Where does your recycling go?

Step 1

Tip floor and metering bin
Garbage trucks – private haulers, municipal trucks and Midwest Fiber trucks – that drive throughout town to pick up recycling makes stops at Midwest Fiber to dump loads of waste onto the tip floor. A small loader truck picks up materials and carries them to the metering bin – the first machine in the sorting process – where the materials are evenly laid out on a conveyer belt in a depth of about 6 to 8 inches.

Step 2

Pre-sort
Midwest Fiber staff members stand along the conveyer belt and pull any items off that could damage the system or would not travel through it properly. Items that workers look for at this stage to pull off the conveyer belt include large pieces of metal, plastic bags, wire, electronics, large plastic buckets and containers.

Step 3

Old corrugated containers
Materials fall into the OCC screen next, which is a turning wheel designed to separate large pieces of cardboard from the smaller materials. Cardboard will get carried up and over the wheel into a holding bunker, while smaller pieces fall through holes between the turning discs. Glass is broken inside the spinning machine and is sent to a holding bunker outside the facility.

Step 4

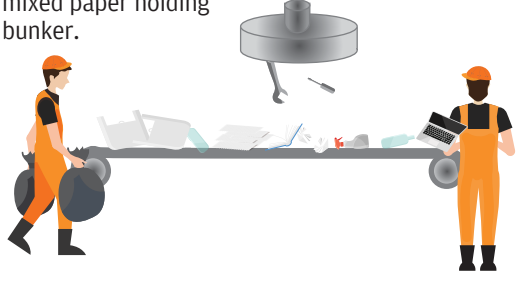
News screen
Materials that have made it through the pre-sort and OCC screen are sent to the news screen, which aims to separate paper from the rest. Working similarly to the OCC, materials are sent up a conveyer belt and a series of spinning discs to separate containers from paper. Containers fall between the discs and move on to the next step, while the paper moves up to a different conveyer belt.

Step 5

Polishing screen
Containers and other materials that were sorted from paper in the previous step are now sorted by dimension at the polishing screen. Another series of spinning discs help to push materials along and a steep incline at this stage allows heavier, three-dimensional items to fall to a different conveyer belt, while two-dimensional items like paper move along to its own line.

Step 6

Fiber line
Two-dimensional items that moved through the polishing screen next land at the fiber lines. Midwest Fiber employees stand along a conveyer belt to sort out items that shouldn't be there, such as plastic bags, small cardboard pieces and flattened containers. The rest of the materials, mostly paper, falls into the mixed paper holding bunker.



Step 7

Cross belt magnet
Three-dimensional materials that fell through the news and polishing screens land at the container line. The cross belt magnet, which is a powerful magnet that rotates over the container line conveyer belt, pulls steel and tin materials off the line and separates them into its own holding bunker.

Step 8

Container line
After the cross belt magnet has pulled all steel and tin materials off the three-dimensional material line, the rest of the containers move along the container line where employees sort the plastics by type. Each worker is looking for a specific plastic type to sort from the line, such as one worker will watch for No. 2 plastics without dyes or colorings, such as milk jugs. Another employee will sort No. 2 plastics with dyes and colorings, such as detergent containers. Another employee is sorting any materials that have slipped through the cracks in previous steps like books or boxes.

Step 9

Eddy current
Materials left over after all the previous stages, such as aluminum or polyethylene terephthalate, or PET, bottles (single-use plastic water bottles) heads to the eddy current which is designed to sort the aluminum from the rest. The machine gives a positive charge to aluminum, making it jump off the belt and over a separator bar to a holding bunker.

Step 10

Optical sorter
The rest of materials that have made it through the process next go through the optical sorter. This stage separates PET bottles, such as single-use plastic water bottles, from the rest by generating a puff of air on any items it recognizes as PET plastic. The shot of air pushes those bottles off the conveyer belt to be manually sorted and then brought to a holding bunker.

Step 11

Baler
All materials that have been sorted throughout the process eventually fell into its own holding bunkers at different stages. Once a bunker is full, an employee hauls it to the baler, which condenses the given material into cubes. Each cube could weigh anywhere between 1,200 to 1,800 pounds. The cube of that specific material is tied with wire, moved to storage and is ready to be shipped away. Semi-trucks or train cars pick up the cubed materials to haul them to recycling mills where the items are turned into new products. Midwest Fiber ships its materials anywhere from Pekin to Indiana, Wisconsin, Georgia, Mexico, China, Taiwan or India.

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