DYNAMIC FLOW REGULATOR (DFR)

Accumulation that improves efficiency

- FIFO accumulation
- Automatic and continuous accumulation
- No intermediate transfers
- Fully configurable
- Industries:
    - o Food
    - o Pharmacy
    - o Cosmetics and Drugstore
    - o Automotive
    - o Electronics

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DYNAMIC FLOW REGULATOR (DFR)

What is it?

The Dynamic Flow Regulator (DFR) 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 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 as it automatically accumulates products when the subsequent downstream work station suffers a stop, and releases them back to the manufacturing line when normal working conditions are re-established.
The DFR can operate in almost every potential manufacturing environment. This is why its range includes a wide array of sizes, accumulation capacities, speeds and configurations.

What is offered by the DFR?

The DFR 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 can be set up with product-in and product-out tracks located at the same or at different heights, thus resolving potential challenges caused by neighbouring work stations operating at different levels in the plant.
The DFR is a good solution for small to big accumulation needs (from 15 to 400 metres), which can be met by combining channels and levels, or linking successive units, depending on the space available.
Accumulation is 100% FIFO at the product unit level, prevents any contact between products and is made with no intermediate transfers, thus avoiding unwanted manipulation of the products and risk of product jams. Products move along the DFR in a fluid and continuous fashion. These features make the DFR a very convenient solution for fragile or delicate products of almost any shape or format and allow for the processing of boxes, flowpacks, bags, tubes, bottles, cans, pots, jars, doypacks, industrial components, electronical components, etc…
As a result, the DFR is normally an investment with a fast or very fast return.

How does it work?

The DFR is split into two main parts: the accumulation section and the reserve section.
These two parts are linked by a continuous single track with no intermediate transfers. Products are placed and stay on the track, always staying in the same position (avoiding manipulations), and there is no contact between them.
When the manufacturing line is operating normally, the DFR accumulation section is minimised, so that products going through it run along 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 according to the line stop or speed anomaly.
As soon as the manufacturing line gets back to normal working conditions, the DFR 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: From 15 metres to 400 metres
- Independent product-in and product-out speeds (up to 80 m/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
- Accumulation capacity can be fully customised 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

- Suitable to be linked with other DFR units
- Made from stainless steel
- Size: from 2.5 m x 0.5 m x 0.5 m, to 50 m x 3.5 m x 2.5 m
- Lubrication: recommended
- Power required: since 0,2 KW to 6 KW
- CE-marked