PRODUCT NAME: **REWISER**

Food waste centralized system for buildings

Worldwide the waste management is a prior problem, particularly if it is food waste. Optimum solution is represented by an efficient collection and recycling of the waste. The exploitation of the waste is strictly connected to its purity. Only a homogenous waste can be efficiently recycled. It is also ascertained that the waste purity is strictly related to the nearness between the collecting tools and the waste production centre.
The REWISER can provide a wise method for Source Separated Collecting System enforcement.

REWISER is a system for centralized food waste collection at building level, is based on the coupling of 2 technologies:

- **FWDs** (Food Waste Disposers), **installed under the kitchen sink of each apartment**. They enable to grind almost all kind of food waste such as: poultry, meat, chicken bones, the remains of fish, vegetables, fruits, pasts, bread, egg shells, etc.;
- **Dehydra system, composed by a dewatering unit coupled with a temporary storage tank**. It is installed in a room at the bottom of the building. A dedicated piping network collects the waste from FWDs and conveys it to the tank which is part of the Dehydra system. The tank collects the waste whose water content is then reduced by the dewatering machine of the Dehydra system.

Accessories elements as diverting valves, storage water heater, oil interceptors could be foreseen as well.

The dehydrating system for multiple apartments buildings, represent a high performing solution for food waste managing policy, because:

- Each household has installed its "collecting tool", the disposer, just in the place where the food waste is produced, the kitchen's sink;
- The food waste is conveyed, through the dedicated drainage line, to an area, provided to the final collection;
- At the final collection point a special tank coupled with an innovative dehydrating machine, controlled by a PLC, performs the waste reduction in volume (-80%) and weight (-50%). The dewatered material, collected in a dedicated bin, deprived of liquid and low fermenting, is now ready to be collected at the scheduled days and hours;
- The collected waste can be efficiently treated for its recycling in anaerobic digesters or in composting centres, for green energy production (biogas) and/or agricultural use (compost).

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PRODUCT NAME: **Food Waste Disposer**

Food waste collection and grinding at kitchen level

Food waste disposer is a key element of the REWISER value chain. It grounds the food waste avoiding the use of buckets and reducing the time each citizen has to dedicate to collect and dispose the food waste.

MINIMUM FEATURES
AC introduction disposer motor HP – 550 Watt – 220-240 V/50 Hz
Grinding capacity: 1200 ml
Grinding parts: stainless steel turntable, swivel impellers and grinding ring
Upgraded grinding system for long vegetable fibres
Air switch built in system to switch ON/OFF the unit
Drain connection diameter 40 mm
Maximum overall dimension: 19 x 33 cm (Ø x H)
Maximum disposer's weight: 9kg

ACCESSORIES ELEMENT : DISPOSER DEFLECTION VALVE FOR DISPOSERS CONNECTION TO THE DRAIN

The FWD can be provided with a Disposer Deflection Valve developed by Ecofast Italia. It is electrically powered at low voltage (24V), and allows to separate the water used for processing the food waste from the other sinks water usage.

Added values of the use of the Disposer Deflection Valve can be summarized as follows:

- It avoids to collect unuseful water in the tank foreseen in the Dehydra System;
- the waste is not mixed with polluting chemicals used for washing and its biogas yields, coming from anaerobic digestion treatment, can be significantly improved;
- the FWD can be installed under a single bowl sink otherwise it is mandatory to install multiple bowl sinks in the kitchen.

INSTALLATION: The FWD drain connection shall be kept not higher than 40 cm from the floor level. Ecofast Italia has designed a dedicated drainage kit.

MAINTENANCE: no regular maintenance is required nevertheless it is suggested the feeding of a batch of ice cubes through the FWD once a week or each fortnight. This helps to keep the unit clean.

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PRODUCT NAME: **Dehydra System**

Food waste dewatering system

Standard DEHYDRA system is composed by a temporary collecting storage tank and one or more dewatering machines. The system is designed to collect, and dewater food waste disposed of in the kitchen with the targets to reduce the weight, volume, and fermentation of food waste, to minimize the labor cost in the food waste management and waste collection, and to perform a real separate collection of the organic fraction enabling further energy-fertilizer production (e.g. biogas, compost) throught biological treatments. Ecofast dewatering system is automaticaly managed by its dedicated software.

CHARACTERISTICS OF A SINGLE DEHYDRA MACHINE
Power supply: 3PH- 400 V- 50Hz (*)
Power input: 1,1 kW
PLC Control Panel
Elastic Impeller pump with geared motor: 3PH – 400 V- 50Hz
Power input: 0,75 kW
Stainless steel vertical base
Dewatering capacity: 25 l/min
n.1 electric valve for warm water required for cleaning
Total kW: 1,85
Overall dimension: 670 x 410 x 1900 (LxWxH)

CHARACTERISTICS
Tank in PP fitted with mixer
Tank equipped with pressure control system
Power input: 0,5 kW
Power supply: 3 PH- 400 V – 50 Hz (*)
Overall dimension: 1000 x 1700mm (Ø x H)

(*) Also avaible different electrical frequency and voltage

INSTALLATION: Dehydra system has to be connected to electrical grid with installed power of 2,35 kW in a proper building location guaranteeing human safety, easiness in moving the bins collecting the dewatered waste, and cold temperature (15° C) to limit the eventual waste fermentation.

MAINTENANCE: the materials adopted for constructions allow maximum resistance of the Dehydra system to oxidation and corrosion.

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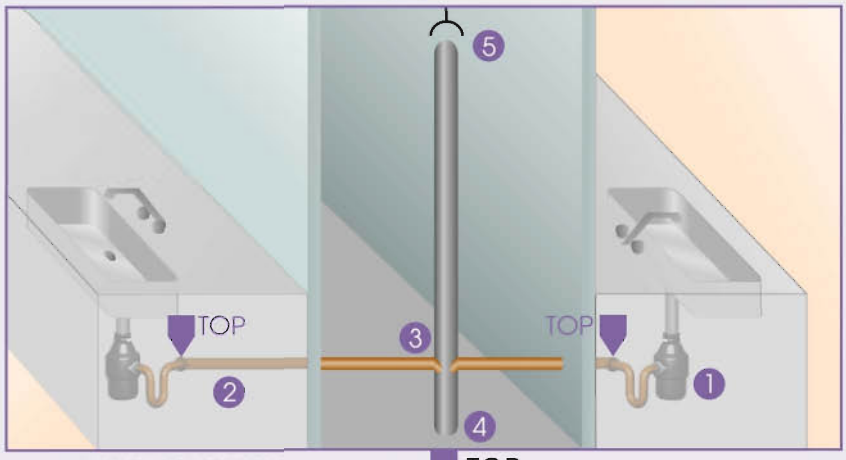
REWISER
FOOD WASTE CENTRALIZED SYSTEM FOR BUILDINGS

PRODUCT NAME: **REWISER**

Food waste centralized system for buildings

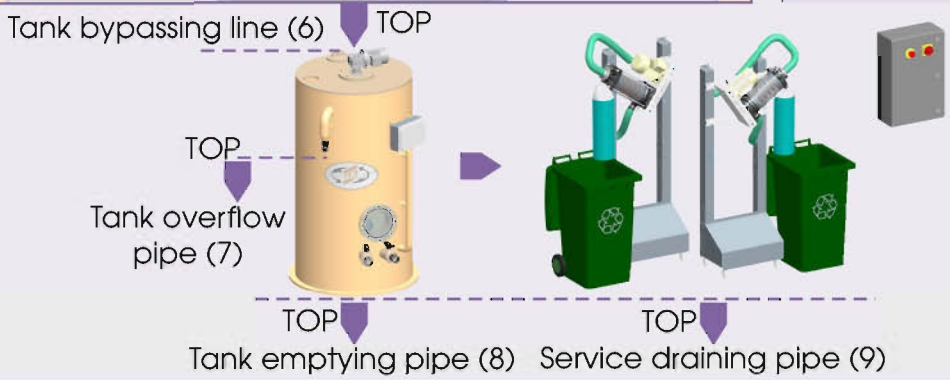
DESIGN PARAMETERS: building with 100 apartments inhabited by 300 people as a reference



MAIN NETWORK ELEMENTS

Kitchen drain pipes (2) : Drains acoustic performances optimized are suggested
Material: PVC/PP ø 40 mm
slope: 3% - Length: < 2-3

NOTE: The FWDs (1) are provided with waste water pipe trapped to eliminate smells entering the kitchen.



TOP = Take Over Point

MAIN NETWORK ELEMENTS

Connection of kitchen drain pipes to Central discharge line (3)	The connection shall be done with an angle < 90° (88°1/2 suggested)	
Central discharge line (4)	Drains acoustic performances optimized are suggested. Material: PVC/PP/HDPE ø: 90mm	**NOTE**: it shall be foreseen to adopt connected ventilated ducts (5). Diameter secondary ducts > 60mm

The central discharge line (4) is connected to a motorized emergency valve that controls the flow throught the tank bypassing line (6). This valve allows to divert the flow, in case of emergency, connecting the central discharge line (4) to the local sewerage network, whose diameter has to be at least 110 mm. Tank emptying pipe (8) allows to connect the tank to the local sewerage network in case of emergency and its diameter is PVC Ø 50 mm.
Other local piping as overflow pipe (7) and service draining pipe (9) are foreseen in PVC – Ø 50 mm.

The system is enough flexible and multiple tanks can be foreseen.

Warm and cold water supplies are required for cleaning and maintenance. The room where the Dehydra system is installed shall be provided with anti-fire alarm and kept cold at 15°C. Size shall be of dimensions HXWXL: 3X4X5m. Ventilation system, allowing no bad odors to cling, and additional services as small sink and grid floor drain have to be foreseen.

WARNING: FWDs and Dehydra system has not to be installed close to heating sources. Dehydra must be installed on plain and rigid surfaces. The connection to the piping network shall be done via flexible tubes to avoid stressed for loading and unloading of the tank.

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