



# HOW TO MANAGE NON-CONVEYABLE PARCELS

## ABSTRACT

As the flow of goods continues to rise, so too does the demand for automated systems capable of handling, detecting, measuring and sorting parcels.

With the boom of e-commerce and increasing shipments in the B2C and more recently in the C2C sectors, the types of parcels automated systems are tasked with sorting have become increasingly diverse.

In addition to the traditional mid-sized parcel that meets average weight, size and shape parameters, **the number of small, very large and irregularly shaped parcels has increased.**

By definition, any sorting system operates within specific ranges. The conveyable parcel features are fixed in advance and productivity is measured by referencing parcels that fall in the middle, conveyable range. All parcels not included in the conveyable parcel range - **the non-conveyables** - are processed separately and often sorted manually.

Manual sorting decreases productivity, requires the use of dedicated labor resources and runs a greater risk of errors. It also prevents operations from collecting data necessary for full traceability.

In this document we will:

- **Analyze the problem of managing non-conveyable parcels**
- **Describe the potential solutions** and available strategies to improve the management of non-conveyable parcels
- **Provide a general analysis framework** to help operations communicate with partners and identify the best-fit solution

The aim is to help parcel operators **identify the right solution** based on their specific needs. This approach enables them to be more competitive and strategically target investments by accounting for the comprehensive processing features of automated systems.

## FROM MANUAL TO AUTOMATED SORTING

A parcel is considered non-conveyable based on:

- Shape, such as cylindrical elements, irregular edges or other characteristics
- Volume, such as very large or especially small items
- Barycenter position, in case unbalanced parcels sway or move
- Packaging type, such as corrugate boxes, plastic bags or something else.

These irregular parcels cannot be carried and sorted by automated systems, but manual processes come with drawbacks. Manual approaches are slower, offering reduced productivity, while requiring dedicated labor resources and not allowing full traceability of data. Furthermore, there is no evidence of the reliability of its measurements and it leaves operations to simply trust the volume and weight data issued by the shipper without secondary verification.

This premise could lead one to think that manual sorting is never the right choice. But in fact, a small number of non-conveyable parcels may not be enough to justify investment in a dedicated automated or even semi-automated solution.

In order to decide which solution to adopt, **first step is to have a clear, analytical view of your operation.**



## SEMI-AUTOMATED

In some cases it may be worth processing large numbers of non-conveyable parcels on a dedicated automated system. While in other cases, if the depot is already equipped with **semi-automated system** to detect weight and volume, non-conveyable large items can be measured with this system.



Weight and volume measuring systems for pallets can indeed have several strengths thanks to their different configurations. These allow them to obtain the weight, volume and image of pallets, along with different products and shapes, including certified measure ment of regular and irregular items like tires, fabric rolls and more.

This option is to be considered only for a small number of non-conveyable parcels (rate below 300 parcels per hour) or if there is no additional space to contain a new system.

## FULLY AUTOMATED

The **fully automated system is the highest performing option**, provided that the new system for non-conveyables is introduced in consistency with the existing conveyable-parcel sorting system. The benefits of a fully automated solution include:

- **Increased productivity**
- **Full traceability of data**
- **Reliable measurements**
- **The opportunity to re-invoice customers** in the case of weight and volume data that deviates from that assigned to a specific item
- **Limited use of human resources**
- **Fewer material errors** in the sorting and management of these parcels
- The possible **automatic handling of non-conveyable parcels** through all the working areas, from one point to the other of the depot
- **Compliance** with requirements for legal certification of measurements (LFT - Legal For Trade).

These considerations for an existing facility are also valid for a completely new facility, for which workflows and productivity targets are known and intended to cover the widest range of parcels possible.

## CHOOSING THE RIGHT SOLUTION

The decision to invest in any fully automated solution relies on assessing factors such as actual **benefits**, **return on investment** and any **potential increase in workload** in the medium term.



### MANUAL OR AUTOMATIC?

The first parameter to consider is the number of non-conveyable parcels to be sorted. In general, manual sorting is appropriate for a very small number of non-conveyable parcels. On the contrary, a combination of the following factors justifies the choice for an automated system:

- A considerable number of non-conveyable parcels to handle in a short time
- High throughput requirements
- The need for automatic sorting at destination points
- The need for a “Legal For Trade” certified measurement of weights and volumes
- The need for automatic handling of parcels from one point to the other within the depot.

## A NEW SOLUTION FOR NON-CONVEYABLES

### How to automatically sort non-conveyable parcels

Handling and sorting non-conveyable parcels is a headache for many couriers and distributors, making a fully automated solutions an increasingly urgent demand. To address this issue, MHS has developed a fully automated, stand-alone solution, with a productivity of up to 1,000 parcel per hour. This solution, which can be easily integrated with a dimensioning, weighing and scanning (DWS) tunnel, can complement the existing automation and facility layout in a strategic way to optimize parcel handling, loading and unloading. This solution makes it possible to sort irregularly shaped, large, unbalanced, cylindrical and very bulky parcels such as coils, chairs and ladders.

These assessment parameters are valid **for analyzing hubs**, which typically handle a very large number of parcels, including a high percentage of bulky parcels, **and depots**, where productivity is typically lower but processing must nonetheless meet efficiency, traceability and control requirements.



### NEW OR EXISTING FACILITY

The best-fit solution can also vary based on whether the facility is new or existing. In the case of a new facility, it's possible to determine the desired range of parcels to cover via automation in advance, and **organize space with an optimized layout** where the different functional areas can work consistently to achieve the best results.

In the case of an existing facility, aside from the processing features, it is necessary to consider how to manage existing workflows, optimize space and integrate new and existing solutions together.





## MEASURING AND ANALYZING

An effective dialogue with your automation partner is an essential part of choosing the best solution. Share key information, including:

- Describing how non-conveyable parcels have been managed previously
- The most frequent mistakes in current management of non-conveyable parcels such as identification of items, measurement and failure to re-invoice deviations
- Any forecasts of market performance with regard to the types of parcels distributed
- Overview of any existing semi-automatic solutions not being used to their full potential or capable of being used in new workflows

## DECIDING

The **cost-benefit analysis** is the starting point to choosing the right solution. Return on investments can be assessed according to different time axes depending both on contingent needs and on medium-term forecasts. At this stage, your technology partner plays a key role and should be able to provide answers to questions specific to your facility and application to help you make the best decision.

## CHECKING

After implementing a solution, it's essential to leverage ongoing support, monitor results and identify new objectives. Doing so equips an operation to adapt to changes and make data-driven decisions about ongoing improvements.

## CONCLUSION

Non-conveyable parcels can be a logistics nightmare, but contrary to what the name says, **non-conveyables can be handled by automated systems**. Your technology partner can help you find the best solution for such items, **with additional benefits from automation investments like cost-savings and safety related advantages**.