

AERIAL DYNAMIC FLOW REGULATOR (DFR-R)

Accumulation that improves efficiency



- FIFO accumulation
- Automatic and continuous accumulation
- Aerial installation (even at ceiling level)
- No intermediate transfers
- Fully configurable
- Industries:
 - o Food
 - o Pharmacy
 - o Cosmetics and Drugstore
 - o Automotive
 - o Electronics

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¿What is it?

The Aerial Dynamic Flow Regulator (DFR-R) has been designed to balance the manufacturing speeds of two consecutive work stations on the same production line and, more importantly, **to absorb most of the inefficiencies** caused by their potential different or variable production cycles or by any short machine stops that may occur

The DFR-R **enables manufacturing lines to operate with the planned productivity and uptime thresholds** as it compensates any possible machine stop with its dynamic accumulation capacity. This can be achieved by the DFR-R as it automatically accumulates products when its next downstream workstation suffers a stop and releases them back to the manufacturing line when normal working conditions are re-established.

The DFR-R can operate in almost every potential manufacturing environment. Therefore, its range includes a wide array of sizes, accumulation capacities, speeds, and configurations. **Its differential advantage is that it can be installed in height, which makes it ideal for environments where available space is scarce.**

¿What is offered by the DFR-R?

The DFR-R automatically accumulates products from the assembly line as soon as it experiences any stop or speed or cycle alteration and releases them back to the line when the abnormal working conditions are resolved.

The DFR-R can be set up with **product-in and product-out ways located at the same or at different heights**, thus resolving potential challenges caused by neighbouring workstations operating at different levels in the plant.

The DFR-R is a Good solution for short and large accumulation needs (until 400 meters), which can be met by combining channels and levels, or linking successive units, depending on the space available.

Accumulation is 100% FIFO at product unit level, prevents any contact among products and is made with no intermediate transfers, thus avoiding unwanted manipulation of the products and risk of product jams. They move along the DFR-R in a fluent and continuous fashion. These features (which patent is in process) make the DFR-R a very convenient solution for fragile or delicate products of almost any shape or format and enable it to process boxes, flowpacks, bags, tubes, bottles, cans, pots, jars, doypacks, industrial components, electronical components, etc... In turn, this versatility facilitates the changes of format with what is no necessary to make mechanical adjustments of the linking systems.

As the result of it, the DFR-R is normally **an investment with a fast or very fast return.**

¿How does it work?

The DFR-R is split in two main parts: the accumulation section and the reserve section.

These two parts are linked by a **continuous, single track, with no transfers in between**. Products are placed and stay on the track always keeping the same position (which avoids manipulations) and having no contact among them.

When the manufacturing line is operating normally, the DFR-R accumulation section is minimized, so that products going through it, run the shortest possible path.

As soon as a line stop or a cycle or speed reduction occurs, the accumulation section automatically starts to extend its length, prompting an equal reduction of the reserve section. This is what makes it possible to accumulate as many product units as required by the extent of the line stop or speed anomaly.

As soon as the manufacturing line gets back to normal working conditions, the DFR-R accumulation section automatically starts to shorten, releasing accumulated products to the line and recovering its starting minimum length.

The DFR's software and control parameters are fully integrated with those running the manufacturing line so that **accumulation** and release functions are executed automatically and in full coordination with the line.

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Technical details:

- Accumulation capacity: until 400 meters,
- Independent product-in and product-out speeds (up to 80 mts/min),
- Range of track shapes and sizes, up to 300 mm wide,
- Maximum size of products to accumulate dependant on stability and weight.
- Adaptable side guiding mechanism
- Single and continuous track with no intermediate transfers
- Product-in and product-out tracks at same or different heights
- FIFO accumulation
- Zero-pressure accumulation
- Control software fully integrated with manufacturing line
- Aerial installation (even at ceiling level)
- Accumulation capacity can be fully customized with a combination of channels and levels:

Channels	x	Levels
2	x	1
2	x	2
4	x	1
2	x	4
4	x	4
2	x	6
4	x	6

- Made from stainless steel
- Size: from 2m x 0,5m x 0,5m, to 50m x 1,8m x 2,5m
- Lubrication: recommended.
- Power required: from 0,2 KW to 6KW
- CE-marked