RELIABILITY

HIGH DEGREE OF AUTOMATION

VERSATILE AND MODULAR

HIGH PRODUCTION CAPACITIES

LOW ENVIRONMENTAL IMPACT

FOR REC®
RECYCLING SYSTEMS

— CUSTOM

REFRIGERATORS
TREATMENT PLANT

TURNKEY

SMART SOLUTIONS TO PRESERVE **THE ENVIROMENT**

TAILOR-MADE SOLUTIONS

REFRIGERATORS TREATMENT PLANT

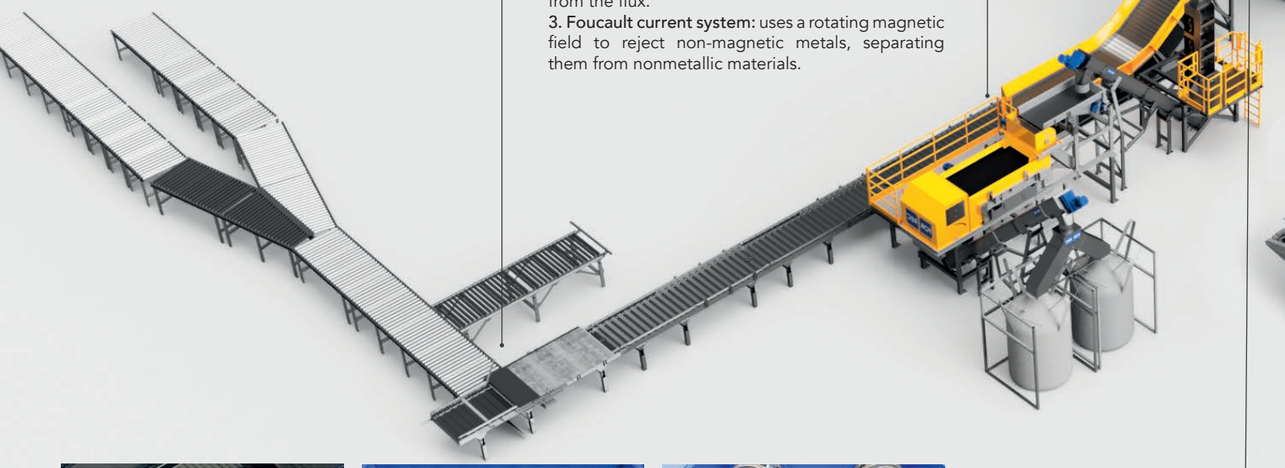
The FOR REC plant ensures safe and environmentally friendly treatment of refrigerators, enhancing the value of each component. The process begins with reclamation, removing motor, oil, and refrigerant gas.
Subsequently, the refrigerator is shredded down to 30 mm and magnetic metals are separated using magnets. Polyurethane foam captured by an aeraulic system is then extracted from the remaining stream and sent to a compaction plant to make it inert. The next step involves separating the plastic from the nonmagnetic metals (copper and aluminum) using an eddy current system. Throughout the process, an advanced vacuum system recovers the gas that is released from the polyurethane foams and sends it to condensation or thermal destruction devices.

REFRIGERATOR RECLAMATION SYSTEM

In the initial stage, the refrigerator is turned over and the refrigerant gas and oil are sucked out of the circuit and split. The motor is disassembled and stored for later treatment or sale.

EDDY CURRENT SEPARATION SYSTEM

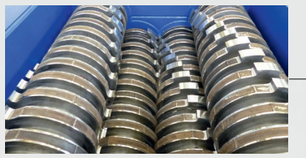
The eddy current separation system allows non-magnetic metals to be recovered from the flux. It consists of three main sections:
1. **Vibrating conveyor:** advances the material evenly to the next stages.
2. **Magnetic drum:** separates magnetic metals by a powerful magnet, which holds and removes them from the flux.
3. **Foucault current system:** uses a rotating magnetic field to reject non-magnetic metals, separating them from nonmetallic materials.



TB

DOUBLE-SHAFT SHREDDER

TB double-shaft shredders (TB) are ideally suited to treatments requiring volumetric reduction with partial control of the output particle size.
Working without a screen, they can handle high material flows. The cutting chamber has an innovative design to carry out fast shaft extraction.



TQ

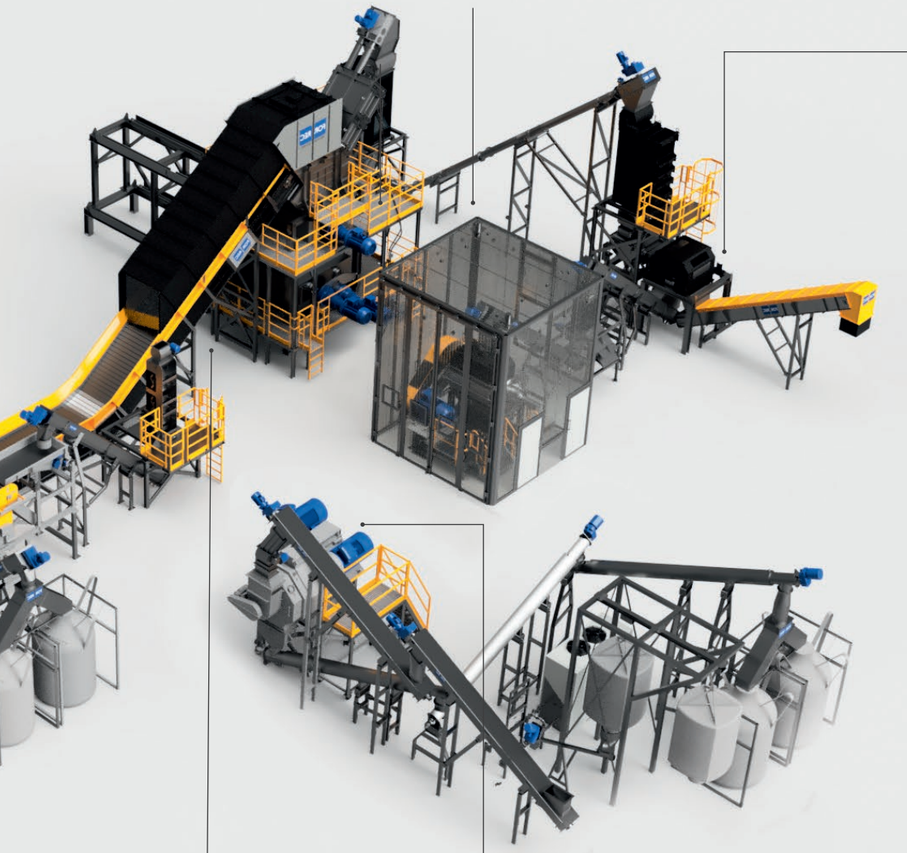
FOUR-SHAFT SHREDDER

Four-shaft shredders (TQ) combine the reliability and strength of twin-shaft shredders with the ability to control the size of material output. In the refrigerator treatment system, the TQ shredder has a 30-mm grid to achieve enough reduction to perform a precise separation of materials.

FMS

GRANULATOR

The granulators with rotating blades or with full rotor are characterized by: the use of special steels to treat the most difficult materials; a sturdy structure able to ensure great reliability; an exclusive cutting system to reduce energy consumption and dust generation; and easy access to the grinding chamber to allow rapid cleaning and maintenance.



PELLETIZER

The pelletizer compacts recovered polyurethane during the recycling process. During compaction, the material is treated to remove the last residual gas trapped within the foams, which are then transformed into inert pellets.

OUTPUT

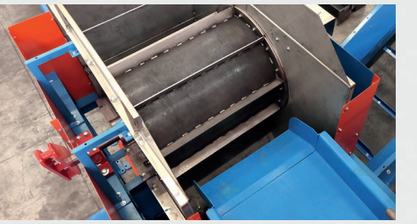
aluminium

iron

plastic

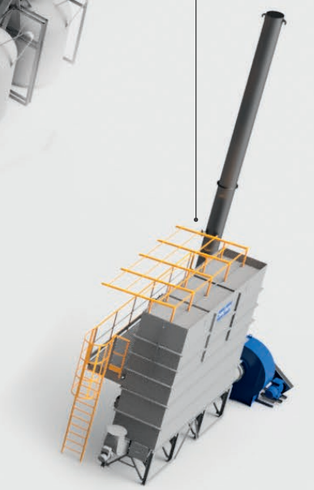
polyurethane

copper



DETECTION AND SEPARATION SYSTEM

The system is used to separate magnetic metals from other materials. It works through the use of powerful magnets and vibrating conveyors that allow the material to advance evenly and be attracted to the magnet while the rest of the material continues on its flow.



2 TREATMENT SOLUTIONS FOR EXPANDING GASES

1. DESTRUCTION WITH THERMAL OXIDIZER

The thermal oxidizer is essential for treating volatile gases released in recycling. It captures gases such as pentane, which is then oxidized at high temperatures (800°C-1,100°C), decomposing VOCs into CO2 and H2O. After combustion, the gases are filtered to ensure clean and safe emissions.

2. RECOVERY WITH CONDENSATION SYSTEM

The system traps the gas through an activated carbon filter, which is then automatically regenerated allowing the extracted gas to be condensed by cooling it with cryogenic technology that takes advantage of the low temperature of liquid nitrogen.

All systems made by FOR REC are modular and implementable according to specific customer needs.

SCAN ME!
DISCOVER OUR PRODUCTS