
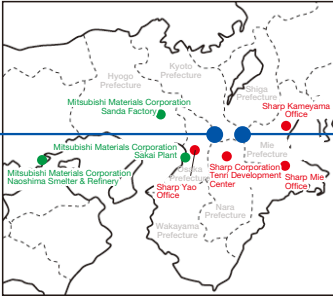
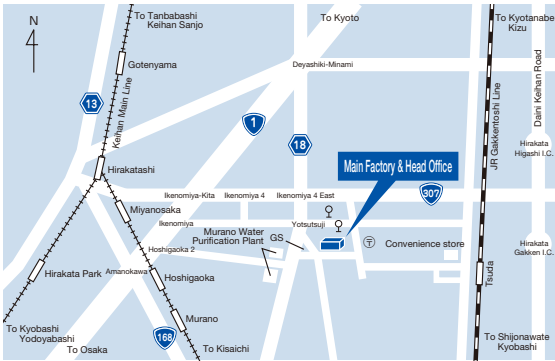
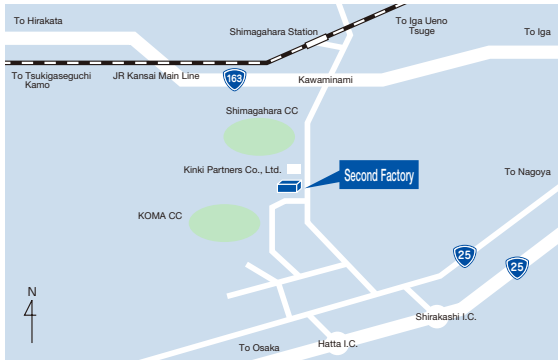


Company Outline		
Company Name	Kansai Recycling Systems Co., Ltd.	
Established	December, 1999	
Business Activities	Recycling of used home appliances	
Capital Stock	300 million	
Investing Company (Investment ratio)	Sharp Corporation (43.3%), Mitsubishi Materials Corporation (40.0%), Sony Corporation (3.3%), Hitachi Appliances, Inc. (3.3%), Fujitsu General Limited (3.3%), Mitsubishi Electric Corporation (3.3%), Kansai Recycling Systems Co., Ltd. (3.3%)	
Representative Directors (Permanent)	President and Representative Director: Hatsuo Kuroshima Managing Factory Director: Shinji Nagashima	
Factories	<div> <div> Main Factory & Head Office   </div> <div> Second Factory  </div> </div>	
Handled Product Lines	Used home appliances Air conditioners, Refrigerators/Freezers, Washing machines/Clothes dryers	Used home appliances Televisions (CRT, Liquid crystal and Plasma flat panel displays)
Locations	2-28-1 Kasugakitamachi, Hirakata City, Osaka	8787 Shimagahara, Iga City, Mie
Start of Operation	April, 2001	December, 2006
Access	<div> <div> ●Main Factory & Head Office [By train] Get off at "Hirakata-shi" station on the Keihan line. 15 minutes by taxi or 20 minutes by bus (Bus stop 1 by the south exit. Get off at "Yotsutsuji" bus stop), then a 10 minute walk. Get off at "Tsuda" station on the JR Gakkentoshi line. 5 minutes by taxi or 10 minutes by bus (Bound for Hirakata-shi station. Get off at "Yotsutsuji" bus stop), then a 10 minute walk. [By car] Go north along Route 1 from the "Moriguchi" I.C. on the Hanshin Expressway. Turn right at the "Hoshigaoka 2" intersection. Go west along Route 307 from the "Hirakata Gakken" I.C. or "Hirakata Higashi" I.C. on the Daini Keihan Road. Turn left on the Ikenomiya 4 East crossing. </div>  </div> <div> <div> ●Second Factory [By train] Get off at "Iga Ueno" station on the JR Kansai Main Line. 20 minutes by taxi. Get off at "Ueno-shi" station on the Iga Railway. 20 minutes by taxi. (There is no taxi service at JR Kansai Main Line "Shimagahara" station) [By car] Go 10 minutes towards SHIMAGAHARA CC (golf course) from Shimagahara bypass on Route 163. Go 10 minutes towards KOMA CC (golf course) from Route 25 (Meihan Expressway). </div>  </div>	

We're doing our part for resource recycling
through our home appliance recycling business.

KANSAI RECYCLING SYSTEMS CO., LTD.

Main Factory & Head office: 2-28-1 Kasugakitamachi, Hirakata City, Osaka 573-0137

TEL 072-808-9888 FAX 072-808-9889

Second Factory:

8787 Shimagahara, Iga City, Mie 519-1711

TEL 0595-59-9120 FAX 0595-59-9121

<http://www.krsc.co.jp>



ISO 14001 Certified Company



EC01J0260



WC08J0004

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April 2022



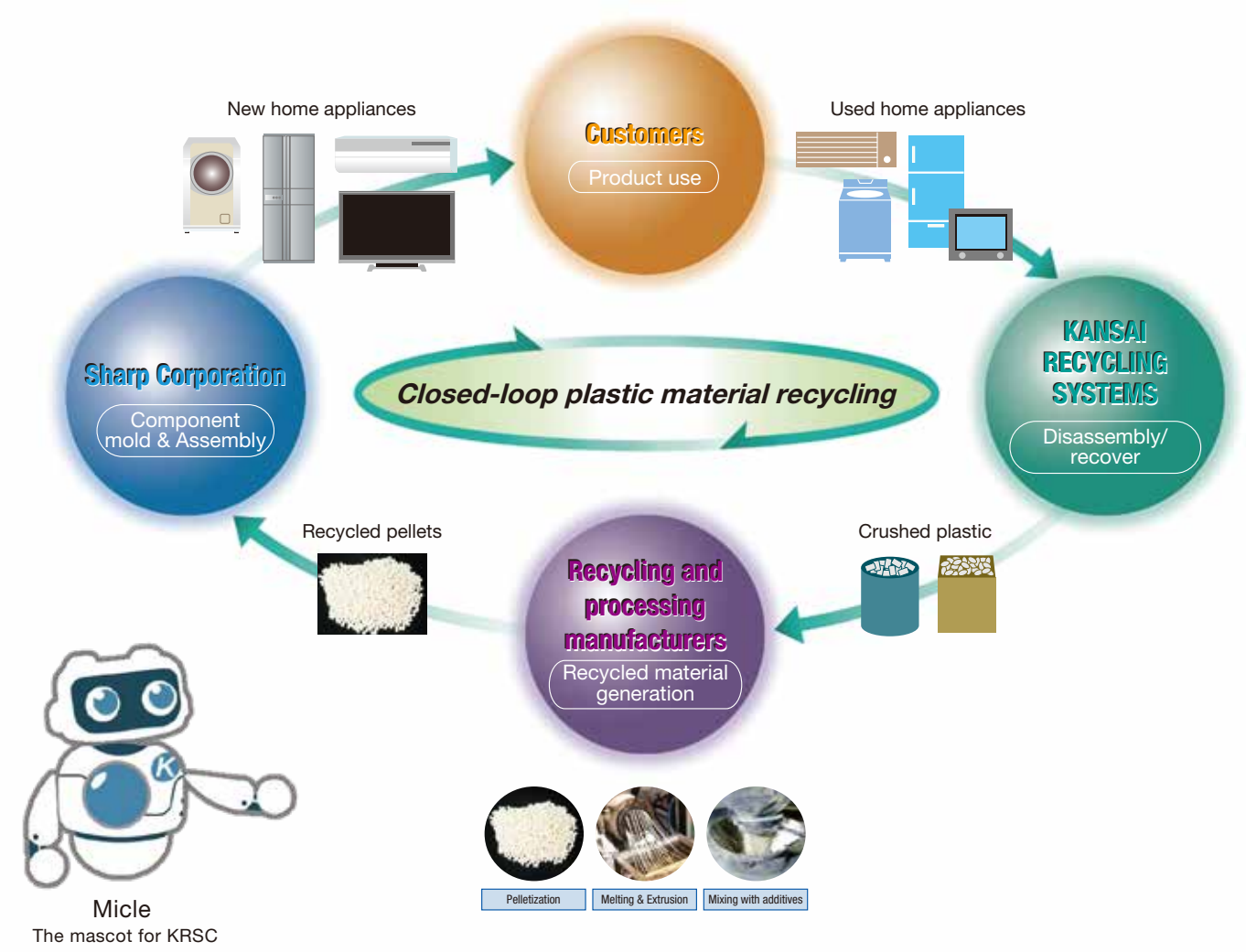
KANSAI RECYCLING SYSTEMS CO., LTD.

As an advanced recycling plant that contributes to a recycling-oriented society, we aim to become “a valuable highly recycling company for people and the earth”.

- Contributions to a recycling-oriented society
 - Promote closed-loop material recycling of home appliances and circulate high quality recycled materials to society.
- Promotion of environmental management
 - Increase added value of recovered materials, thoroughly reduce waste and improve recycling rate.
- Contributions to DfE (Design for Environment) of new products
 - Feedback the information and know-how obtained at the recycling plant to the design and development department to improve the recyclability of new products.
- Contributing to society through environmental education
 - We actively engage in social contribution activities, including “environmental education” focusing on a factory tour.

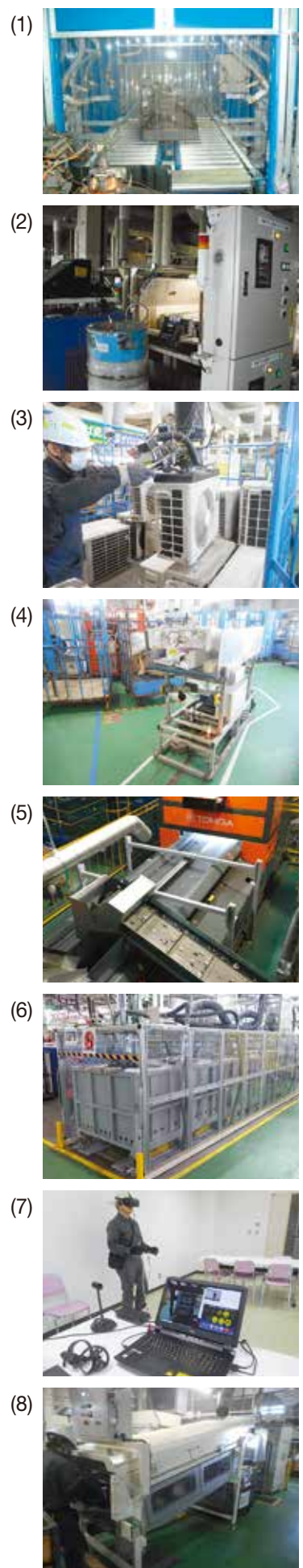
Closed-loop plastic material recycling (CMR)

With the closed-loop plastic material recycling (CMR) technology developed with Sharp Corporation, we promote repeated usage of recovered plastic from used home appliances to Sharp’ s new home appliances.

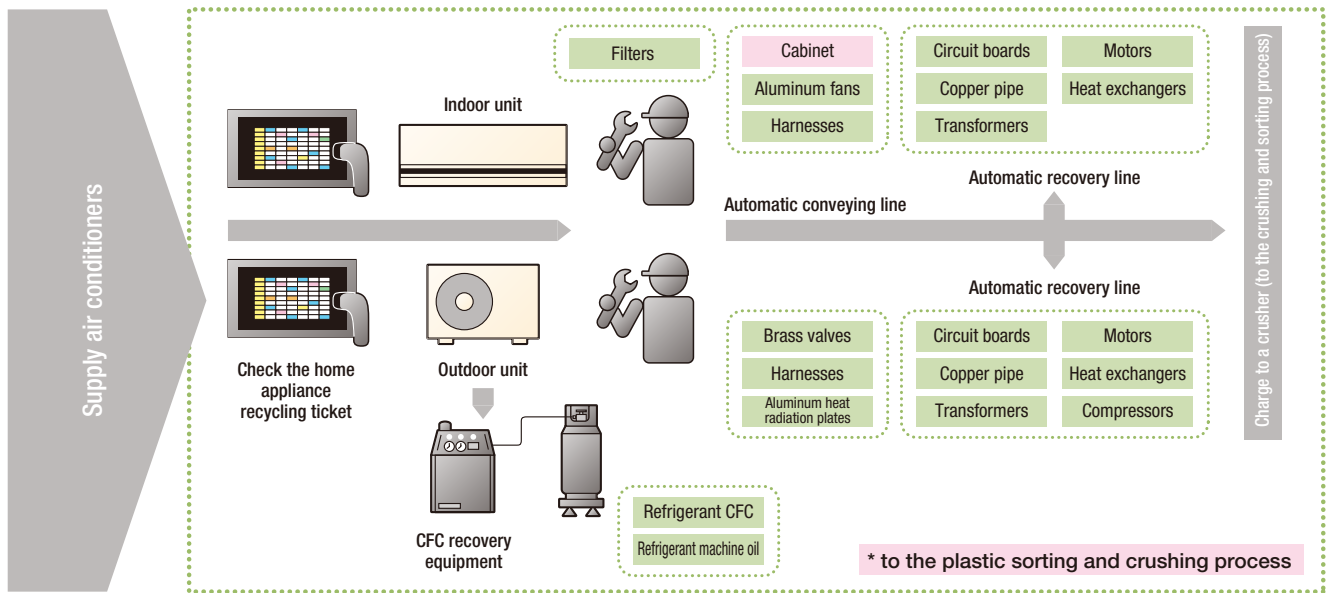


History

FY 1999	- Established.
FY 2001	- Started operation as a home appliance recycling plant. - Acquired ISO 14001 certification.
FY 2002	- Implemented operational CFC management system.
FY 2003	- Installed tub unit dismantling equipment.
FY 2004	- Installed salt water recovery equipment.
FY 2005	- Installed water sprayer to the crushing and sorting process.
FY 2006	- Installed waste compressor conveyor. - Installed infrared radiation thermometers to the crushers. Introduced a monitoring system to the crushing and sorting process equipment. - Installed pulsator coring equipment. - Started operation of Plant 2. (Plant for TVs only. Shimagahara, Mie Prefecture)
FY 2007	- Installed automatic conveyor of recovered air conditioner components. - Installed an indoor unit disassembling line. - Installed a plastic sorting line. - Installed a non-ferrous and color separator. - Installed a pulse air type stem dust collector in Plant 2. (* (1))
FY 2008	- Acquired OHSAS18001 certification. - Installed a CFC monitor. (* (2)) - Installed a large-sized dust collector. - Installed automatic conveyor of air conditioner outside units. - Installed LED lighting equipment (3F process). - Installed back cabinet stamper, automatic band winder, front cabinet conveyor, 2-axis crusher, and panel crusher in Plant 2.
FY 2009	- Automated recovery and conveying in the washing machine line. - Installed a recovered material conveying line, a board compacting machine, and a large-sized dust collector in Plant 2.
FY 2010	- Installed automatic temporary refrigerator storage equipment. - Installed a back cabinet conveying system in Plant 2.
FY 2011	- Received a total of 20,000 visitors. - Automated conveying in the refrigerator pre-disassembling line.
FY 2012	- Installed a refrigerator pre-disassembling yard. Installed an HC refrigerant recovery machine. - Installed urethane suction equipment and harness collection equipment.
FY 2013	- Installed a urethane particle separator. - Installed mixed plastic shipping equipment.
FY 2014	- Installed air conditioner unloading equipment. (* (3)) - Installed refrigerator compressor function destruction equipment. - Started human-resource exchange training with other companies.
FY 2015	- Installed automatic motor core cutting and extraction equipment. - Installed automatic crushed material conveyor in the plastic sorting line. (* (4)) - Introduced safety sensory equipment.
FY 2016	- Installed a flat-panel display board crushing and sorting system in Plant 2. - Installed automatic transformer disassembling equipment. - Renewed the refrigerator line.
FY 2017	- Renewed automatic washing machine salt water recovery equipment. - Introduced refrigerator sealing material crushing and sorting equipment.
FY 2018	- Completed a warehouse building. - Won the Iwatani Naoji Memorial Prize. (for industrial contribution through home appliance waste polypropylene recycled material remaining life evaluation technology using the deterioration induction period method / high quality material supply) - Renewed the washing machine line. - Installed a refrigerator transparent tray crusher. - Installed a color separator in Plant 2. (* (5))
FY 2019	- Installed refrigerator compressor storage and forwarding equipment. (* (6)) - Installed VR safety simulation system. (* (7))
FY 2020	- Installed an additional lines for drum-type washing machine dismantling. - Installed air conditioner outside unit forwarding equipment. (* (8)) - Underwent transition from OHSAS18001 to ISO45001.
FY 2021	- Installed zigzag pneumatic separation equipment. - Installed air conditioner filter crushing equipment. - Renewed air conditioner outside unit dedusting equipment.



Air conditioner processing flow



Outside Unit Dismantling Line

The form of outside unit dismantling work has been changed from cell system to line system, raising operational efficiency by putting the limit on the amount of tools to be used and the space taken up for the work.

Outside Unit Dedusting Equipment

In order to enhance the processing capacity of dedusting equipment introduced in 2008, the air blow system and blowing positions have been improved, making the equipment work more efficiently in a smaller space.

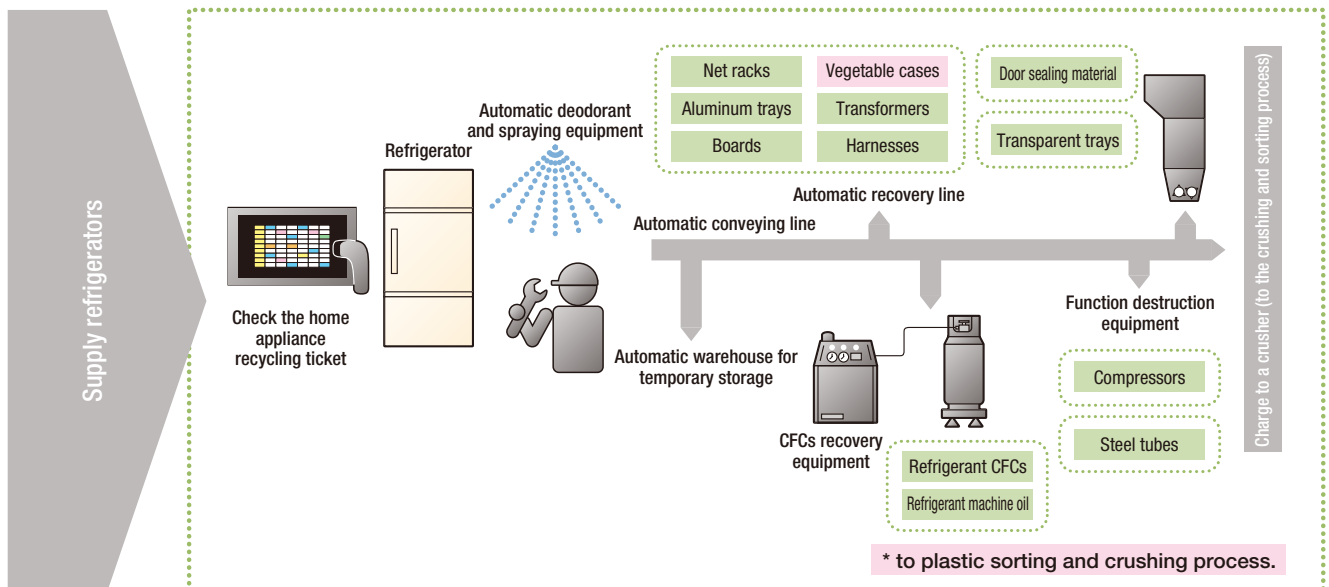


Outside Unit Dismantling Line



Outside Unit Dedusting Equipment

Refrigerator processing flow



Door sealing material crushing and sorting equipment

Door sealing material is crushed, and the vinyl chloride on the surface and the soft magnet used as a core are separated and recovered.

Crushing and recovery of transparent trays

Clear trays recovered from refrigerator chambers are charged directly to a dedicated crusher.

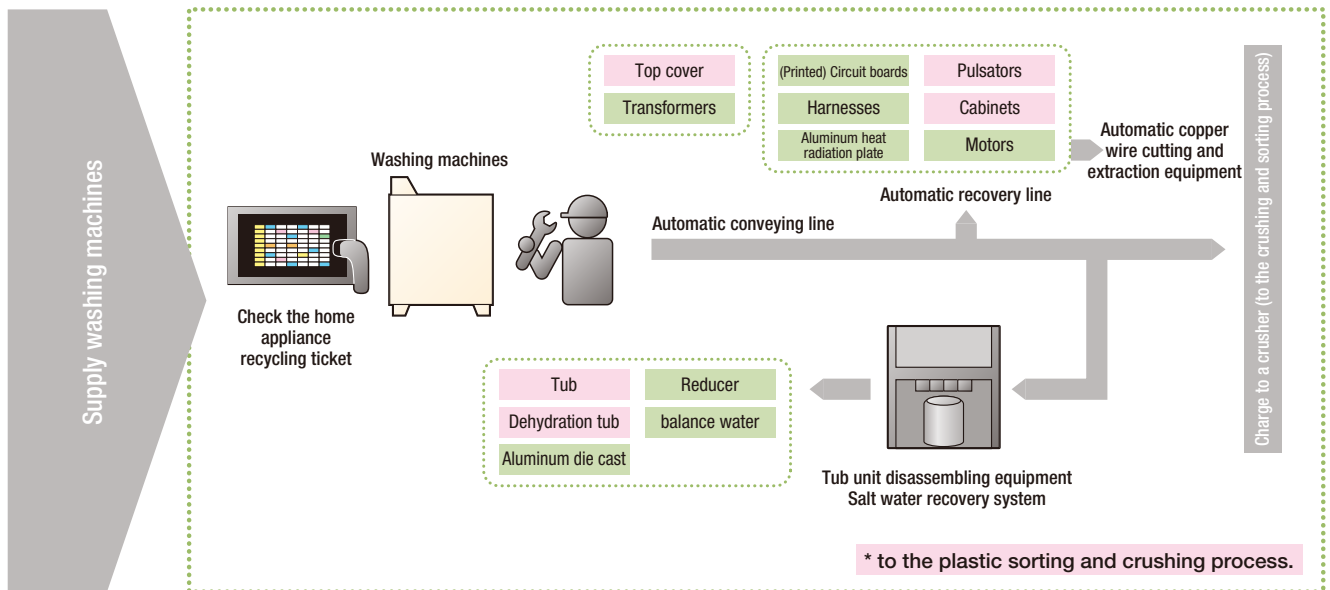


Door sealing material crushing and sorting equipment



Crushing and recovery of transparent trays

Washing machine processing flow



Tub unit dismantling equipment

This equipment separates metal parts and plastic from the washing machine tub unit (which is difficult to disassemble manually).

Drum-type washing machine dismantling line

To cope with the rise in number of wasted drum-type washing machines, detached tubs are automatically forwarded on an exclusive conveyor line and processed by press crusher.

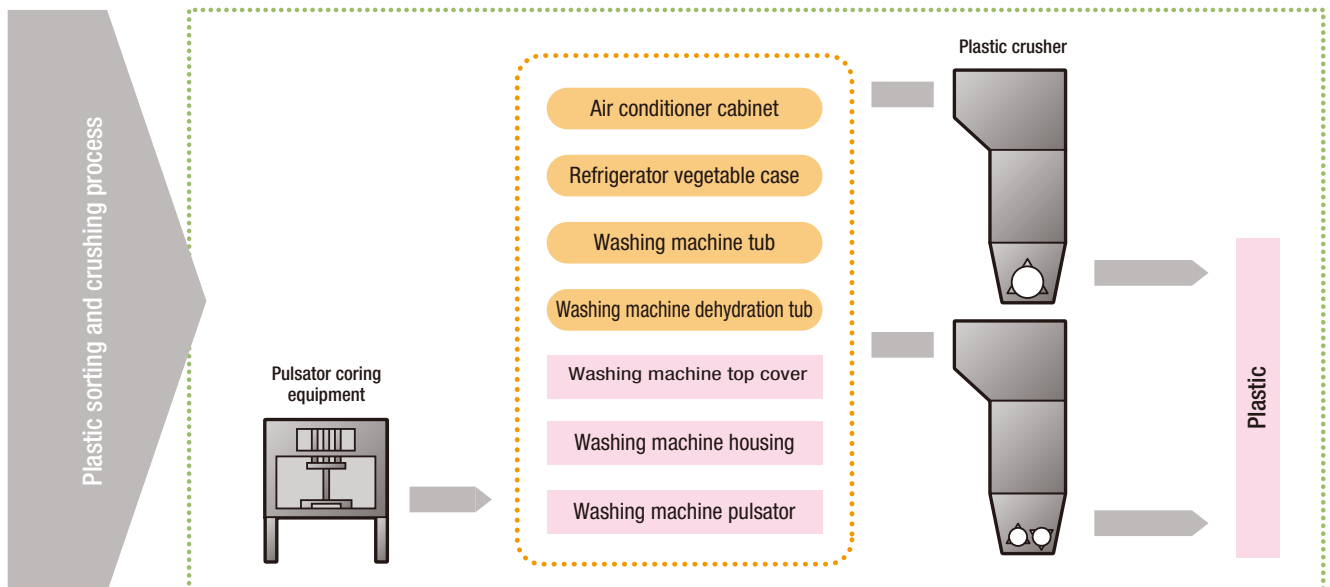


Tub unit dismantling equipment



Drum-type washing machine dismantling line

Plastic sorting and crushing process



Plastic sorting line

This process removes metal from plastic parts to recover polypropylene (PP).

Pulsator coring equipment

This equipment separately recovers plastic and metal removed from pulsator, which is a washing machine agitator.

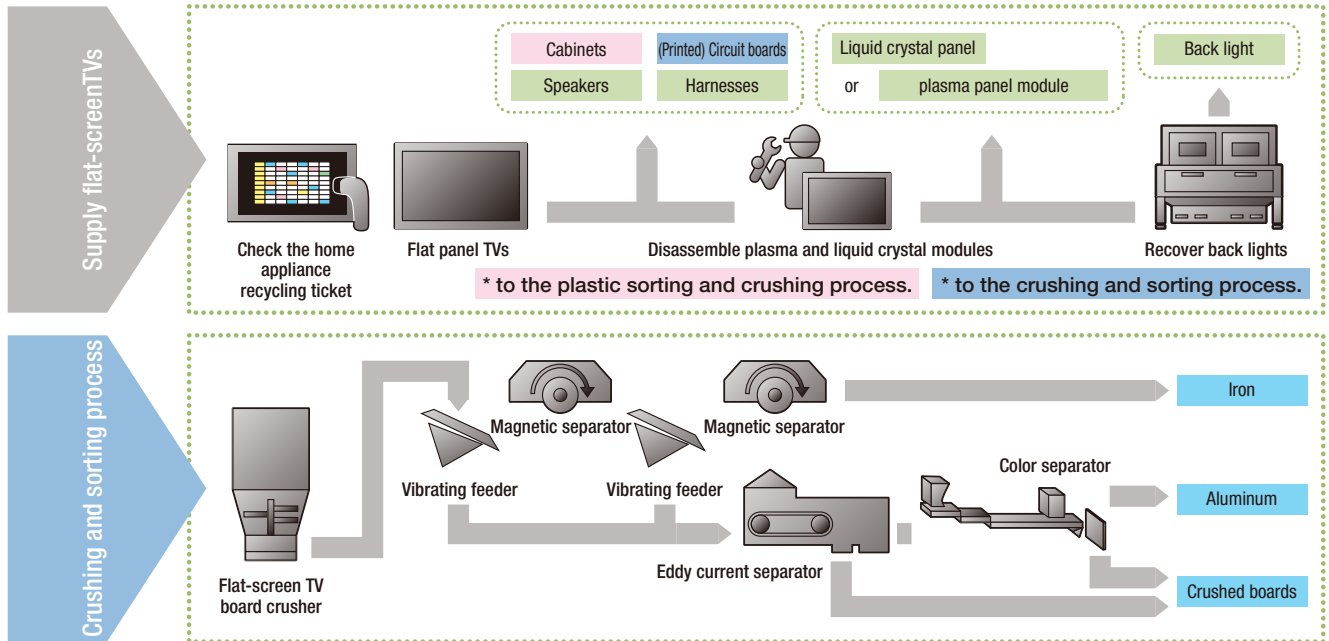


Plastic sorting line



Pulsator coring equipment

CRT TV and flat-screen TV processing flow



Back light recovery workbench

A workbench with local exhaust ventilation is provided to prevent operators and the environment from being affected in case of a breakage when recovering liquid crystal television fluorescent tubes.



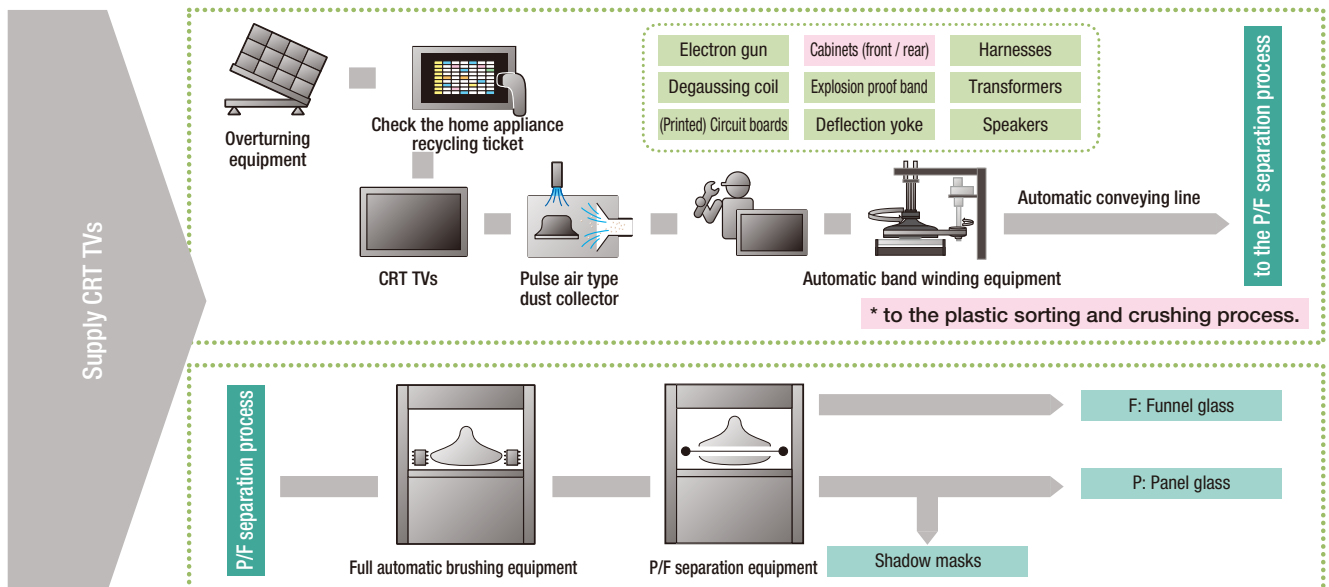
Back light recovery workbench

Flat-screen television hydraulic cutting machine

As flat-screen television units grow larger, it has become more important to ensure safety of workers while reducing their work burden to maintain higher efficiency in dismantling work. Our plant's solution is this machine, which cuts televisions with a flat screen of 50 inches or larger, enabling the process to be handled by a single operator.



Flat-screen television hydraulic cutting machine



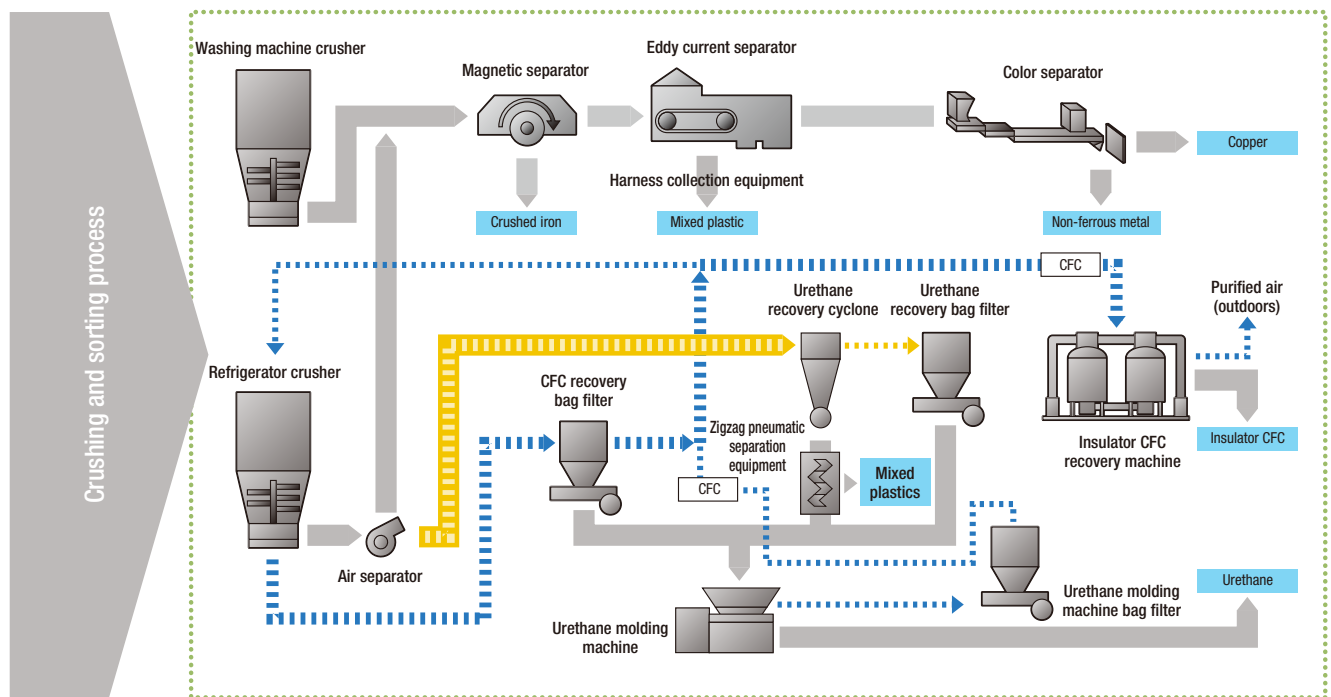
P/F separation equipment

This equipment separates panel glass (P) from funnel glass (F), by applying a heater wire to Braun tubes.



P/F separation equipment

Crushing and sorting process



Insulator CFC recovery machine

This machine recovers CFC contained in the insulator used in refrigerators.

Color separator

This machine detects red copper color in non-ferrous metal mixtures using a CCD camera, and then automatically sorts and recovers it by blowing high-pressure air.



Insulator CFC recovery machine



Color separator

Zigzag pneumatic separation equipment

While crushed refrigerator insulator pieces go through a zigzag passage in this equipment, plastic and urethane fragments are efficiently separated and recovered. This process contributes to higher plastic recycling rates.



Zigzag pneumatic separation equipment



Crushed iron



Crushed and sorted copper



Mixed plastic