



**SÉBASTIEN ROY**  
MACHINEX  
*Project Director*

# 5 QUESTIONS ABOUT BALLISTIC SEPARATORS

## 1 In which applications can ballistic separators be used and how do they work?

Ballistic separators are suitable for many types of sorting systems, such as but not limited to single- or dual-stream systems for residential recyclables, commercial recyclables, solid waste, waste to energy (fuel preparation), etc.

## 2 How are ballistics used in a sorting system?

Ballistic separation is used to do three distinct separations: flexible materials, rigid materials and to screen out a certain size fraction of material. Similar to a conventional disc screen, the three-dimensional/rigid items, such as containers, will tumble back, and the flat/flexible items, such as paper and plastic film, will climb to the top front portion of the machine. Finally, the ballistic separator's paddles are fitted with replaceable screening plates that are used to screen out material of a certain size as determined by the application.



## 3 What are the ballistic separator's advantages compared with a regular star screen?

The ballistic separator has multiple advantages over a conventional rubber star screen. The most appreciated benefit is certainly the lower operational cost of the machine: There are no rubber discs to wear out, and the elliptical movement does not result in the wrapping of long and stringy flexible items, which is what happens on the spinning shaft of a regular screen. Together, these two main aspects translate to more uptime with lower, almost non-

existent, wear parts replacement and much lower labor costs related to cleaning the screen. Also notable, the ballistic separator has a compact footprint that makes it easy to integrate and retrofit within sorting systems, it does a better and more constant job at separation than a regular star screen and also consumes less energy than a comparable capacity star screen.

## 4 How can this equipment improve quality and recovery in the sorting process?

The ballistic separator has the advantage of not having high wear items like rubber

discs, which translates to more constant recovery of material. As rubber discs wear down, the quality of the separation changes, and good commodities are lost to other streams or create unwanted contamination in other places.

## 5 Can the ballistic separator handle the same throughput as a star screen?

Contrary to what some believe or suggest, the use of ballistic separators does not limit the capacity of a single-stream system. It has been argued that disc screens handle a higher volume of material with better efficiency and purity. The key is properly integrating the ballistics so that they are not installed in a cascade but rather in parallel and in conjunction with other key equipment. Replacing star screens with an equal number of ballistic separators will maintain the same throughput capacity but with more uptime because of the reduced wrapping and cleaning required with star screens.

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Achieving marketable fiber quality is not necessarily the job of a single piece of equipment and requires in-depth analysis of several key factors. Machinex offers a four element approach to achieve maximum purity and unmatched recovery.

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