made of painted carbon steel, equipped with motorized impeller and manually-driven variable speed epicyclic gearbox.

4.2 Single-belt gravity deck model EM 100/2100, as detailed in the general schema attached hereto, consisting of:

- supporting frame;
- sludge loading hopper with regulating and spreading device;
- series of triangular devices made of plastic material;
- grating made of plastic material to support the belt;
- powered system for belts traction;
- filtering clipper seam belt made of polyester;
- cloth transmission unit;
- cloth centering devices, pneumatic-modulating type;
- cloth tension system with screw extending device;
- sludges scraping doctor blade made of special plastic material;
- washing system with self-cleaning nozzles;
- water collection tanks;
- electro-pneumatic equipment on the machine;
- terminal box for signals re-transmission.

#### **4.2. *Manufacture features and details***

- ***Frame***

Consisting of thick rectangular section pipes made of carbon steel and stiffened and welded to form a rigid and even assembly.

- ***Cylinders***

Rigid, with hot-driven pins and coated by 7 to 8 mm. rectified rubber layer, with the following dimensions:

- traction cylinder : dia. 255 mm.
- correction cylinders : dia. 159 mm.
- tensioning cylinders : dia. 255 mm.

- ***Bearings***

All cylinders are supported by ball bearings, oversized and waterproof by lip seals.

- ***Cloth transmission system***

With epicyclic variable speed gearbox, with speed manual adjustment, the movement is transmitted by means of chain and pinions to the driven roller.

- ***Cloth tensioning system***

With manually adjustable screw system.

- ***Cloth guide system***

A proportional pneumatic probe that keeps the cloth offset within negligible limits controls the cloth running.

- ***Water collecting pans***

They are made of SST AISI 304.

- ***Washing spray header pipe***

It is equipped with self-cleaning nozzles to wash the cloth. The anti-splash casing is made of SST AISI 304.

- ***Surface protection***

The entire machine frame is hot spray galvanized with zinc, after being sand blasted. This kind of protection has shown a particularly efficiency in the time also thanks to the final painting with bi-component polyurethane emails.

- ***Filtering cloth***

The gravity table is equipped with AISI 304 clipper seam cloth.

#### **4.3 *Electric and pneumatic plants on board of the machine***

Electric plant in waterproof casing with terminal strips for all the power cables and signals.

The machine is also equipped with a pneumatic plant complete with reduction filters and manometers to adjust the belts tension and the speed of the trajectory correction devices. All the conduits of the electric cables and the air pipes are made of self-extinguishing PVC, in accordance with the law.

#### **4.4 *Safety and alarms***

The machine is equipped with push buttons and limit switches to give alarm and stop when the belt tend to move out of the rollers (a malfunction of the belt trajectory control system).

As regards the safety, grating panels protects the machine and wherever the operator runs the risk to hurt (EEC regulations) in case of a careless operation.