

# MULTI-STAGE INLINE DOSING SYSTEM

Ways to improve operations and profitability

## CASE STUDY

October 2016

A PRIMIX Multi Stage Static mixer is a perfect solution when a small additive flow must be blended into a main flow that has a large turn down.

## THE RESULT

- Perfect Homogeneity
- Large working range
- Low pressure drop

**PRIMIX**<sup>®</sup>  
PERFORMANCE BY DESIGN

## Background

A Dutch based drinking-water producer needs to blend a few litres of caustic into a DN500 main line. The capacity of the main line has a large turn-down ratio and can vary between 10-100%. 2 production lines are installed side-by-side but they operate at different capacities. The lines are fully interchangeable in case of emergency to ensure sufficient drinking water at all time.

## The Challenge

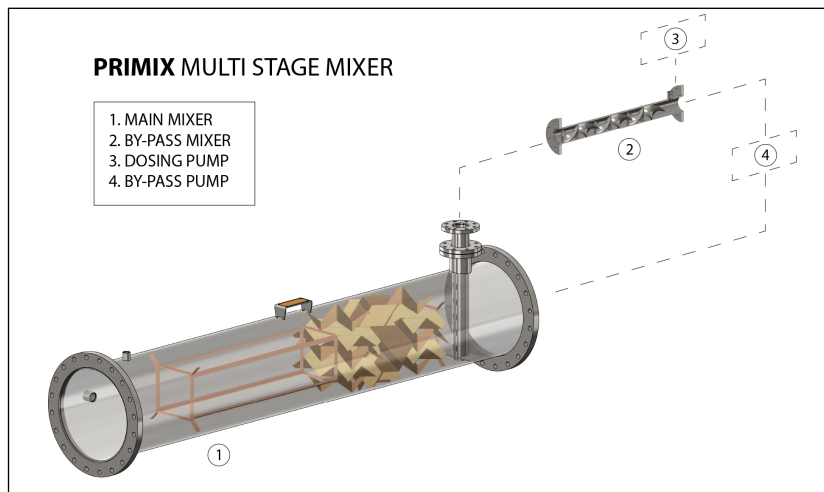
Design a mixer that performs over the complete operating envelope without excessive pressure drop and the solution must be interchangeable.

## Design

A multi stage mixer consists of a main mixer and a by-pass mixer. The dosing of the additive is mixed in the by-pass mixer which operates at a constant flow, extracted from the main line by a pump. Diameter of the by-pass mixer is limited and by optimizing the design, the homogeneity is excellent with a moderate pressure drop. The mixed flow is injected into the main mixer through a dedicated sparger, lowering the dosing ratio, even in turn down conditions, and ensuring an excellent homogeneity and a low pressure drop.

## Solution

Primix multi stage mixers offer a perfect solution when a few litres need to be dosed into a large flow facing a significant turn down.



PRIMIX Multi-stage mixer

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