



# Batch dissolver

Unit for dissolving bulk ingredients



## Application

A low-cost solution to dissolve crystalline bulks like sugar or dextrose in a discontinuous way.

A typical application can be:

- Dissolving sweeteners, citric acid or similar bulk ingredients with good solubility

## Highlights

- High flexibility in ingredients due to quick recipe change
- Sugar can be fed by tanker, hopper with sacks or big bags
- Inline °Brix monitoring
- Hydraulic conveying reduces sugar dust and allows division of dry and wet area to reduce ATEX requirements
- Feeding point can be placed separately according to need
- Several feeding points possible

## Working principle

A high-volume batch vessel is equipped with a recirculation loop containing a recirculation pump and patented feeding injector. A wide-mesh safety filter protects the pump from damage caused by foreign bodies entering the system via the feeding injector. A hydraulic radial jet mixer (RJM) creates agitation inside the dissolving vessel without adding shear force to the product or creating air bubbles during stirring. The main water supply provides the batch base directly into the recirculation stream.

Inlet water can be preheated if needed for the product's specifications or to dissolve higher concentrations (°Brix). Once the tank is filled with a minimum liquid level to allow recirculating, the injector can create a vacuum.

The injector can be connected to a feeding hopper, a big bag station or directly piped to a truck discharge for transferring liquid sugar into the batch tank. The amount of sugar in water will increase until the nominal °Brix is reached. When a sample (taken from the batch vessel) meets product quality specifications, the batch dissolver can be discharged into a production line.

The system is fully integrated into CIP cycles.

## Main components

- Batch dissolving vessel including RJM
- Main frame
- Feeding injector including hydraulic conveying loop
- Water pre-heating system

## Control panel

The batch dissolver is controlled by an Allen Bradley ControlLogix or Siemens PLC. This is fitted in a cabinet located on the frame and can easily be removed away from the module.

## Options

- Feeding with hopper for sacks
- Feeding with big bag discharge
- Feeding directly by truck

## Example layout

Measurements on request.



## Technical data

All parts in contact with the product are made of AISI 316L. The frame is made of AISI 304L.

Batch dissolvers can hold the following volumes of liquid sugar:

- 15 series: 5 000 litres, 10 000 litres, 15 000 litres batch volume
- 30 series: 20 000 litres, 30 000 litres batch volume (for direct truck unloading)

Other capacities on request.

**Media specifications:** 20 °C at 60 °Brix increasing up to 65 °Brix at 50 °C. Max. 15 m piping distance one way (injector to dissolving tank).

<b>Electrical power</b>	400 V, 50 Hz
Other supply voltage and frequency available	

<b>Water supply</b>	300 kPa (3 bar)
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<b>Steam</b>	300 kPa (3 bar)
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<b>Compressed air</b>	600 kPa (6 bar)
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