

**GDS**

**Gas Dispersion  
Motionless Mixer System**

**For drinking water, wastewater  
and process industries**

# The innovative Gas Dispersion

## **GDS**

**A totally new concept for simultaneous mixing and mass transfer exclusively designed and built by the leaders in Motionless Mixing systems**

For years, Static or Motionless Mixers have been used in the water and wastewater treatment industries to disperse gases into liquids in mass transfer applications. To a large extent, the effectiveness of the mixers used in these processes has been dependent on the size of gas bubbles which is, in turn, related to the fluid velocities through the mixers.

Ever increasing demands from regulatory authorities and end users to improve standards of both water and wastewater quality have given rise for the need to look beyond the normal role of Motionless Mixers.

As leaders in Motionless Mixing technology, Statiflo has applied its many years of experience to the problem, resulting in an innovative solution - the revolutionary Statiflo GDS Gas Dispersion System.

### **The Disadvantages of a Single Mixer**

It is well known that, providing the liquid and gas flowrates are fairly consistent, a properly designed conventional inline mixer, operating at a high velocity, will efficiently disperse the gas into small bubbles. But a much lower velocity is necessary to provide time for effective contacting and mass transfer. Clearly, both of these objectives cannot be achieved with the same Motionless Mixer.

Further process problems arise when the flowrates of the liquids and/or gases vary. This has a direct impact on the size of the gas bubbles. A single Motionless Mixer will not therefore perform effectively over a wide range of flowrates - at low flowrates the bubbles tend to be too large for efficient mass transfer and, at high flowrates, the pressure drop tends to be unacceptably high.



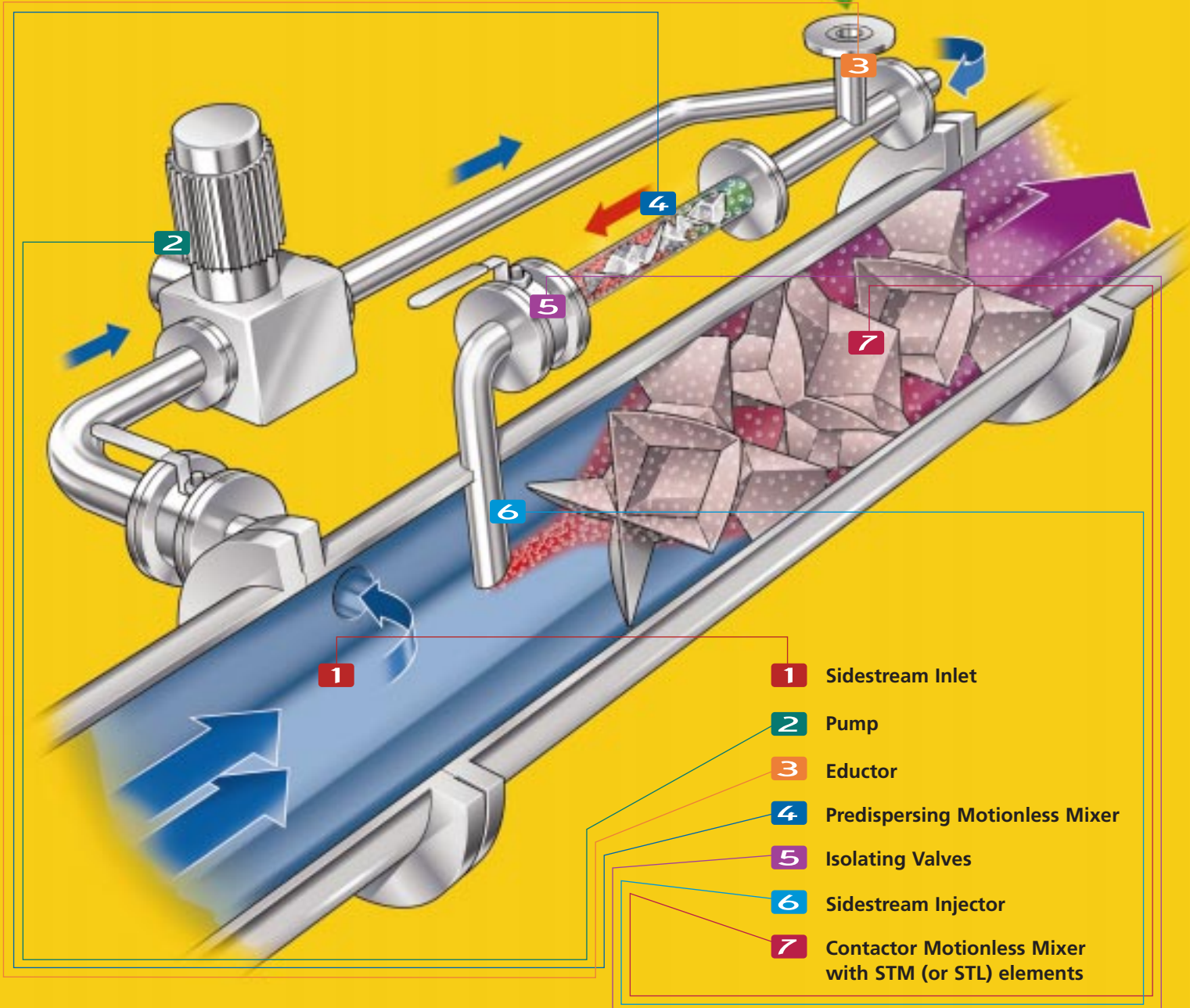


# System: custom designed, engineered

## The Advantages of the Unique Statiflo GDS Gas Dispersion System

The Statiflo GDS has been specifically designed and developed to overcome the difficulties associated with the use of a single mixer. The system uses two different mixers, the first unit optimised to form small gas bubbles and the second

unit optimised to provide contact time and efficient mass transfer. The gas bubbles are formed in a constant velocity sidestream, independent of any variations in the main liquid flowrate. Changes in the main liquid flowrate will not, therefore, adversely effect the gas bubble size and overall performance.



# engineered and built

## The Statiflo GDS

### Inline Gas Dispersion System

Every STATIFLO GDS is custom engineered and built to meet specific performance requirements.

The main components are:

#### Contactor Motionless Mixer

A low pressure drop design providing a "plug flow" contacting environment for effective mass transfer of the pre-dispersed gas in liquid.

#### Sidestream Equipment Comprises:

- A centrifugal pump operating at constant flowrate.
- An eductor, if gas is at low pressure.
- A pre-dispersing gas/liquid Motionless Mixer with "plug flow" characteristics to ensure narrow bubble size distribution curve.
- Sample points, valves, instrumentation, interconnecting pipework and stand-by equipment, as required.

The sidestream gas/liquid dispersing equipment can be compactly side mounted on the Contactor or alternatively skid or floor mounted, as appropriate to each site and customer.



#### Typical applications of the STATIFLO GDS

- Aeration of potable water for iron, manganese and carbon dioxide removal
- Ozonation of potable water and wastewater using either ozone air or ozone oxygen mixtures
  - Carbonation of mineral water
- Miscellaneous gas/liquid mass transfer and contacting duties
  - BOD and COD reduction



# System puts you in total control

The innovative Gas Dispersion System puts you in total control

## Major benefits

- High mass transfer efficiency
- Low capital cost
- Low pressure drop
- Gas bubbles generated independently of main liquid velocity in contactor
- Low energy consumption
- High turndown ratio
- Very compact design
- "Plug flow" characteristic
- No moving parts, except for centrifugal pump
- Minimal maintenance requirement
- Simple to operate. No special training required
- Boost performance of existing contactor by adding sidestream equipment
- No small holes to block up
- No open tanks – completely sealed system
- Elimination of tanks (some applications)



The leading name in Motionless Mixing solutions

With more than 1,200 customers in over 60 countries throughout the world, Statiflo is an undisputed leader in specialist motionless mixing and heat exchange technology.

In addition to the sophisticated GDS gas dispersion systems, Statiflo offers an extensive range of related chemical process equipment including:

- Motionless Mixers for liquids, gases and solids
- Open Channel Mixers
- Heat Exchange Motionless Mixer Systems

An addition to water and wastewater treatment industries, Statiflo mixing and heat exchange technology has many applications in the continuous process industries, oil & gas, chemical, petrochemical, food & pharmaceutical, and pulp & paper industries.

**STATIFLO**  
INTERNATIONAL

Statiflo International Limited  
Wood Street, Macclesfield,  
Cheshire SK11 6JQ,  
United Kingdom

Tel: + 44 (0)1625 433100

Fax: +44 (0)1625 511376

Email: sales@statiflo.co.uk



**Smart**  
Funding Innovation

Award Winner

ISO 9001 : 2000  
Registered Company

Statiflo GmbH  
Auf der Vossweise 2,  
51643 Gummersbach,  
Germany  
Tel: +49 (0)2261 913570  
Fax: +49 (0)2261 913580  
Email: statiflo@gmx.de

Statiflo Corp  
475 E. Housatonic St,  
Dalton, MA 01226,  
USA  
Tel: +1 (413) 684 9911  
Fax: +1 (413) 684 9988  
Email: statiflo@verizon.com

Statiflo Inc  
2175 Sheppard Ave. E., Suite 203,  
Willowdale, Ontario M2J 1W8,  
Canada  
Tel: +1 (416) 756-2406  
Fax: +1 (416) 490-6937  
Email: sales@statiflo.com